

# The Model of Service Quality and Visitor Loyalty of Politeknik Negeri Bali's Library

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**Abstract**— Libraries as information and science centers for universities must have good service quality. Good service quality will make library visitors feel satisfied. Visitor satisfaction can be reflected in visitor loyalty to the library. Politeknik Negeri Bali (PNB) as one of the universities in Indonesia currently has one library room located on the 2nd floor of the PNB Central Building. Based on the data, the average number of PNB's library visitors in the year 2017 is only 15% of the total civitas. This number shows that PNB's library has not been optimally utilized and the low rate of visitor loyalty. The purpose of this research is to model the service quality and visitor loyalty of PNB's library. The analysis used is structural equation modeling using five service quality dimensions namely tangible, reliability, responsiveness, assurance, and empathy. The results of the analysis show that the variable of tangible, reliability, and responsiveness have a significant effect on visitor loyalty of PNB's library.

**Keywords**— library service, visitor loyalty, politeknik negeri bali, structural equation model.

## I. INTRODUCTION

University as educational program needs facilities to run its task. One of the main facility in university is a library. Libraries are considered as treasures of knowledge and also known as storehouse of knowledge. It consists of reading material like books, journals, films, images, manuscripts, and audio visual materials [1]. Among other facilities provided in university, library plays an important role in catering to their customer's academic needs [2].

Library as the heart of universities must have a good service. The collection assessment was the primary focus of traditional library service quality research. However, for the last ten years, academic library service providers have progressively documented the implications of evaluating their library services. [2].

According to [3], only the customers can judge the quality of services and all other judgments are fundamentally unrelated. The library quality service were developed and applied by them to become Libqual (Library Quality Model). The quality service were divided into Tangible or physical evidence like collection, facilities in library, and anything that can be seen; Reliability of the ability of the librarians; (3)

Responsiveness of the librarians; Assurance or the sense of safety of visitors to be in the library; and Emphaty of the librarians.

A good service can satisfy the library visitors and bad service can make the visitors feel dissatisfied. A satisfied visitor can increase the happiness and raises the visitor loyalty [4]. Studies from [5] and [6] also found that the sense of happiness consumers experience toward a brand has a positive influence on the perceived service quality commitment level and brand loyalty.

According to [7] loyalty is a customer's intention to repurchase a product or service from the same brand or service provider. In other words customer's loyalty can be interpreted as the higher value provided by the specify brand or service provider compared to others [8]. Thus customer's loyalty is considered as a key success factor for a seller or brand over a time [9] [10]. Loyalty can be measured by psychological component and behavioral component where psychological component depends on customer's feeling to rely on a person, products or services of an organization [8]. The behavioral component is based on customer's frequency of visiting a certain shop or service [11].

Politeknik Negeri Bali (PNB) as one of the universities in Indonesia currently has one library room located on the second floor behind the central building of PNB. PNB's library collection in the form of audio visual (CD), books, handouts, research reports, street vendors reports, final assignments, reference books, journals and magazines, tabloids, and newspapers. Based on the data, the average number of PNB's library visitors in 2017 is 770 people each month. The number of visitors is only 15% of the total PNB civitas. This shows that the PNB's library has not been optimally used and the low rate of library visitor loyalty. Therefore, this study aims to model and determine the relationship of the quality of PNB's library services with visitor loyalty.

## II. RESEARCH METHOD

This research takes place in Politeknik Negeri Bali (PNB) Library Badung Regency Bali Province Indonesia. The data used in this research is primary data collected by using questionnaire. The population of this research is the visitors of

PNB's Library and the number of sample used is 100 visitor. The samples taken by using accidental sampling technique which is the visitors who were in the PNB's library when the sample was collected. There are five dimensionals of library service that were used in this research, namely Tangible (T), Reliability (R), Responsiveness (Rp), Assurance (A), and Emphaty (E). These five dimensional of library service are suspected in affecting the loyalty of PNB's library visitors. These variables are also classified as latent variable. The idea of latent variables goes from the assumption that the observed phenomena is affected by unobservable/unmeasureable causes directly [12]. The latent variable can not be measured directly but it is measured by some indicators variables or can be called as manifest variable. The variabels and their indicators that were used in this research is shown in Table 1.

TABLE I. VARIABLES AND INDICATORS DEFINITION

Code	Indicator	Code	Indicator
T1	Cleanliness	Rp1	Punctuality in responding a complaint
T2	Design and Layout	Rp2	Perceptive in responding a complaint
T3	Facilities	Rp3	Complaint service is given according to the rules
T4	Update Collection	A1	Safety in Library Room
T5	Good Condition of Collection	A2	Safety in Locker
T6	Neatness	A3	Ease of Finding References
T7	Air Circulation	A4	The number of Librarians
T8	Quantity of Collection	A5	Librarians have a good Knowledge
T9	Neat Librarians	E1	Librarians Hospitality
R1	Ease of Administration	E2	Librarians Concern
R2	Ease of Lending Procedure	E3	Librarians Good Respons
R3	Ease of Lending and Returning Transaction	E4	Good Communication of Librarians
R4	Information Clarity	L1	Frequency of Visit
R5	Clarity of Order	L2	Repeat Visit
		L3	Recomendation to Other

The method that is used in this research is structural equation model (SEM). SEM is a very general statistical modeling technique, which is widely used in the behavioral sciences. SEM has its root in path analysis which was invented by [13]. It can be viewed as a combination of factor analysis and regression or path analysis. According to this fact, generally SEM is begun by making a path diagram that represents the relationship between variables in the model [14]. A path diagram consists of boxes and circles, which are connected by arrows. Observed variables (or measured) are represented by a rectangle or square box and latent (or

unmeasured) variables are represented by circle or ellipse. Single headed arrows or paths are used to define causal relationship in the model, with the variable at the tail of the arrow causing the variable at the point. Double headed arrows indicate covariances or correlation without causal interpretation. The software used in this research is SmartPLS 3.0 and the analysis steps are (1) Model Conceptualization; (2) Determining Algorithm analysis method. This research use path or structural weighting method; (3) Determining resampling method, which is bootstrapping method; (4) Draw the path diagram; and (5) Model Evaluation using the criteria of loading factor, Average Variance Extracted (AVE), Cronbach's Alpha, Composite Reliability, and T-statistics.

### III. RESULTS AND DISCUSSION

#### A. Questionnaire testing

TABLE II. VALIDITY AND RELIABILITY OF QUESTIONAIRE

Dimensi	Item	r -value	validity	Cronbach's Alpha	Reliability
Tangible	1	0.590	Valid	0.873	Reliable
	2	0.474	Valid		
	3	0.503	Valid		
	4	0.735	Valid		
	5	0.597	Valid		
	6	0.629	Valid		
	7	0.642	Valid		
	8	0.729	Valid		
	9	0.607	Valid		
Reliability	10	0.485	Valid	0.874	Reliable
	11	0.788	Valid		
	12	0.866	Valid		
	13	0.776	Valid		
Responsive ness	14	0.630	Valid	0.902	Reliable
	15	0.853	Valid		
Assurance	16	0.769	Valid	0.764	Reliable
	17	0.826	Valid		
	18	0.744	Valid		
	19	0.602	Valid		
	20	0.366	Valid		
Emphaty	21	0.551	Valid	0.831	Reliable
	22	0.538	Valid		
	23	0.642	Valid		
	24	0.687	Valid		
Loyalty	25	0.651	Valid	0.801	Reliable
	26	0.738	Valid		
	27	0.677	Valid		
	28	0.611	Valid		
	29	0.733	Valid		

To begin the analysis, the questionnaire used in this research was tested by using validity and reliability test. The result are shown in the Table 1. Table 1 shows that all of the item in the questioner have correlation value (r-value) more than r-table (for alpha 0.05 r-table is 0.361), so all of the item are stated as valid. While all of the construct have Cronbach's Alpha value greater than 0.6 and stated as reliable. Thus, the questionnaire are decent to be used in this research.

**B. The Structural Equation Model**

The structural model are shown in the Figure 1. All of the quality service dimensions (tangible, reliability, responsiveness, assurance, and empathy) and loyalty variable are laten variable with reflectif indicators. Those quality service dimensions are suspected to affect the visitor loyalty of PNB's Library.

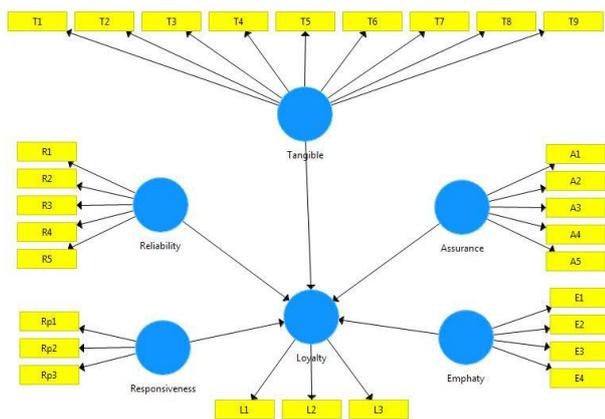


Fig. 1. The Structural Model

**C. Model Evaluation**

There are some quality criteria in evaluating the measurement model in SEM, which are loading factor for each indicator should be greater than 0.6; Average Variance Extracted (AVE) should be greater than 0.5; Cronbach's Alpha and Composite Reliability of each construct/ variable should be greater than 0.6 [15], [16], [17], [18]. Table III shows the loading factor of each indicator. The result shows that all of the indicators have loading factor greater than 0.6.

The value of AVE, Cronbach's Alpha, and Composite Reliability of each construct or variable are shown in Table IV. Table IV shows that each variable has AVE higher than 0.5, Cronbach's Alpha is higher than 0.6, and Composite Reliability is higher than 0.6. Thus, the model already fit the quality criteria.

TABLE III. LOADING FACTOR OF EACH INDICATOR

Indicator	LF	Indicator	LF
T1	0.744	Rp1	0.866
T2	0.687	Rp2	0.862
T3	0.695	Rp3	0.873
T4	0.674	A1	0.873
T5	0.737	A2	0.736
T6	0.671	A3	0.655
T7	0.668	A4	0.761
T8	0.631	A5	0.822
T9	0.608	E1	0.876
R1	0.751	E2	0.894
R2	0.818	E3	0.870
R3	0.832	E4	0.854
R4	0.627	L1	0.671
R5	0.743	L2	0.695
		L3	0.839

TABLE IV. AVE, CRONBACH'S ALPHA, AND COMPOSITE RELIABILITY

Variable	AVE	Cronbach's Alpha	Comp Reliability
Tangible	0.564	0.857	0.886
Reliability	0.574	0.812	0.870
Responsive	0.752	0.837	0.901
Assurance	0.597	0.829	0.880
Empathy	0.763	0.897	0.928
Loyalty	0.520	0.694	0.652

The structural model in SEM is evaluated by the value of R square and f square. The value of R square as 0.75, 0.50, and 0.25 is concluded as strong, moderate, and weak model; while the value of f square as 0.02, 0.15, and 0.35 is concluded that the latent variable has a low, moderate, and high effect on structural level [16]. The result of the structural model evaluation is as shown in table V.

TABLE V. R-SQUARE AND F-SQUARE OF THE MODEL

Criteria	Value	classification
R square	0.837	strong model
F square		
Tangible	0.425	high effect
Reliability	0.155	moderate effect
Responsive	0.745	high effect
Assurance	0.000	low effect
Empathy	0.030	low effect

The results show that R-square of the model is 0.837 or 83.7% which is classified as strong model. It means the variance of variable loyalty is explained 83.7% by the variabel of service quality. The F-square of variable Tangible and Responsiveness are 0.425 and 0.745 which are classified as high effect to loyalty variable. While variable Reliability has a moderate effect on loyalty with the value of F-square as 0.155. Low effect is given by the variable Assurance and Emphaty.

The significant of each eksogen variable is tested using t-statistic, where if T-value is greater than T-table or the p-value is lower than alpha, the conclusion is the exogen variable has a significant effect to endogen variable. The Figure 2 and Table VI shows the result of t-statistic testing.

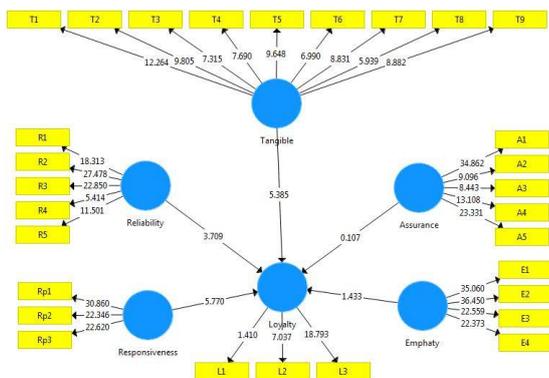


Fig. 2. T-statistics of Model

TABLE VI. T-STAICTCT TSING OF SIGNIFICANCY VARIABLE

Eksogen	sample mean	std dev	t statistic	p value	Conclusion
Tangible	0.425	0.076	5.531	0.000	Sign
Reliabiiti	0.197	0.054	3.768	0.000	Sign
Responsive	0.542	0.097	5.611	0.000	Sign
Assurance	-0.008	0.087	0.112	0.911	Not Sign
Emphaty	-0.115	0.073	1.489	0.137	Not Sign

The results show that tangible, reliability, and responsiveness has t-statistic as 5.531, 3.768, and 5.611 which are greater than t-table 1.96, and the p-value as 0.000 is lower than alpha 0.05. It can be concluded that the variable of Tangible, Reliability, and Responsiveness have a significant effect to Visitor Loyalty in PNB’s Library. While the variable of Assurance and Emphaty do not have a significant effect to Visitor Loyalty in PNB’s Library.

**IV. CONCLUSIONS**

According to the analysis that have been done, conclusion obtained that there are three variables in library quality service dimension that affect the visitor loyalty in Politeknik Negeri Bali’s Library, namely Tangible, Reliability, and

Responsiveness. While the other variable, assurance and empathy have no significant affect in visitor loyalty.

There are some suggestions to the Librarians and the leaders of Politeknik Negeri Bali to improve the loyalty of PNB library visitors, which are as following:

1. Make sure to take care of the tangible or physical things like the library facilities, cleanliness of the room, design and layout, the collection must be updated, in good condition and also neat, the air circulation facilities like air conditioner (AC) must be in a good condition, and the librarians also should be in a neat appearance.
2. The library shoud have a clear administrations procedure and process
3. The librarians should increase the good response in taking care of visitor’s complaint.

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