

## The Effect of Infrastructure Management and Librarian Competencies on the Quality of Library Services at UIN Bukittinggi

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### Abstract

The purpose of this study is to analyze the influence of management of facilities and the competence of librarians on library services at UIN Sjech M. Djamil Djambek Bukittinggi. The study was motivated by the suboptimal nature of library services, which is evidenced by limited resources, inconsistent responsiveness, and the need to improve librarians' technology skills. The study used a quantitative approach with a population of 1,069 people and a sample of 291 respondents, determined using the Slovin formula through the Probability Sampling technique with the Proportionate Stratified Random Sampling method. Data analysis was performed using descriptive statistics, prerequisite analysis tests, and hypothesis testing using simple and multiple linear regression. The results of the study showed that: (1) management of facilities and infrastructure has a positive and significant impact on library services, contributing 21.7%; (2) librarian competence has a positive and significant impact on library services, contributing 24.9%; and (3) management of facilities and infrastructure and librarian competence have a positive and significant impact on library services, contributing 47.2%. These findings suggest that improving the management of facilities and the competencies of librarians is important for enhancing the quality of library services at UIN Sjech M. Djamil Djambek Bukittinggi.

### Keywords

Management of Facilities; Librarian Competence; Library Service.

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## 1. INTRODUCTION

University libraries are a strategic component in supporting the implementation of the Tri Dharma of Higher Education—namely, education, research, and community service. Libraries serve not only as centers for providing information but also as facilities for learning, research, and the advancement of knowledge for the academic community (Dani, 2019). Therefore, the quality of library services is a crucial factor determining the level of library utilization by users. High-quality library services provide convenience, comfort, and satisfaction to patrons in accessing the information they need. Conversely, suboptimal services can reduce interest in visiting the library and utilizing the available information resources.

Library services, by their very nature, consist of a series of activities carried out to meet users' information needs effectively and efficiently. The quality of library services can be measured through



several indicators, namely physical evidence (tangibles), reliability, responsiveness, assurance, and empathy provided to library users (BAPM, 2008). In the context of university libraries, high-quality service is essential for libraries to adapt to advancements in information technology and the increasingly complex needs of users.

One factor that influences the quality of library services is the management of facilities and infrastructure. Facility and infrastructure management is the process of planning, organizing, directing, and supervising all library facilities so that they can be used optimally to support the delivery of services (Nadhifah, 2020).

Good facility management creates a library environment that is comfortable, safe, and conducive to effective service delivery. Conversely, limitations in facilities and infrastructure can hinder access to information, reduce user comfort, and lower the quality of services provided (Askal, 2022).

In addition to the management of facilities and infrastructure, librarians' competencies also play a crucial role in determining the quality of library services. Librarians' competencies encompass the knowledge, skills, and professional attitudes required to perform library duties. Librarians are expected not only to master technical aspects such as collection management and information technology but also to possess communication skills, service orientation, and the ability to adapt to developments in digital technology (Widiasa, 2007).

Adequate competencies enable librarians to provide services that are fast, accurate, friendly, and tailored to users' needs.

Observations at the UIN Sjech M. Djamil Djambek Library in Bukittinggi indicate that library services still face several challenges. Based on initial observations, it was found that service responsiveness is not yet fully consistent; there are still limitations in the facilities and infrastructure supporting these services; and librarians' competencies in utilizing information technology and digital services still need to be improved. These conditions have the potential to affect user satisfaction with library services. In fact, in the era of digital transformation, libraries are required to be able to provide fast, accurate, easily accessible, and technology-based services to meet the information needs of the academic community.

Various previous studies have shown that facilities and infrastructure, as well as librarian competencies, are important factors influencing the quality of library services. A study by Dinar Azizah Arifin (2022) found that librarian competencies have a significant impact on library user satisfaction. Research by Dwi Hanadya et al. (2021) also indicates that the condition of facilities and infrastructure affects students' level of satisfaction with library services. However, research examining the simultaneous influence of facilities and infrastructure management and librarian competencies on

library services at state Islamic universities remains relatively limited, particularly in the context of UIN Sjech M. Djamil Djambek Bukittinggi.

Based on this background, this study focuses on the influence of facilities and infrastructure management and librarian competencies on library services at UIN Sjech M. Djamil Djambek Bukittinggi. The objectives of this study are to analyze the impact of facility and infrastructure management on library services, to analyze the impact of librarian competencies on library services, and to analyze the simultaneous impact of these two variables on library services.

The results of this study are expected to make a theoretical contribution to the development of research on library management and Islamic education management, as well as to provide practical benefits for library administrators in formulating strategies to improve service quality through the optimization of facilities and infrastructure and the strengthening of librarians' competencies.

## **2. METHOD**

This study employs a quantitative approach using an associative research design to determine the influence of facilities and infrastructure management and librarian competencies on library services at UIN Sjech M. Djamil Djambek Bukittinggi (Putri & Hendrarso, 2025). A quantitative approach was chosen because this study focuses on measuring relationships between variables expressed numerically and analyzed using statistical techniques (Lina & Jannah, 2011).

The study was conducted at the UIN Sjech M. Djamil Djambek Bukittinggi Library. The study population consisted of all active library users registered as members, totaling 1,069 individuals. The sample was determined using the Slovin formula with a 5% margin of error, resulting in a sample of 291 respondents. The sampling technique used was probability sampling with the proportionate stratified random sampling method, ensuring that every member of the population had an equal chance of being selected and that the representativeness of each population stratum was guaranteed (Ardiansyah, Risnita, & Jailani, 2023).

The research variables consist of facilities and infrastructure management as the first independent variable ( $X_1$ ), librarian competence as the second independent variable ( $X_2$ ), and library services as the dependent variable ( $Y$ ). The indicators of infrastructure management include plan (planning), do (implementation), check (monitoring and evaluation), and act (follow-up/improvement). Librarian competence is measured through indicators of knowledge, interpersonal skills, and professional attitude. Meanwhile, library service is measured based on the dimensions of tangibles, reliability, responsiveness, assurance, and empathy.

Data collection was conducted using a closed-ended questionnaire with a five-point Likert scale, ranging from "strongly disagree" to "strongly agree." Before use, the research instrument was first

tested for validity and reliability to ensure its suitability as a data collection tool (Waruwu, Pu`at, Utami, Yanti, & Rusydiana, 2025).

Data analysis was performed using descriptive statistics to describe the characteristics of the research data. Subsequently, prerequisite tests for analysis were conducted, including tests for normality, multicollinearity, and heteroscedasticity (Hardani, Helmina Andriani et al., 2020).

Hypothesis testing was conducted using simple linear regression to determine the partial effect of each independent variable on the dependent variable, as well as multiple linear regression to determine the simultaneous effect of facilities and infrastructure management and librarian competence on library services (Syafriada, 2022). The entire data analysis process was conducted using the Statistical Package for the Social Sciences (SPSS) software. The results of the hypothesis testing were determined based on a significance level of 0.05, with the stipulation that  $H_0$  is rejected and  $H_1$  is accepted if the significance value is  $< 0.05$ .

### 3. FINDINGS AND DISCUSSION

#### 3.1 Respondent Characteristics and Description of Research Variables

The description of the research data aims to provide an overview of the data obtained from the study on the Influence of Infrastructure Management and Librarian Competencies on Library Services at UIN Sjech M. Djamil Djambek in Bukittinggi. Before conducting further analysis of the relationships among the research variables, the researcher first presents an overview of the research data through descriptive statistical analysis. This descriptive analysis is important to provide preliminary information regarding the condition of the data obtained from the respondents, thereby revealing the characteristics of each research variable (Syafriada, 2022).

The research data were obtained by distributing questionnaires to 291 respondents. The variables studied consist of Infrastructure Management ( $X_1$ ), Librarian Competence ( $X_2$ ), and Library Services ( $Y$ ). Descriptive statistics in this study include the sample size ( $N$ ), mean, median, mode, standard deviation, range, minimum value, and maximum value. The presentation of these descriptive statistics aims to identify trends in respondents' answers as well as the degree of data variation for each research variable.

Through descriptive statistical analysis, the researcher can obtain an overview of the respondents' ratings of each research variable before conducting further tests, such as analysis of variance (ANOVA) and hypothesis testing.

**Table 1.** Descriptive Statistics of Research Variables

		Statistics		
		Manajemen Sarana Prasarana	Kompetensi Pustawakan	Pelayanan Perpustakaan
N	Valid	291	291	291
	Missing	0	0	0
Mean		59.7079	59.7320	64.1306
Std. Error of Mean		.42342	.42411	.52780
Median		60.0000	60.0000	63.0000
Mode		60.00	58.00	60.00
Std. Deviation		7.22309	7.23476	9.00365
Range		40.00	33.00	45.00
Minimum		35.00	42.00	41.00
Maximum		75.00	75.00	86.00

### 3.2 The Effect of Facilities and Infrastructure Management on Library Service

The results of the simple linear regression analysis indicate that facilities and infrastructure management has a positive and significant effect on library services.

**Table 2.** t-Test (Partial) of X1 on Y

		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	29.442	3.902		7.546	.000
	Manajemen Sarana Prasarana	.581	.065	.466	8.955	.000

a. Dependent Variable: Pelayanan Perpustakaan

This is evidenced by a t-value of 8.955, which is greater than the critical t-value of 1.968, and a p-value of 0.000, which is less than 0.05. Thus,  $H_0$  is rejected and  $H_1$  is accepted, meaning that the better the management of facilities and infrastructure, the better the library services perceived by users.

**Table 3.** Coefficient of Determination of X1 with Respect to Y

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.466 <sup>a</sup>	.217	.215	7.980

a. Predictors: (Constant), Manajemen Sarana Prasarana

The coefficient of determination ( $R^2$ ) value of 0.217 indicates that facility management contributes 21.7% to library services, while 78.3% is influenced by other factors outside the scope of this study. These findings suggest that the management of library facilities is one of the key factors in improving the quality of service provided to library users.

Theoretically, these research results align with Falah's (2022) view, which states that library facilities management encompasses the processes of planning, organizing, directing, and supervising all library activities to ensure they operate effectively and efficiently. Good facility management creates a service environment that is comfortable, safe, and supportive of users' needs.

The findings of this study are also supported by the theory of facility management characteristics, which emphasizes efficiency, effectiveness, user orientation, and adaptation to technological developments. When facilities such as reading rooms, computers, internet networks, digital collections, and other supporting resources are managed optimally, users will find it easier to access information and utilize library services.

The results of this study are consistent with the research by Dwi Hanadya et al. (2021), which concluded that the condition of facilities and infrastructure influences students' satisfaction with library services. Thus, the quality of library services is determined not only by human resources but also by the availability and management of adequate facilities.

### 3.2 The Effect of Librarians' Competence on Library Services

The results of the second hypothesis test indicate that librarians' competence has a positive and significant effect on library services.

**Table 4.** Partial t-Test and Chi-Square Test for Y

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	27.073	3.818		7.090	.000
	Kompetensi Pustakawan	.620	.063	.499	9.776	.000

a. Dependent Variable: Pelayanan Perpustakaan

This is indicated by the calculated t-value of 9.776, which is greater than the critical t-value of 1.968, with a p-value of 0.000, which is less than 0.05. Therefore,  $H_0$  is rejected and  $H_1$  is accepted.

**Table 5.** Coefficient of Determination X2 Relative to Y

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.499 <sup>a</sup>	.249	.246	7.819

a. Predictors: (Constant), Kompetensi Pustakawan

The coefficient of determination ( $R^2$ ) value of 0.249 indicates that librarian competencies contribute 24.9% to library services, while 75.1% is influenced by other factors not examined in this study. These results suggest that librarian competencies play a greater role than facility and infrastructure management in improving the quality of library services.

Theoretically, these findings support the concept of librarian competencies as outlined in the Indonesian National Occupational Standards (SKKNI), namely the abilities—encompassing knowledge, skills, and work attitudes—that can be observed in the performance of duties in accordance with established standards.

Strong librarian competencies enable them to provide services that are fast, accurate, responsive, and tailored to user needs.

This study also reinforces the theory that librarian competencies consist of knowledge, interpersonal skills, and professional attitude. Librarians who possess proficiency in information technology, strong communication skills, and a professional attitude will be better able to provide quality services to library users.

In today's digital age, librarians' competencies have become essential, as libraries no longer serve only print collections but also provide information technology-based services and digital resources. Therefore, efforts to enhance librarians' competencies through training, certification, and continuous professional development must be sustained to ensure increasingly optimal library services.

These findings align with research by Dinar Azizah Arifin (2022) and Muhamad Syahrul Mubarak & Anis Masruri (2021), which concluded that librarians' competencies are a key factor in improving the quality of library services and user satisfaction.

### 3.3 The Effect of Facilities and Infrastructure Management and Librarian Competence on Library Services

The results of the multiple linear regression analysis indicate that facilities and infrastructure management and librarian competence simultaneously have a positive and significant effect on library services.

This is evidenced by the calculated F-value of 128.882, which is greater than the critical F-value of 3.03, and a p-value of 0.000, which is less than 0.05. Thus,  $H_0$  is rejected and  $H_1$  is accepted.

**Table 6.** Coefficient of Determination  $R^2$

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.687 <sup>a</sup>	.472	.469	6.563

a. Predictors: (Constant), Kompetensi Pustakawan, Manajemen Sarana Prasarana

The coefficient of determination ( $R^2$ ) of 0.472 indicates that facility management and librarian competence together contribute 47.2% to library services. Meanwhile, 52.8% is influenced by other variables not examined in this study, such as leadership, organizational culture, library information systems, collection quality, user satisfaction, and external environmental factors.

These findings support library service theory, which states that service quality is influenced by the dimensions of tangibles, reliability, responsiveness, assurance, and empathy.

**Tabel 7.** F-Test

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11103.304	2	5551.652	128.882	.000 <sup>b</sup>
	Residual	12405.734	288	43.075		
	Total	23509.038	290			

a. Dependent Variable: Pelayanan Perpustakaan

b. Predictors: (Constant), Kompetensi Pustakawan, Manajemen Sarana Prasarana

Facility management contributes primarily to the tangibles dimension, while librarian competence contributes to the reliability, responsiveness, assurance, and empathy dimensions. The combination of both results in higher-quality service capable of optimally meeting patrons' needs (Rahayu, 2015).

These findings indicate that improving the quality of library services cannot be achieved simply by providing comprehensive facilities or by enhancing librarians' competencies alone. Both aspects must be developed in a balanced and sustainable manner. Adequate infrastructure without the support of competent librarians will not result in optimal service. Conversely, competent librarians will face limitations in providing services if the available facilities are inadequate.

Thus, the results of this study confirm that the success of library services at UIN Sjech M. Djamil Djambek Bukittinggi is greatly influenced by the synergy between effective infrastructure management and the professional competence of librarians. These two factors are strategic components that must be prioritized in efforts to improve the quality of library services in higher education settings.

#### **4. CONCLUSIONS**

This study aims to analyze the influence of facilities and infrastructure management and librarian competencies on library services at UIN Sjech M. Djamil Djambek Bukittinggi. Based on the results of the data analysis, it can be concluded that the management of facilities and infrastructure has a positive and significant effect on library services, contributing 21.7%. This indicates that the management of facilities and infrastructure—when carried out in a planned, organized, and sustainable manner—can improve the quality of services received by library users. Furthermore, librarians' competencies also have a positive and significant effect on library services, contributing 24.9%. This finding indicates that enhancing librarians' knowledge, skills, and professional attitudes is a key factor in delivering responsive, reliable, and user-centered services.

Simultaneously, infrastructure management and librarian competence have a positive and significant impact on library services, accounting for 47.2% of the variation, while 52.8% is influenced by other factors outside the research model. These results confirm that improving the quality of library services requires synergy between adequate facility management and the professional competence of librarians. Thus, these two variables are strategic aspects that must be prioritized in efforts to improve the quality of library services in higher education settings.

Based on the research findings, the UIN Sjech M. Djamil Djambek Bukittinggi Library is advised to continue optimizing the management of facilities and infrastructure—particularly through the development of information technology-based facilities—and to enhance librarians' competencies through education, training, certification, and continuous professional development. For future researchers, it is recommended to develop a research model by incorporating additional variables that

may influence library services, such as leadership, organizational culture, collection quality, library information systems, user satisfaction, and digital transformation, thereby yielding a more comprehensive model to explain the factors affecting the quality of library services.

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