

Institutional Factors as Determinants of Perceived Service Quality in Academic Libraries: A Study of University Libraries in Edo State Nigeria

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ABSTRACT

University libraries play a critical role in supporting teaching, learning, and research in Nigerian higher education. This study investigated institutional factors as determinants of perceived service quality in university libraries in Edo State, Nigeria, guided by the SERVQUAL framework. A descriptive survey design was adopted, with total enumeration applied to cover all 202 library personnel across six universities: University of Benin, Ambrose Alli University, Benson Idahosa University, Wellspring University, Igbinedion University, and Edo State University, Uzairue. Data were collected using a validated self-structured questionnaire (CVI = 0.82; Cronbach's α = 0.84–0.87) and analysed using descriptive statistics and multiple linear regression. Findings revealed a moderate overall service quality level (grand mean = 2.91), with reliability and empathy as the strongest dimensions and tangibility recording the lowest scores. Institutional factors collectively accounted for 55.1% of variance in perceived service quality ($R^2 = .551$; $F = 49.072$; $p < .001$). Technical support emerged as the strongest predictor ($\beta = .312$), followed by training ($\beta = .275$), ICT facilities ($\beta = .267$), funding ($\beta = .224$), and managerial support ($\beta = .198$). The study concludes that sustainable improvement in library service quality requires coordinated institutional investment in technological infrastructure, staff development, and diversified funding strategies.

ABSTRAK

Perpustakaan universitas memainkan peran penting dalam mendukung proses pengajaran, pembelajaran, dan penelitian di pendidikan tinggi Nigeria. Penelitian ini menyelidiki faktor-faktor institusional sebagai penentu kualitas layanan yang dirasakan di perpustakaan universitas di Negara Bagian Edo, Nigeria, dengan berpedoman pada kerangka kerja SERVQUAL. Penelitian ini menggunakan desain survei deskriptif, dengan metode total enumeration yang mencakup seluruh 202 tenaga perpustakaan di enam universitas, yaitu University of Benin, Ambrose Alli University, Benson Idahosa University, Wellspring University, Igbinedion University, dan Edo State University, Uzairue. Data dikumpulkan menggunakan kuesioner terstruktur yang telah divalidasi sendiri (CVI = 0,82; Cronbach's α = 0,84–0,87) dan dianalisis menggunakan statistik deskriptif serta regresi linier berganda. Hasil penelitian menunjukkan tingkat kualitas layanan secara keseluruhan berada pada kategori sedang (grand mean = 2,91), dengan dimensi reliability (keandalan) dan empathy (empati) sebagai dimensi terkuat, sementara tangibility (bukti fisik) memperoleh skor terendah. Faktor-faktor institusional secara bersama-sama menjelaskan 55,1% varians dalam

kualitas layanan yang dirasakan ($R^2 = 0,551$; $F = 49,072$; $p < 0,001$). Dukungan teknis muncul sebagai prediktor terkuat ($\beta = 0,312$), diikuti oleh pelatihan ($\beta = 0,275$), fasilitas TIK ($\beta = 0,267$), pendanaan ($\beta = 0,224$), dan dukungan manajerial ($\beta = 0,198$). Penelitian ini menyimpulkan bahwa peningkatan kualitas layanan perpustakaan secara berkelanjutan memerlukan investasi institusional yang terkoordinasi dalam infrastruktur teknologi, pengembangan sumber daya manusia, serta strategi pendanaan yang lebih beragam.

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1. INTRODUCTION

University libraries are fundamental pillars of higher education institutions, serving as essential infrastructure for teaching, learning, and research activities. These libraries have evolved from traditional repositories of books to dynamic information centers that provide diverse services and resources to support academic excellence (Dadzie & Van der Walt, 2015). In Nigeria's academic landscape, university libraries face significant challenges in delivering quality services while adapting to technological advancements and changing user expectations, particularly in terms of digital resource integration and service modernization (Oyewusi & Oyeboade, 2009). The effectiveness of these libraries in supporting academic activities has become increasingly crucial as universities strive to maintain competitive advantages in the global knowledge economy.

The quality of library services depends heavily on various institutional factors, including infrastructure, funding, staff development, and administrative support. Studies have shown that these institutional determinants significantly impact the ability of academic libraries to meet user needs and expectations (Adeniran, 2011). Research by Ogunsola (2011) demonstrated that Nigerian university libraries face particular challenges related to infrastructure development, technological integration, and service delivery capabilities. The relationship between institutional support and service quality has become more pronounced as libraries transition from traditional service models to more technology-driven approaches that require substantial institutional investment and support.

The rapid evolution of information technology and changing patterns of information seeking behavior have transformed the landscape of academic library services globally. In Nigerian universities, this transformation has been accompanied by various challenges, including inadequate funding, infrastructure limitations, and the need for continuous staff development (Ifijeh, 2011). The situation in Edo State's university libraries reflects these national trends, with institutions struggling to maintain service quality while adapting to technological changes and increasing user demands for electronic resources and digital services (Idiegbeyan-Ose et al., 2019).

Despite the critical role of university libraries in supporting academic activities, there is limited empirical evidence on how institutional factors influence service quality in Nigerian university libraries, particularly in Edo State. Recent research by Igbinoia and Ishola (2023) highlights significant gaps in understanding how institutional support mechanisms affect service delivery in Nigerian academic libraries, especially in the context of evolving technological demands. While previous studies have

examined various aspects of library services, there remains a gap in understanding the specific relationship between institutional factors and service quality delivery. This study therefore investigates how institutional determinants such as technical support, training, ICT facilities, funding, and managerial support influence the quality of services provided by university libraries in Edo State, Nigeria.

The main objective of this study is to investigate institutional factors as determinants of service quality delivery in university libraries in Edo State, Nigeria. The specific objectives are to: 1) Evaluate the perceived service quality delivery in university libraries in Edo State, Nigeria. 2) Identify the prevailing institutional factors affecting library services in university libraries in Edo State, Nigeria. 3) Examine the challenges of quality service delivery in university libraries in Edo State, Nigeria.

The following research questions guide this study: 1) What is the perceived service quality delivery in university libraries in Edo State, Nigeria? 2) What prevailing institutional factors affect library services in university libraries in Edo State, Nigeria? 3) What challenges of quality service delivery in university libraries in Edo State, Nigeria? The null hypotheses was tested at 0.05 level of significance, **H01:** There is no significant relationship between institutional factors and service quality delivery in university libraries in Edo State, Nigeria.

Academic library performance is intrinsically linked to holistic institutional backing, which serves as a cornerstone for effective service provision. The complex ecosystem of library support integrates multiple critical dimensions, ranging from strategic governance frameworks and technological capabilities to spatial design, digital resource management, and financial provisioning. Scholarly investigations consistently underscore that the absence of robust institutional foundations substantially compromises libraries' capacity to deliver optimal services and fulfill diverse user requirements, ultimately hindering their operational potential and strategic relevance.

Service delivery fundamentally represents an organizational commitment to creating meaningful value and addressing user needs comprehensively. Libraries, as critical knowledge institutions, are uniquely positioned to transform user experiences through strategic service provision. Professional service transcends mere transactional interactions, embodying a profound commitment to user satisfaction and intellectual empowerment (Hicks, 2016).

Contemporary research conceptualizes service delivery through multidimensional quality frameworks, emphasizing critical elements such as reliability, responsiveness, professional expertise, empathy, and tangible resources (Prakoso et al., 2017). These dimensions collectively shape the user's perception of service effectiveness and institutional credibility. Scholarly perspectives consistently emphasize that exceptional service delivery requires librarians to continuously evolve their professional competencies. Uyar (2019) highlights the imperative of providing optimal services that not only meet but exceed user expectations. Institutional research, such as SCONUL (2020), further validates that superior library services play a crucial role in attracting academic talent and enhancing institutional prestige. Ultimately, as Agoh and Omekwu (2021) articulate, library and information service delivery represents a strategic process designed to deploy resources and activities that meaningfully enhance user productivity and knowledge acquisition. These perspective positions libraries as dynamic, responsive institutions committed to supporting intellectual growth and academic excellence.

An investigation by Mayira (2023) at Uganda Christian University Library explored the transformative potential of continuous professional development programs in library service contexts. Utilizing a descriptive survey approach with a focused sample of 28 respondents, the research uncovered compelling insights into staff skill enhancement mechanisms. The study highlighted diverse professional development strategies, including conferences, workshops, internal and external training initiatives, mentor-ship programs, and scholarship opportunities. These interventions demonstrably improved staff competencies, facilitating more effective service delivery and particularly enhancing e-resource training capabilities.

However, the research also critically identified significant implementation challenges confronting professional development programs. These obstacles included administrative inflexibility, misalignment between acquired skills and specific work sections, technological infrastructure limitations like unreliable internet connectivity and inconsistent power supply, and notable budgetary constraints. The study underscored the imperative of addressing these systemic challenges to ensure meaningful professional development and consequent service quality improvements.

Research across various contexts has illuminated the multifaceted nature of institutional support in organizational settings. In the Nigerian library landscape, Ajayi et al. (2021) explored collection development practices in private university libraries, highlighting critical support mechanisms such as timely budget allocations during accreditation processes, consistent salary payments, and provision of essential workplace infrastructure. Complementing this perspective, Mengich and Kiptum's (2018) Kenyan study demonstrated how strategic resource allocation directly correlates with service quality delivery, while Ghana's public spending management research underscored the importance of comprehensive expenditure regulations and structural frameworks.

Lazarus, Unegbu, and Opeke's (2019) investigation in Lagos State revealed that institutional support—encompassing financial resources, motivational strategies, supportive policies, and targeted staff training—plays a transformative role in enhancing indigenous knowledge documentation within library systems. Falola and colleagues extended this understanding by examining how various support dimensions, including research, pedagogical, and technical assistance, significantly influence faculty performance across critical domains such as research productivity, knowledge sharing, and administrative effectiveness.

Drawing from a broader organizational perspective, Zhang et al. (2017) found that institutional support positively impacts innovation and organizational performance. However, their research also cautioned that dysfunctional competitive environments could potentially mitigate these positive effects, highlighting the nuanced and contextual nature of institutional support mechanisms.

This study is anchored in the SERVQUAL model, originally developed by Parasuraman, Zeithaml, and Berry (1988) and subsequently refined in their 1991 publication. SERVQUAL is one of the most rigorously validated and widely applied instruments for measuring service quality across diverse organisational settings, including academic and public libraries. The model posits that service quality is best understood as the gap between a user's expectations of a service and their actual perceptions of service performance, operationalised through five core dimensions: tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman, Zeithaml, and Berry, 1988). The selection of

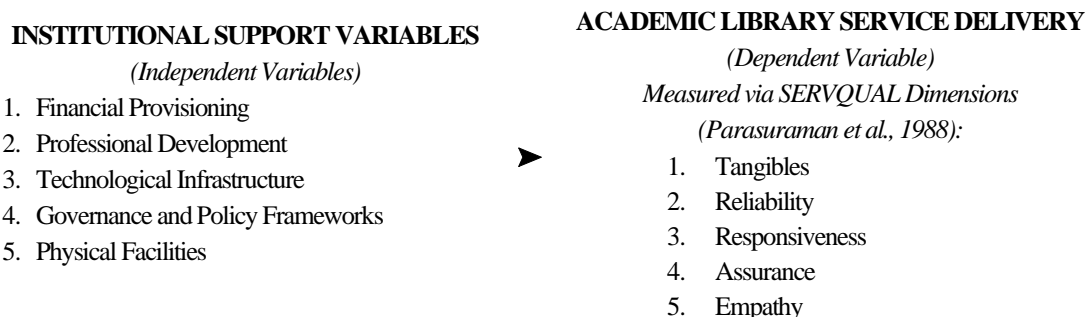
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SERVQUAL as the guiding theoretical framework for this study is deliberate and methodologically justified for two reasons.

First, the model has been extensively adopted and validated in library science research. Nitecki (1996) was among the first to apply SERVQUAL specifically within academic library settings, demonstrating its suitability and reliability in this context. Subsequent studies by Cook and Thompson (2000) further confirmed the model's applicability to library service quality evaluation. Second, the five SERVQUAL dimensions map directly onto the institutional support variables examined in this study, namely financial provisioning, professional development, technological infrastructure, governance and policy frameworks, and physical facilities. The SERVQUAL model's five dimensions—tangibles, reliability, responsiveness, assurance, and empathy—provide a comprehensive framework for evaluating and improving service quality.

The conceptual model guiding this study illustrates the relationship between five key institutional support variables (independent variables) and academic library service delivery evaluated through the SERVQUAL dimensions (dependent variable). The model draws on the theoretical logic of the SERVQUAL gap model (Parasuraman et al., 1988) and is informed by empirical evidence from the library science literature.

Figure 1: Conceptual Model showing the influence of Institutional Support on Academic Library Service Delivery based on the SERVQUAL Framework (adapted from Parasuraman, Zeithaml, and Berry, 1988)



2. METHOD

The study employed a descriptive survey research design, which allowed for comprehensive data collection and systematic analysis of institutional factors and service quality in university libraries. A descriptive survey design was deemed appropriate for this study because it facilitates the collection of quantitative data from a defined population at a specific point in time, enabling the researcher to describe existing conditions, identify patterns, and examine relationships among variables without manipulating the study environment (Creswell, 2014).

The population of the study comprised 202 library personnel in six (6) university libraries in Edo State, Nigeria, namely: John Harris Library, University of Benin (88); Ambrose Alli University (57); Benson Idahosa University (13); Wellspring University Library (8); Igbinedion University Library (19); and Edo State University, Uzairue (13). Total enumeration was adopted to cover all 202 library personnel in the six university libraries, given the manageable size of the population. This approach

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was suitable given the relatively small and accessible size of the population, ensuring that all perspectives were captured and minimizing sampling error (Nwana, 2005).

Table 1: Distribution of Library Personnel in Edo State Universities

Institution	Number of Personnel	Percentage (%)
University of Benin (John Harris Library)	88	43.6%
Ambrose Alli University	57	28.2%
Igbinedion University	19	9.4%
Benson Idahosa University	15	7.4%
Edo State University, Uzairue	15	7.4%
Wellspring University	8	4.0%
Total	202	100.0%

The instrument for data collection was a self-structured questionnaire developed by the researchers based on a review of extant literature on institutional factors and service quality in academic libraries. The questionnaire was divided into two parts. Part A captured demographic information, while Part B contained items measuring the study variables on a four-point Likert scale anchored at Strongly Agree (4) and Strongly Disagree (1). Items were developed from a review of extant literature on institutional factors and service quality in academic libraries.

Content validity was established through expert review involving three specialists in Library and Information Science and one research methodology expert, whose observations were incorporated into the final instrument. A Content Validity Index (CVI) of 0.82 was obtained, meeting the acceptable threshold established by Lynn (1986). Construct validity was assessed via exploratory factor analysis using principal component analysis with varimax rotation; items with factor loadings below 0.40 were deleted, and the resulting factor structure aligned with the study's theoretical framework. Instrument reliability was determined through a pilot study involving 20 library personnel at Delta State University, Abraka which is outside the study area. Cronbach's Alpha coefficients were computed for each construct, and the results are presented in Table 2.

Table 2: Reliability Statistics (Cronbach's Alpha)

Construct / Variable	No. of Items	Cronbach's α
Institutional Factors (Staff Strength and Funding)	33	0.84
Challenges	15	0.81
Perceived Service Quality (Overall)	24	0.87

Copies of the questionnaire were administered personally by the researcher and trained research assistants to all 202 library personnel across the six universities. This approach ensured high response rates and allowed for immediate clarification of ambiguous items. Completed questionnaires were retrieved within two weeks of administration. Data collected were analyzed using both descriptive and inferential statistics with the aid of the Statistical Product and Service Solutions (SPSS) version 20. Descriptive statistics including frequencies, percentages, means, and standard deviations were used to summarize the demographic characteristics of respondents and to describe the levels of the study

variables. Inferential statistics, specifically Pearson’s correlation and multiple linear regression analysis were employed to examine the relationships and predictive influence of institutional factors on perceived service quality. Multiple linear regression was chosen because the study sought to assess the extent to which institutional factors (independent variables) predict perceived service quality (dependent variable), while controlling for the simultaneous influence of multiple predictors. Regression analysis is appropriate when the dependent variable is continuous and when the researcher aims to quantify the relative contribution of each predictor variable (Field, 2024).

Prior to conducting the regression analysis, the five key assumptions of multiple linear regressions were systematically examined to ensure the validity and reliability of the model. First, the assumption of *normality* was assessed by examining the distribution of model residuals using the Kolmogorov-Smirnov test and normal Probability-Probability (P-P) plots. The results indicated that residuals were approximately normally distributed, satisfying this requirement for valid inferential testing (Field, 2024). Second, *multicollinearity* among the predictor variables was evaluated using Variance Inflation Factor (VIF) scores and Tolerance statistics. All VIF values were below 10 and all Tolerance values exceeded 0.10, confirming that the predictors were sufficiently independent of one another and that multicollinearity did not distort the regression estimates (Hair et al., 2010). Third, the assumption of *homoscedasticity*—that residual variance is constant across all levels of the predicted values—was checked through visual inspection of scatterplots of standardized residuals against standardized predicted values. No systematic funnel or pattern was detected, confirming equal error variance across the model. Fourth, *linearity* between each predictor and the dependent variable was verified through Pearson’s correlation coefficients and partial regression plots, all of which confirmed linear relationships, justifying the use of a linear model. Fifth, the assumption of *independence of errors* was tested using the Durbin-Watson statistic. A value of 1.97 was obtained, which falls within the acceptable range of 1.5 to 2.5, indicating that the residuals were not autocorrelated and that each observation contributed independently to the model (Hair et al. 2010). Having satisfied all five assumptions, the regression model was deemed appropriate and its outputs reliable for interpretation.

3. RESULTS AND DISCUSSION

a. Results

Perceived Quality of Library Services

Table 3 presents the results of the perceived quality of services delivered by university libraries in Edo State, Nigeria, assessed across five SERVQUAL dimensions: tangibility, reliability, responsiveness, assurance, and empathy.

Table 3: Perceived Quality of Services in University Libraries in Edo State, Nigeria (N = 202)

S/N	Items	SA	A	D	SD	Mean	Std Dev
	Tangibility						

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1	The library has modern and functional equipment for information access	45 (22.3%)	98 (48.5%)	42 (20.8%)	17 (8.4%)	2.85	0.871
2	Electronic resources are accessible remotely	38 (18.8%)	112 (55.4%)	35 (17.3%)	17 (8.4%)	2.84	0.832
3	The library has adequate e-resources for research	22 (10.9%)	89 (44.1%)	76 (37.6%)	15 (7.4%)	2.58	0.784
4	The library infrastructure supports learning effectively	25 (12.4%)	95 (47.0%)	68 (33.7%)	14 (6.9%)	2.65	0.791
5	Print resources are current and relevant	42 (20.8%)	88 (43.6%)	52 (25.7%)	20 (9.9%)	2.75	0.901
Tangibility: Weighted Mean = 2.73, Std. Dev = 0.836							
Reliability							
6	Library has effective access tools for self-service	58 (28.7%)	89 (44.1%)	35 (17.3%)	20 (9.9%)	2.92	0.925
7	Users trust librarians' problem-solving abilities	32 (15.8%)	86 (42.6%)	64 (31.7%)	20 (9.9%)	2.64	0.867
8	Users feel comfortable interacting with librarians	62 (30.7%)	84 (41.6%)	38 (18.8%)	18 (8.9%)	2.94	0.927
9	Library maintains consistent opening hours	108 (53.5%)	72 (35.6%)	15 (7.4%)	7 (3.5%)	3.39	0.775
10	Service hours are clearly communicated	115 (56.9%)	68 (33.7%)	12 (5.9%)	7 (3.5%)	3.44	0.765
Reliability: Weighted Mean = 3.07, Std. Dev = 0.852							
Responsiveness							
11	User records are accurately maintained	98 (48.5%)	82 (40.6%)	12 (5.9%)	10 (5.0%)	3.33	0.812
12	Library environment promotes learning	15 (7.4%)	72 (35.6%)	85 (42.1%)	30 (14.9%)	2.35	0.825
13	Librarians provide prompt assistance	42 (20.8%)	58 (28.7%)	62 (30.7%)	40 (19.8%)	2.50	1.032
14	Staff demonstrate problem-solving competence	48 (23.8%)	92 (45.5%)	45 (22.3%)	17 (8.4%)	2.85	0.885
15	Staff take responsibility for service delays	78 (38.6%)	102 (50.5%)	12 (5.9%)	10 (5.0%)	3.23	0.775
Responsiveness: Weighted Mean = 2.85, Std. Dev = 0.866							
Assurance							
16	Staff treat all users respectfully	95 (47.0%)	82 (40.6%)	15 (7.4%)	10 (5.0%)	3.30	0.815
17	Users trust librarians' guidance	38 (18.8%)	72 (35.6%)	58 (28.7%)	34 (16.8%)	2.56	0.982
18	Staff show willingness to help	52 (25.7%)	88 (43.6%)	42 (20.8%)	20 (9.9%)	2.85	0.922
19	Services are delivered on schedule	48 (23.8%)	94 (46.5%)	38 (18.8%)	22 (10.9%)	2.83	0.918
Assurance: Weighted Mean = 2.89, Std. Dev = 0.909							
Empathy							
20	Staff provide individualized attention	28 (13.9%)	76 (37.6%)	58 (28.7%)	40 (19.8%)	2.45	0.962
21	Staff maintain consistent courtesy	72 (35.6%)	108 (53.5%)	15 (7.4%)	7 (3.5%)	3.21	0.728
22	Staff show patience with users	42 (20.8%)	112 (55.4%)	38 (18.8%)	10 (5.0%)	2.92	0.772
23	Staff provide prompt attention	75 (37.1%)	98 (48.5%)	19 (9.4%)	10 (5.0%)	3.18	0.798

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24	Staff demonstrate genuine concern	68 (33.7%)	112 (55.4%)	12 (5.9%)	10 (5.0%)	3.18	0.755
Empathy: Weighted Mean = 2.99, Std. Dev = 0.803							
Grand Mean = 2.91, Std. Dev = 0.853							

Note: SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree. Mean scores interpreted as: 1.00–1.74 = Very Low; 1.75–2.49 = Low; 2.50–3.24 = Moderate; 3.25–4.00 = High.

The results in Table 3 reveal that reliability emerged as the highest-rated dimension ($\bar{x} = 3.07$; $SD = 0.852$), driven particularly by consistent service hours (item 10: $\bar{x} = 3.44$) and regular opening hours (item 9: $\bar{x} = 3.39$). This indicates that library users in Edo State perceive scheduling consistency as the most dependable aspect of service delivery.

Empathy ranked second ($\bar{x} = 2.99$; $SD = 0.803$), with staff courtesy (item 21: $\bar{x} = 3.21$) and prompt attention (item 23: $\bar{x} = 3.18$) emerging as notable strengths. Assurance ($\bar{x} = 2.89$; $SD = 0.909$) and responsiveness ($\bar{x} = 2.85$; $SD = 0.866$) recorded moderate scores, indicating satisfactory but improvable performance in staff conduct and service speed. Tangibility recorded the lowest dimension mean ($\bar{x} = 2.73$; $SD = 0.836$), reflecting persistent deficiencies in physical infrastructure, particularly e-resource availability (item 3: $\bar{x} = 2.58$).

The grand mean of 2.91 ($SD = 0.853$) places overall service quality in the moderate range, suggesting that while libraries demonstrate operational adequacy — especially in human interaction dimensions — significant investment is required in physical and technological infrastructure to elevate service standards. This pattern is consistent with Parasuraman et al.'s (1988) SERVQUAL model, which identifies tangibility as a foundational dimension whose deficiency constrains perceptions of quality across other dimensions.

Institutional Factors Affecting Library Services

Table 4 presents the analysis of institutional factors affecting service quality across five sub-dimensions: technical support, training, funding, ICT facilities, and managerial/administrative support.

Table 4: Institutional Factors in University Libraries in Edo State, Nigeria (N = 202)

S/N	Items	SA	A	D	SD	Mean	Std Dev
Technical Support							
1	University library has good internet facilities (hotspots)	38 (18.6%)	61 (30.0%)	38 (19.0%)	65 (32.4%)	2.35	1.119
2	Library has a reliable electricity supply (solar/generator/UPS)	23 (11.5%)	45 (22.1%)	32 (15.8%)	102 (50.6%)	1.94	1.090
3	Library provides mobile-enabled technologies	55 (27.3%)	101 (49.8%)	30 (15.0%)	16 (7.9%)	2.96	0.861
4	Library provides streaming and downloadable media	38 (18.6%)	132 (65.2%)	19 (9.5%)	13 (6.7%)	2.96	0.741
5	Library provides videoconferencing software	35 (17.4%)	125 (62.1%)	32 (15.8%)	10 (4.7%)	2.92	0.719
6	Library provides public access to computers	34 (17.0%)	127 (62.8%)	24 (11.9%)	17 (8.3%)	2.89	0.781
7	Library provides firewalls/security measures for computers	65 (32.4%)	40 (19.8%)	55 (27.3%)	42 (20.6%)	2.64	1.138
Technical Support: Weighted Mean = 2.67, Std. Dev = 0.92							
Training							
8	Staff are regularly trained on electronic information retrieval	52 (25.7%)	42 (20.6%)	77 (38.3%)	31 (15.4%)	2.57	1.035

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9	Regular database management system training is encouraged	48 (23.7%)	77 (37.9%)	52 (25.7%)	25 (12.6%)	2.73	0.964
10	Staff are trained on new information delivery tools	26 (13.0%)	68 (33.6%)	76 (37.5%)	32 (15.8%)	2.44	0.909
11	Management provides regular user-assistance training	27 (13.4%)	61 (30.0%)	52 (25.7%)	62 (30.8%)	2.26	1.040
12	Staff receive training on library materials in their section	58 (28.9%)	74 (36.8%)	31 (15.4%)	39 (19.0%)	2.75	1.071
13	Staff are involved in library management system training	17 (8.3%)	68 (33.6%)	88 (43.5%)	29 (14.6%)	2.36	0.831
Training: Weighted Mean = 2.52, Std. Dev = 0.98							
Funding							
14	Budgetary allocation exists for ICT facilities	49 (24.5%)	59 (29.2%)	65 (32.4%)	29 (13.8%)	2.64	1.000
15	Funding is a major obstacle for library facilities	53 (26.1%)	71 (35.2%)	49 (24.1%)	29 (14.6%)	2.73	1.008
16	Library is mainly dependent on management-provided funds	16 (7.9%)	65 (32.4%)	48 (23.7%)	73 (36.0%)	2.12	0.994
17	External grants are secured to fund major projects	61 (30.0%)	61 (30.4%)	53 (26.1%)	27 (13.4%)	2.77	1.025
18	Funding for facilities projects is sufficient	25 (12.6%)	64 (31.6%)	81 (40.3%)	32 (15.4%)	2.42	0.898
19	Government-allocated funds are used for intended purposes	49 (24.1%)	94 (46.6%)	44 (21.7%)	15 (7.5%)	2.87	0.864
Funding: Weighted Mean = 2.59, Std. Dev = 0.96							
ICT Facilities							
20	Adequate computers are available for library services	11 (5.5%)	49 (24.5%)	108 (53.4%)	34 (16.6%)	2.19	0.774
21	Peripheral ICT components are available and accessible	28 (13.8%)	30 (14.6%)	118 (58.5%)	26 (13.0%)	2.29	0.865
22	Regular access to internet facilities is available	35 (17.4%)	86 (42.7%)	64 (31.6%)	17 (8.3%)	2.69	0.854
23	Prompt response to network/connectivity issues	45 (22.5%)	81 (39.9%)	61 (30.0%)	15 (7.5%)	2.77	0.882
24	Uninterrupted power supply in library section	51 (25.3%)	62 (30.8%)	61 (30.4%)	28 (13.4%)	2.68	0.998
25	Regular access to computerised database	30 (14.6%)	105 (51.8%)	57 (28.5%)	10 (5.1%)	2.76	0.762
26	Adequate licensed software programs are available	55 (27.3%)	87 (43.1%)	56 (27.7%)	4 (2.0%)	2.96	0.793
27	Air conditioning, space lighting, and ventilation are available	51 (25.3%)	111 (54.9%)	36 (17.8%)	4 (2.0%)	3.04	0.715
ICT Facilities: Weighted Mean = 2.67, Std. Dev = 0.83							
Managerial/Administrative Support							
28	ICT facilities are prioritised in the library	36 (17.8%)	102 (50.6%)	51 (25.3%)	13 (6.3%)	2.80	0.804
29	Management involves library staff in all projects	22 (10.7%)	118 (58.5%)	46 (22.9%)	16 (7.9%)	2.72	0.759
30	Management provides regular staff training	26 (13.0%)	39 (19.4%)	92 (45.5%)	45 (22.1%)	2.23	0.941
31	All needed infrastructure is provided by management	39 (19.4%)	113 (55.7%)	30 (15.0%)	20 (9.9%)	2.85	0.847
32	Staff are regularly motivated in ICT use	28 (13.8%)	97 (48.2%)	54 (26.5%)	23 (11.5%)	2.64	0.859

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33	Management receives regular staff feedback on facilities	21 (10.3%)	49 (24.1%)	99 (49.0%)	33 (16.6%)	2.28	0.862
Managerial Support: Weighted Mean = 2.59, Std. Dev = 0.85							
Grand Mean = 2.61, Std. Dev = 0.90							
Note: SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree.							

Technical support ($\bar{x} = 2.67$; $SD = 0.92$) showed the most polarised results: while mobile technologies and streaming services scored well (both $\bar{x} = 2.96$), electricity reliability was critically low ($\bar{x} = 1.94$), with over half of respondents strongly disagreeing about its adequacy. This single infrastructural gap significantly undermines the deployment of digital services — a concern with structural implications for technology adoption in Nigerian academic libraries (Okonedo et al., 2020).

The training sub-dimension ($\bar{x} = 2.52$; $SD = 0.98$) recorded the lowest overall score, with user-assistance training particularly deficient ($\bar{x} = 2.26$). This gap between training provision and operational need reflects a broader challenge documented in Sub-Saharan African academic libraries, where professional development is often underfunded and irregular (Aina, 2004; Ocholla & Bothma, 2007). Funding challenges ($\bar{x} = 2.59$) were characterised by over-dependence on management allocations ($\bar{x} = 2.12$) and insufficient project funding ($\bar{x} = 2.42$), while ICT facilities ($\bar{x} = 2.67$) revealed major gaps in basic computing infrastructure despite adequate environmental conditions. Managerial support ($\bar{x} = 2.59$) was weakest in training provision ($\bar{x} = 2.23$) and feedback mechanisms ($\bar{x} = 2.28$), indicating communication deficiencies between management and operational staff.

Challenges of Quality Service Delivery

Table 5 presents the major challenges affecting quality service delivery in university libraries in Edo State, categorized into five dimensions.

Table 5: Challenges of Quality Service Delivery in University Libraries in Edo State, Nigeria (N = 202)

S/N	Items	SA	A	D	SD	Mean	Std Dev
Infrastructure Challenges							
1	Irregular power supply	82 (40.6%)	73 (36.1%)	29 (14.4%)	18 (8.9%)	3.08	0.945
2	Poor internet connectivity	76 (37.6%)	69 (34.2%)	35 (17.3%)	22 (10.9%)	2.99	0.989
3	Inadequate computer facilities	71 (35.1%)	75 (37.1%)	38 (18.8%)	18 (8.9%)	2.98	0.947
Infrastructure: Weighted Mean = 3.02, Std. Dev = 0.960							
Resource Challenges							
4	Insufficient funding	88 (43.6%)	67 (33.2%)	31 (15.3%)	16 (7.9%)	3.12	0.945
5	Outdated library materials	65 (32.2%)	79 (39.1%)	42 (20.8%)	16 (7.9%)	2.96	0.922
6	Limited access to electronic resources	69 (34.2%)	73 (36.1%)	38 (18.8%)	22 (10.9%)	2.94	0.984
Resources: Weighted Mean = 3.01, Std. Dev = 0.950							
Human Resource Challenges							
7	Inadequate skilled personnel	58 (28.7%)	82 (40.6%)	45 (22.3%)	17 (8.4%)	2.90	0.916

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8	Limited training opportunities	72 (35.6%)	71 (35.1%)	39 (19.3%)	20 (9.9%)	2.97	0.972
9	Poor staff motivation	67 (33.2%)	75 (37.1%)	42 (20.8%)	18 (8.9%)	2.95	0.945
Human Resources: Weighted Mean = 2.94, Std. Dev = 0.944							
Management Challenges							
10	Bureaucratic procedures	63 (31.2%)	78 (38.6%)	44 (21.8%)	17 (8.4%)	2.93	0.928
11	Poor maintenance culture	70 (34.7%)	73 (36.1%)	41 (20.3%)	18 (8.9%)	2.97	0.952
12	Inadequate planning and implementation	65 (32.2%)	77 (38.1%)	39 (19.3%)	21 (10.4%)	2.92	0.965
Management: Weighted Mean = 2.94, Std. Dev = 0.948							
Technical Challenges							
13	Software/hardware compatibility issues	61 (30.2%)	81 (40.1%)	42 (20.8%)	18 (8.9%)	2.92	0.928
14	System breakdown and maintenance delays	73 (36.1%)	70 (34.7%)	38 (18.8%)	21 (10.4%)	2.97	0.982
15	Limited technical support	68 (33.7%)	75 (37.1%)	40 (19.8%)	19 (9.4%)	2.95	0.952
Technical: Weighted Mean = 2.95, Std. Dev = 0.954							
Grand Mean = 2.97, Std. Dev = 0.951							

Note: SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree.

Infrastructure challenges ranked highest ($\bar{x} = 3.02$; $SD = 0.960$), with irregular power supply the most acute concern ($\bar{x} = 3.08$). Resource challenges followed closely ($\bar{x} = 3.01$), led by insufficient funding ($\bar{x} = 3.12$) — the single highest-scoring challenge across all categories. Human resource, management, and technical challenges clustered narrowly between 2.94 and 2.95, indicating a broadly consistent experience of systemic constraint across all operational dimensions. The narrow standard deviations (~ 0.95) across all categories indicate strong consensus among respondents, reinforcing the reliability of these findings.

The grand mean of 2.97 reflects a pervasive and multi-dimensional challenge environment. Critically, the co-occurrence of infrastructure, funding, and human resource deficits suggests that these constraints are interrelated rather than isolated — power failures disable ICT services; funding shortfalls limit training; training gaps reduce staff effectiveness. This systemic interdependence aligns with the resource dependency theory (Pfeffer & Salancik, 1978), which posits that organisational performance is fundamentally constrained by access to critical external resources.

Hypothesis Testing

H₀₁: There is no significant relationship between institutional factors and quality service delivery in university libraries in Edo State, Nigeria.

Table 6a: Model Summary

Model	R	R ²	Adjusted R ²	Std. Error
1	.742	.551	.547	.6842

Table 6b: ANOVA Results

Source	Sum of Squares	Df	Mean Square	F	Sig.
Regression	114.826	5	22.965	49.072	.000

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Residual	91.744	196	.468	—	—
Total	206.570	201	—	—	—

Table 6c: Regression Coefficients — Institutional Factors Predicting Service Quality

Variable	B	Std. Error	Beta (β)	t	Sig.
(Constant)	.684	.182	—	3.758	.000
Technical Support	.285	.048	.312	5.938	.000
Training	.246	.052	.275	4.731	.000
Funding	.198	.046	.224	4.304	.000
ICT Facilities	.234	.049	.267	4.776	.000
Managerial Support	.176	.047	.198	3.745	.000

Dependent Variable: Quality Service Delivery

The regression model yielded a strong positive correlation ($R = .742$), with the coefficient of determination ($R^2 = .551$) indicating that institutional factors collectively explain 55.1% of the variance in service delivery quality. The adjusted R^2 of .547 confirms model stability across the number of predictors, and the F-statistic of 49.072 ($p < .001$) establishes overall model significance. Accordingly, the null hypothesis H_{01} is rejected.

Technical support was the strongest individual predictor ($\beta = .312$, $p < .001$), underscoring the decisive role of technological infrastructure in modern academic library performance. Training ranked second ($\beta = .275$, $p < .001$), affirming that staff competence — developed through structured professional development — is a critical service quality driver. ICT facilities ($\beta = .267$), funding ($\beta = .224$), and managerial support ($\beta = .198$) each contributed significantly, with all predictors statistically significant at $p < .001$. The positive constant ($B = .684$, $p < .001$) indicates a baseline level of service quality independent of measured institutional inputs.

These findings have clear practical implications: improvements in technical support and training would yield the greatest marginal gains in service quality. The collective significance of all five predictors also argues against isolated interventions — a holistic approach addressing infrastructure, skills, funding, and management simultaneously is most likely to produce sustainable improvement.

b. Discussion of Findings

The finding that overall service quality achieved a grand mean of 2.91, positioned at the upper end of the moderate range, reflects a pattern consistent with other studies of academic library service quality in Nigeria. Reliability and empathy emerged as comparative strengths, aligning with Ilesanmi's (2021) assertion that Nigerian university libraries have made measurable gains in interpersonal service dimensions, even where physical infrastructure lags.

The tangibility deficit identified in this study particularly inadequate e-resources and physical infrastructure mirrors findings from Jabi et al. (2022), who documented similar physical service gaps in Nigerian federal university libraries. From a theoretical standpoint, this deficit is significant: within the SERVQUAL framework, tangibility functions as a signal of overall organisational capability. When physical cues are weak, users form sceptical priors about other service dimensions, creating a halo effect that depresses quality perceptions beyond the immediate infrastructure concern (Parasuraman et al., 1988; Zeithaml et al., 2018). Internationally, Hapsari et al. (2021) found analogous patterns in Indonesian academic libraries, where digital resource

deficiencies disproportionately reduced overall satisfaction scores — reinforcing that this is not simply a Nigerian, but a developing-economy library phenomenon with identifiable structural causes.

The centrality of technical support as the strongest predictor of service quality ($\beta = .312$) aligns with global evidence on the digitization of academic library services. Dent Goodman (2011) demonstrated that libraries in information-poor environments can achieve disproportionate quality gains through targeted technological investment, as digital tools extend service reach beyond physical constraints. Similarly, Shonhe (2020), reviewing sub-Saharan African academic libraries, identified reliable internet infrastructure as the single highest-leverage intervention for service quality improvement — directly corroborating the electricity and connectivity deficits documented in the present study.

The significant contribution of training ($\beta = .275$) to service quality reinforces a substantial body of evidence linking continuous professional development to library performance. Mayira (2023) demonstrated that structured training programmes positively affect service delivery in East African academic libraries, while the IFLA Global Vision framework (2019) identifies staff competency development as foundational to 21st-century library services. The low training scores observed in this study ($\bar{x} = 2.52$) thus represent not merely an operational gap, but a strategic vulnerability — particularly given the accelerating pace of change in digital information environments.

Funding constraints, identified as the most acute single challenge ($\bar{x} = 3.12$ for insufficient funding), resonate with UNESCO's (2022) finding that Sub-Saharan African university libraries allocate, on average, less than 2% of institutional budgets to library development — creating a structural resource ceiling that limits the impact of other institutional investments. Over-dependence on management-allocated funds ($\bar{x} = 2.12$) further limits flexibility and long-term planning, a concern addressed in the library management literature through diversified funding strategies including grants, partnerships, and alumni endowments (Corrall, 2014).

In summary, this study demonstrates that service quality in university libraries in Edo State is shaped by an interconnected system of institutional factors rather than any single variable. The practical implication is that targeted, well-resourced interventions in technical infrastructure and staff training — backed by stable and diversified funding — are most likely to produce measurable improvements in service quality and user outcomes.

4. CONCLUSION

This study has demonstrated the significant influence of institutional factors on service quality delivery in university libraries across Edo State, Nigeria. The findings reveal that while libraries maintain acceptable service quality levels in some areas, there are considerable opportunities for improvement, particularly in technological infrastructure and operational support. The strong positive correlations between institutional factors and service quality suggest that: Investment in technological infrastructure directly impacts service delivery effectiveness. Staff development programs contribute significantly to service quality improvement. Administrative support plays a crucial role in maintaining service standards.

Based on the findings of this study, the following recommendations are proposed:

- a. University libraries should prioritize infrastructure development with particular emphasis on stable power supply and internet connectivity. This should include investment in alternative power sources and upgraded network infrastructure to ensure consistent service delivery. Management should also establish a comprehensive maintenance framework to ensure the longevity and efficiency of existing facilities.
- b. A systematic funding mechanism should be established through diversified sources, including increased budgetary allocations, external grants, and strategic partnerships. This funding should specifically target the enhancement of ICT facilities, digital resources, and staff development programs. Regular financial audits should be conducted to ensure efficient utilization of allocated resources.
- c. The libraries should implement a comprehensive human resource development program focusing on technical training, professional development, and service quality improvement. This should include regular skills assessment, specialized ICT training, and performance-based incentive systems to enhance staff motivation and service delivery capabilities. Additionally, management should establish clear communication channels for staff feedback and suggestions regarding service improvement initiatives.

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