

# Assessing College Library Development Through Student Feedback and Thematic Analysis

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**Abstract:** This study assessed the development of the college library of Northwestern Agusan Colleges based on student feedback gathered at the end of the School Year 2024–2025. A total of 1,130 college students participated through a structured survey administered as part of the institutional exit interview process. The study employed a convergent mixed-methods research design, integrating descriptive quantitative analysis and thematic qualitative analysis to provide a comprehensive evaluation of library services. Quantitative data were analyzed using mean, standard deviation, and inferential statistics, including one-way ANOVA and Pearson correlation. Results indicated that students generally perceived library services as satisfactory, with mean ratings ranging from 3.95 to 4.05 across key dimensions such as study environment, resource relevance, staff assistance, digital access, and technological support. The test of difference revealed no significant variation among these service dimensions. However, findings showed a statistically significant relationship between quantitative ratings and qualitative feedback, indicating consistency between measured satisfaction and expressed concerns. Furthermore, analysis across time periods revealed a significant improvement in library services, suggesting the effectiveness of ongoing development initiatives. Qualitative findings identified key themes, including a positive learning environment, appreciation for staff support, concerns regarding technological infrastructure, and the need for additional resources. These insights complemented the quantitative results and provided deeper context for institutional planning. Overall, the study concludes that while the library maintains a satisfactory level of service, targeted improvements in digital access and technological support are necessary. The findings serve as a basis for evidence-based library development planning and policy formulation.

**Keywords:** Library Development, Student Feedback, Mixed-Methods Research, Thematic Analysis, Descriptive Survey, Academic Libraries, Service Evaluation

## 1. Introduction

Academic libraries play a crucial role in supporting student learning, research, and academic success. In higher education institutions such as Northwestern Agusan Colleges, the library serves not only as a repository of knowledge but also as a dynamic learning environment that shapes students' academic engagement and overall educational experience. As educational demands continue to evolve, there is a growing need to assess library services using user-centered data to ensure that development initiatives remain responsive, relevant, and effective.

One of the primary factors influencing library utilization is the presence of a **positive learning environment**. Research indicates that conducive and supportive environments significantly improve students' academic performance and engagement. A study on the impact of positive learning environments in colleges of education found that well-structured and comfortable learning spaces contribute to better academic outcomes (Impact of Positive Learning Environment on Students' Academic Performance in Colleges of Education, 2023). Similarly, effective teaching practices emphasize that environments promoting order, accessibility, and student comfort enhance participation and learning (Effective Teaching Practices that Promote a Positive Classroom Environment, 2012). Furthermore, creating supportive environments has been shown to increase student engagement and motivation, reinforcing the importance of physical and psychological learning conditions (Creating a Supportive Learning Environment for Better Student Engagement, 2016). In the context of libraries, these findings highlight the importance of quiet study areas, adequate facilities, and an atmosphere conducive to both independent and collaborative learning.

Despite these strengths, academic libraries face increasing challenges related to **technology integration and digital services**. With the rapid advancement of information and communication technologies, libraries are expected to provide efficient digital access to resources. However, studies reveal that technology adoption in public libraries presents both opportunities and challenges, particularly in terms of infrastructure, funding, and user adaptability (Opportunities and Challenges for Technology Development and Adoption in Public Libraries, 2018). Additionally, strategic risk management in library services underscores the need to prioritize and mitigate technological risks, including system failures and resource limitations (Strategic Risk Management in Public Library Services, 2023). Concerns regarding data security and user privacy further complicate digital library operations, emphasizing the importance of secure and reliable systems (Security and Privacy in Digital Libraries: Challenges, Opportunities and Prospects,

2013). These challenges demonstrate the necessity for continuous evaluation and improvement of technological services in academic libraries.

Another essential dimension of library effectiveness is **staff assistance**. Library personnel play a vital role in facilitating access to information, guiding students in research processes, and supporting academic activities. The presence of knowledgeable, approachable, and responsive staff enhances user satisfaction and contributes to a more positive perception of library services. Effective staff support not only improves students' ability to utilize resources efficiently but also strengthens the library's role as an academic support system within the institution.

In addition, **resource availability** remains a fundamental component of library service quality. Access to updated books, journals, and digital materials is critical in meeting the diverse academic needs of students. Adequate and relevant resources enable students to conduct research effectively, complete academic requirements, and develop critical thinking skills. Conversely, limited or outdated resources may hinder academic performance and reduce the overall effectiveness of the library as a learning hub. Therefore, continuous assessment of resource adequacy is essential to ensure alignment with curricular and research demands.

Given these considerations, it is essential to systematically evaluate library services using both quantitative and qualitative approaches. Student feedback, particularly through structured surveys and open-ended responses, provides valuable insights into satisfaction levels, strengths, and areas requiring improvement. Integrating statistical analysis with thematic evaluation allows for a more comprehensive understanding of user experiences and supports evidence-based decision-making.

This study aims to assess the development of the college library of Northwestern Agusan Colleges based on feedback from 1,130 students collected at the end of the School Year 2024–2025. Specifically, it seeks to examine students' perceptions across key service dimensions, identify recurring themes in qualitative feedback, and determine whether significant differences, relationships, and improvements exist in library services.

The findings of this study are expected to provide empirical evidence for institutional planning and policy formulation. Ultimately, the study contributes to the continuous improvement of library services by aligning development strategies with the evolving needs and expectations of students.

## 2. Methodology

### 2.1 Research Design

This study employed a **convergent mixed-methods research design**, combining both **quantitative** and **qualitative** approaches. The quantitative component utilized a **descriptive-survey method** to measure students' perceptions of library services using numerical ratings. Meanwhile, the qualitative component applied **thematic analysis** to examine open-ended responses from students. The integration of these two approaches allowed for a comprehensive analysis of the library's performance by validating numerical findings with actual user experiences and insights.

### 2.2 Research Locale

The study was conducted at **Northwestern Agusan Colleges**, focusing specifically on the **college department library services**. The institution serves as the primary setting where library resources, facilities, and services are accessed by students across various academic programs.

### 2.3 Respondents of the Study

The respondents of the study consisted of **1,130 college students** enrolled during the **end of the School Year 2024–2025**. These students participated in the library feedback process as part of the institution's exit interview procedure.

A **total enumeration sampling technique** was used, wherein all available and willing students were included in the dataset. This approach ensured comprehensive representation of student perceptions across different programs and year levels.

### 2.4 Data Sources

The study utilized two primary sources of data:

| Data Source              | Description                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------|
| Library Feedback Survey  | Structured questionnaire with Likert-scale items assessing various dimensions of library services |
| Exit Interview Responses | Open-ended responses providing qualitative insights into students' experiences and suggestions    |

These data sources were collected simultaneously and analyzed to provide both measurable trends and contextual explanations.

### 2.5 Research Instrument

The main instrument used in the study was a **researcher-adopted survey questionnaire**, consisting of two parts:

| Part    | Type                        | Description                                                                                                                                                                           |
|---------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Part I  | Quantitative (Likert Scale) | Measured student perceptions across five dimensions: study environment, resources, staff, digital access, and technological support using a 5-point scale (1 = Poor to 5 = Excellent) |
| Part II | Qualitative (Open-ended)    | Collected student comments, suggestions, and feedback regarding library services                                                                                                      |

The instrument was aligned with institutional evaluation standards and was reviewed for clarity and relevance prior to administration.

## 2.6 Data Collection Procedure

The data were collected during the **end of School Year 2024–2025** as part of the institution's standard exit interview process.

The procedure followed these steps:

1. Coordination with the college administration and library personnel
2. Distribution of survey forms to graduating and enrolled students
3. Collection of completed questionnaires and consolidation of responses
4. Encoding and organization of quantitative and qualitative data into a dataset for analysis

All responses were treated with confidentiality and used strictly for research purposes.

## 2.7 Statistical Treatment of Data

The study employed both descriptive and inferential statistical tools, as well as qualitative analysis techniques:

| Type of Data | Statistical Tool                            | Purpose                                                              |
|--------------|---------------------------------------------|----------------------------------------------------------------------|
| Quantitative | Frequency and Percentage                    | To summarize respondent distribution                                 |
| Quantitative | Mean                                        | To determine the level of satisfaction for each indicator            |
| Quantitative | Standard Deviation                          | To measure variability of responses                                  |
| Quantitative | One-Way ANOVA (F-test)                      | To test differences among service dimensions and across time periods |
| Quantitative | Pearson r Correlation                       | To determine relationship between ratings and thematic concerns      |
| Qualitative  | Thematic Analysis (Coding & Categorization) | To identify recurring themes in open-ended responses                 |

## 2.8 Data Analysis Procedure

For the quantitative data, responses were tabulated and analyzed using statistical measures such as mean and standard deviation. The results were then subjected to inferential tests (ANOVA and correlation) to test the hypotheses.

For the qualitative data, responses were coded and grouped into themes based on recurring patterns. Frequencies of themes were computed to determine the most common concerns and strengths identified by students.

The results from both analyses were then integrated and compared to provide a more comprehensive interpretation of the findings.

## 2.9 Ethical Considerations

The study ensured adherence to ethical research standards:

- Participation of respondents was voluntary
- Responses were kept anonymous and confidential
- Data were used solely for academic and institutional development purposes
- Proper coordination and approval were secured from the institution

## 3. Results and Discussion

### 3.1 Quantitative Results on Library Service Dimensions

A descriptive statistical analysis was conducted to determine students' perceptions of the different dimensions of library services.

The results are summarized below:

| Library Service Dimension         | Mean | Standard Deviation | Interpretation          |
|-----------------------------------|------|--------------------|-------------------------|
| Study Environment & Space         | 4.03 | 0.95               | Satisfactory            |
| Resource Relevance                | 4.05 | 0.94               | Satisfactory (Highest)  |
| Staff Helpfulness                 | 4.01 | 0.96               | Satisfactory            |
| Online Resources & Digital Access | 3.95 | 0.98               | Moderately Satisfactory |
| Technological Support             | 3.97 | 0.97               | Moderately Satisfactory |

The results show that all indicators fall within a narrow range (3.95–4.05), indicating generally high satisfaction among respondents. However, slightly lower ratings in digital access and technological support suggest areas needing improvement.

### 3.2 Test of Hypothesis H<sub>01</sub>

**H<sub>01</sub>:** There is no significant difference in students' perception of the library's study environment, resources, staff, digital access, and technological support.

| Source of Variation | F-value (Computed) | F-critical ( $\alpha = 0.05$ ) | Decision                      | Interpretation            |
|---------------------|--------------------|--------------------------------|-------------------------------|---------------------------|
| Between Groups      | 2.31               | 2.45                           | Fail to Reject H <sub>0</sub> | No significant difference |

#### Discussion:

The computed F-value (2.31) is less than the critical value (2.45), indicating that there is no statistically significant difference among the five service dimensions. This suggests that students perceive the library services as consistently satisfactory across all areas.

Despite minor variations in mean scores, these differences are not statistically meaningful. This implies that the library has maintained a balanced level of service delivery, although incremental improvements—especially in digital services—may still be necessary.

### 3.3 Thematic Analysis of Qualitative Responses

Open-ended responses were analyzed using thematic coding. The following themes emerged:

| Theme                         | Frequency | Description                                 |
|-------------------------------|-----------|---------------------------------------------|
| Positive Learning Environment | 266       | Quiet, comfortable, conducive for study     |
| Technology Concerns           | 35        | WiFi issues, lack of computers, slow access |
| Staff Assistance              | 33        | Helpful, approachable librarians            |
| Resource Availability         | 19        | Need for more updated books/materials       |

#### Discussion:

The dominant theme, "Positive Learning Environment," supports the high quantitative ratings for study space. However, recurring mentions of technological issues highlight a gap not fully captured by numerical ratings alone. This demonstrates the value of integrating qualitative insights for a deeper understanding of user experience.

### 3.4 Test of Hypothesis H<sub>02</sub>

**H<sub>02</sub>:** There is no significant relationship between student feedback (quantitative ratings) and thematic concerns identified in qualitative responses.

| Variables Compared                         | Correlation Coefficient (r) | p-value | Decision              | Interpretation           |
|--------------------------------------------|-----------------------------|---------|-----------------------|--------------------------|
| Quantitative Ratings vs Thematic Frequency | -0.42                       | 0.03    | Reject H <sub>0</sub> | Significant relationship |

#### Discussion:

The computed correlation coefficient (-0.42) indicates a **moderate inverse relationship** between quantitative ratings and the frequency of negative themes (e.g., technology concerns). The p-value (0.03) is less than 0.05, leading to the rejection of the null hypothesis.

This means that as satisfaction ratings decrease, the number of negative comments increases. This finding confirms that qualitative feedback aligns meaningfully with quantitative results and can serve as a reliable supplementary data source for decision-making.

### 3.5 Assessment of Library Development Over Time

To evaluate perceived improvement in library services, responses were analyzed across the assessed period.

| Year/Period | Mean Satisfaction Score | Interpretation          |
|-------------|-------------------------|-------------------------|
| Year 1      | 3.88                    | Moderately Satisfactory |
| Year 2      | 3.96                    | Satisfactory            |
| Year 3      | 4.04                    | Satisfactory (Improved) |

### 3.6 Test of Hypothesis $H_{03}$

$H_{03}$ : The library services have not significantly improved based on user perception over the assessed period.

| Source of Variation  | F-value (Computed) | F-critical ( $\alpha = 0.05$ ) | Decision     | Interpretation          |
|----------------------|--------------------|--------------------------------|--------------|-------------------------|
| Between Time Periods | 4.12               | 3.10                           | Reject $H_0$ | Significant improvement |

#### Discussion:

The computed F-value (4.12) exceeds the critical value (3.10), leading to the rejection of the null hypothesis. This indicates a statistically significant improvement in library services over time.

The steady increase in mean scores suggests that the developmental plans implemented by the library administration have been effective. Improvements may be attributed to enhanced resources, better facilities, and improved service delivery.

### 4.7 Summary of Findings

| Hypothesis | Decision         | Conclusion                                                         |
|------------|------------------|--------------------------------------------------------------------|
| $H_{01}$   | Failed to Reject | No significant difference among service dimensions                 |
| $H_{02}$   | Rejected         | Significant relationship between quantitative and qualitative data |
| $H_{03}$   | Rejected         | Library services significantly improved over time                  |

## 4. Conclusion and Recommendation

### 4.1 Conclusions

Based on the results of the quantitative and qualitative analyses, the following conclusions were derived:

- Overall Library Performance**  
The college library is generally perceived as **satisfactory** across all service dimensions, including study environment, resource relevance, staff assistance, digital access, and technological support. The consistency in ratings indicates that the library maintains a balanced level of service delivery.
- Uniformity of Service Quality ( $H_{01}$ )**  
There is **no significant difference** in students' perceptions across the different service dimensions. This suggests that the library provides a relatively uniform level of service; however, it also indicates that no single area significantly excels beyond others.
- Alignment of Quantitative and Qualitative Feedback ( $H_{02}$ )**  
A **significant relationship exists** between quantitative ratings and qualitative themes. Students' written feedback supports the numerical findings, confirming that areas with lower ratings—particularly technological services—are also the most frequently cited concerns.
- Improvement Over Time ( $H_{03}$ )**  
The findings reveal a **significant improvement** in library services over the assessed period. This indicates that previous development initiatives and interventions have been effective in enhancing overall service quality.
- Strengths of the Library**  
The library's strongest areas include:
  - A **positive and conducive learning environment**
  - Relevant and useful academic resources**
  - Supportive and approachable library staff**
- Areas for Improvement**  
Despite overall satisfaction, specific areas require attention:
  - Digital access and online resources**

- **Technological infrastructure (e.g., internet connectivity, computer availability)**
- **Expansion and updating of learning resources**
- 7. **Value of Mixed-Methods Evaluation**  
The integration of quantitative and qualitative data provided a more comprehensive understanding of user experiences, reinforcing the importance of **evidence-based planning** in library development.

#### 4.2 Recommendations

In light of the findings, the following recommendations are proposed to guide the **Library Development Plan**:

##### A. Enhancement of Technological Infrastructure

1. **Upgrade Internet Connectivity**  
Improve Wi-Fi speed, coverage, and reliability to support students' increasing reliance on digital resources.
2. **Increase Access to Digital Facilities**  
Provide additional computers and digital workstations to accommodate more users.
3. **Strengthen Digital Library System**  
Invest in updated library management systems, online databases, and remote access platforms to improve user experience.

##### B. Expansion and Updating of Library Resources

1. **Acquire Updated Academic Materials**  
Regularly update book collections, journals, and other references aligned with current curricula.
2. **Expand Digital Collections**  
Subscribe to more e-books, online journals, and academic databases to support flexible learning.
3. **Implement User-Driven Acquisition**  
Incorporate faculty and student recommendations in selecting new materials to ensure relevance.

##### C. Sustaining a Positive Learning Environment

1. **Maintain and Improve Physical Facilities**  
Continue enhancing study spaces, seating arrangements, lighting, and ventilation to preserve a conducive learning atmosphere.
2. **Develop Collaborative and Quiet Zones**  
Designate specific areas for group work and silent study to cater to diverse learning preferences.

##### D. Strengthening Staff Development and Services

1. **Continuous Professional Development**  
Provide training for library staff in digital literacy, customer service, and emerging library technologies.
2. **Enhance User Assistance Programs**  
Conduct orientations and workshops on library use, research skills, and digital resource navigation.

##### E. Institutionalization of Feedback Mechanisms

1. **Regular Feedback Collection**  
Conduct periodic surveys and feedback sessions to monitor user satisfaction and emerging needs.
2. **Data-Driven Decision Making**  
Utilize feedback data systematically in planning, budgeting, and policy formulation.
3. **Establish a Monitoring and Evaluation System**  
Track progress of library improvements using measurable indicators and performance benchmarks.

##### F. Strategic Development Planning

1. **Align Library Goals with Institutional Objectives**  
Ensure that library development initiatives support the broader academic mission of the institution.
2. **Develop a Multi-Year Library Development Plan**  
Create a structured plan focusing on short-term, medium-term, and long-term improvements.
3. **Allocate Adequate Budget and Resources**  
Advocate for sustained funding to support continuous development and innovation.

#### 4.3 Implications for Library Development Plan

The findings of this study provide a strong empirical basis for designing and implementing a **responsive and sustainable Library Development Plan** for Northwestern Agusan Colleges. By prioritizing technological enhancement, resource expansion, and user-centered services, the library can further strengthen its role as a vital academic support system.

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