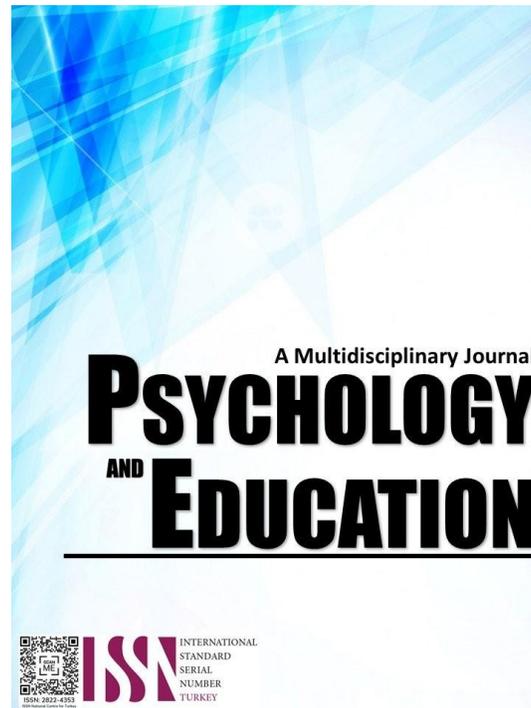


**LIBRARY USAGE, RESOURCE UTILIZATION, INFORMATION
LITERACY, AND LIBRARIAN INTERACTIONS:
A STRUCTURAL MODEL OF STUDENTS'
ACADEMIC SUCCESS**



PSYCHOLOGY AND EDUCATION: A MULTIDISCIPLINARY JOURNAL

Volume: 48

Issue 7

Pages: 1169-1180

Document ID: 2025PEMJ4706

DOI: 10.70838/pemj.480710

Manuscript Accepted: 10-13-2025

Library Usage, Resource Utilization, Information Literacy, and Librarian Interactions: A Structural Model of Students' Academic Success

Sittie Saadia M. Muti,* Cristine A. Geroy, Nenita I. Prado

For affiliations and correspondence, see the last page.

Abstract

This study investigated the structural relationships among library usage, resource utilization, information literacy, and librarian interactions, and their relationships to students' academic success in higher education. Employing a quantitative research design, data were gathered from undergraduate students using standardized instruments, with analyses conducted through descriptive statistics, correlation, regression, and structural equation modeling (SEM). Results indicated that students demonstrated moderately high engagement across all four variables, with resource utilization rated the highest and librarian interactions the lowest. Correlation analysis revealed significant positive relationships between the four constructs and academic success, with information literacy showing the strongest association. Regression analyses highlighted the perceived helpfulness of librarians and students' source evaluation skills as the most influential predictors of academic success, alongside satisfaction with library facilities. SEM results confirmed that Structural Model 5 achieved excellent fit indices, validating the integrated role of library usage, resource utilization, information literacy, and librarian interactions in fostering student performance. The findings underscore the importance of academic libraries not only as providers of resources but also as facilitators of critical competencies and meaningful academic support. The study recommends embedding library engagement and information literacy into higher education curricula and policies, strengthening librarian visibility, and developing innovative student-centered programs.

Keywords: *library usage, resource utilization, information literacy, librarian interactions, academic success, structural equation modeling*

Introduction

Academic libraries are vital knowledge hubs that provide resources, services, and learning support for students. They serve not only as repositories of information but also as dynamic centers where information literacy is cultivated, resources are accessed, and collaborative interactions occur. The relationship between library engagement and student success has been emphasized in recent research, particularly in higher education contexts where academic performance is closely tied to resource accessibility and information competencies (Kumar & Ahmad, 2020; Soria et al., 2020).

Despite technological advancements and digital resource proliferation, many students continue to rely on libraries for academic work. However, engagement patterns vary significantly, with some students fully integrating library services into their learning routines and others using them sporadically (Jiao & Onwuegbuzie, 2019). This uneven engagement raises important questions about how library use, resource utilization, information literacy, and librarian interactions collectively shape academic outcomes.

This study provides empirical evidence on the multifaceted role of academic libraries. It offers actionable insights for policymakers, administrators, librarians, and faculty to optimize library engagement strategies that support student performance.

Research Objectives

The present study addressed this gap by developing and testing a structural model—MUTI ARISE (Academic Resource Integration for Student Excellence)—that integrates four critical constructs: library usage, resource utilization, information literacy, and librarian interactions. Specifically, this research aimed to:

1. Assess the levels of students' library usage, resource utilization, information literacy, and librarian interactions.
2. Determine the relationships among these constructs and academic success.
3. Identify the most influential predictors of academic success.
4. Develop and validate a structural model that explains how these factors interact to enhance student achievement.

Methodology

Research Design

A quantitative, correlational, and causal-comparative design was employed. Structural equation modeling (SEM) was applied to validate the hypothesized relationships among the four constructs and academic success.

Respondents

Prior to analysis, all survey responses were screened for completeness. Questionnaires with missing or incomplete data were excluded



from the final dataset to ensure data integrity and validity of statistical results. Out of 1,309 distributed questionnaires, 947 were retained as valid responses after this data cleaning process. This approach was appropriate given the large sample size and the study’s focus on obtaining reliable measurements for SEM analysis.

The study population consisted of fourth-year undergraduate students enrolled at Mindanao State University—Main Campus during Academic Year 2024-2025. A purposive sampling technique was used to target graduating students, as they represent the culmination of undergraduate learning experiences. A total of 947 valid responses were collected from 1,309 invited participants across 14 colleges, ensuring broad institutional representation.

Instrument

Data were gathered through a researcher-developed questionnaire consisting of five parts aligned with the study variables: library usage (frequency, duration, purpose), resource utilization (print/digital resources, study spaces, satisfaction), information literacy (search skills, source evaluation), librarian interactions (frequency, type of assistance, helpfulness), and academic success (self-perceptions, performance indicators). Items were rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The instrument underwent expert validation by specialized faculty members and researchers, and pilot testing confirmed its reliability, with Cronbach’s Alpha values ranging from 0.943 to 0.972.

Procedure

Ethical clearance was obtained from the university research ethics committee. Permissions were secured from the deans of participating colleges. Students provided informed consent and were assured of confidentiality. Questionnaires were distributed and collected in coordination with faculty advisers.

Data Analysis

Descriptive statistics (mean, standard deviation) summarized the levels of the constructs, and Pearson’s r tested correlations. Multiple regression identified the strongest predictors of academic success. SEM was conducted to test the hypothesized model, using fit indices including chi-square/df ratio, Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA).

The methodological rigor demonstrated through expert validation, pilot testing, and systematic data screening enhances the study’s reliability and provides a strong basis for replicability in future research.

Results and Discussion

The study presents a comprehensive analysis of students’ engagement with academic library services and their impact on academic success using Structural Equation Modeling (SEM). Findings indicate that students exhibit moderate library engagement, tending toward longer but less frequent visits, with greater appreciation for physical facilities than for actual resource use. Their information literacy skills are moderately developed, demonstrating competence in basic search strategies but limited proficiency in critical source evaluation. Interactions with librarians, though positively perceived, remain infrequent and task-specific.

Academic success levels are moderate overall, characterized by strong motivation and effective time management, but limited integration of library resources into academic work. Statistical analyses revealed significant positive correlations among library usage, resource utilization, information literacy, librarian support, and academic achievement. Regression analysis identified source evaluation, librarian helpfulness, satisfaction with facilities, and visit frequency as the strongest predictors of academic success.

The validated MUTI ARISE (Academic Resource Integration for Student Excellence) structural model achieved excellent fit indices, confirming the integrative influence of all constructs on student performance. These findings underscore the library’s pivotal role in fostering academic success and highlight the need for enhanced information literacy initiatives, stronger librarian-student collaboration, and improved library infrastructure to maximize learning outcomes.

Moreover, the implications of these findings extend across diverse student groups, reflecting variations in discipline, demographic background, and access to academic support. Students from information-intensive fields such as education, business, and the sciences may benefit more directly from enhanced information literacy and digital resource training. In contrast, those from practice-oriented programs might gain from stronger librarian engagement, emphasizing applied research and resource navigation. Additionally, students’ differing levels of socioeconomic and technological access highlight the importance of equitable library strategies that accommodate diverse learning needs and contexts. These differentiated insights reinforce the necessity for adaptive and inclusive library interventions to support academic success for all learners.

Table 1. Summary of Mean Scores for the Level of Students’ Library Usage

<i>Sub-variables</i>	<i>Mean</i>	<i>SD</i>	<i>Description</i>	<i>Interpretation</i>
Frequency of visits	2.50	.806	Rarely	Low
Duration of library use	2.68	.934	Sometimes	Moderately High
Purpose of visit	2.57	.910	Sometimes	Moderately High
Over-all Mean	2.58	.819	Sometimes	Moderately High



Table 1 presents the Summary of Mean Scores for the Level of Students’ Library Usage. The data showed that the respondents obtained the highest mean of $M=2.68$ ($SD=.934$) for the duration of library use, followed by the purpose of visit ($M=2.57$, $SD=.910$), and lastly, the frequency of visits ($M=2.50$, $SD=.806$). These results indicated a behavioral pattern in which students. At the same time, non-frequent users of the library tended to spend extended periods of time during each visit, engaging more deeply when they do choose to use the library.

The emphasis on duration over frequency revealed an improvement in how students viewed and used library spaces—not as regular study environments but as strategic sites for academic work. This aligned with the findings of Scoulas and De Groote (2019), who emphasized that students derived the most significant academic benefits from libraries not through routine visits, but through purposeful, high-impact engagement during their time there. According to their findings, students who spent more time in the library were more likely to demonstrate improved academic success due to increased exposure to learning resources, a concentrated study atmosphere, and access to educational support.

Furthermore, the lower mean score for Frequency of Visits ($M=2.50$) suggested that students used the library primarily on a need-driven basis, turning to it for specific academic demands such as exam preparation or research assignments, rather than integrating it into their regular study routines. The relatively high standard deviations across the three indicators, particularly for duration ($SD=0.934$), also indicated an inconsistent routine for library use, with significant differences among students.

The overall mean of $M=2.58$ ($SD=0.819$), described as sometimes, indicated that respondents demonstrated a moderately high level of library usage. Meanwhile, the overall mean of $SD = .819$ implied that the data were dispersed mainly around the mean. This indicated that students regarded the library as a situational academic resource—one that was accessed primarily in response to immediate academic requirements rather than incorporated into their regular, day-to-day study habits. Based on the data shown above, the high standard deviation implied wide variation in usage behavior, with some students using the library intensively and others infrequently. Likewise, Appleton (2020) revealed that student engagement with libraries was often unpredictable and purpose-driven, depending on academic needs and personal study preferences. These findings emphasized the importance of libraries adopting flexible and inclusive strategies that supported both regular users and those who participated only during significant academic periods.

Table 2. Summary of Mean Scores for the Level of Resource Utilization

<i>Sub-variables</i>	<i>Mean</i>	<i>SD</i>	<i>Description</i>	<i>Interpretation</i>
Type of resources accessed	2.18	.923	Rarely	Low
Quality of study spaces	3.17	.933	Sometimes	Moderately High
Satisfaction with facilities	3.23	.895	Sometimes	Moderately High
Over-all Mean	2.86	.739	Sometimes	Moderately High

Table 2 presents the Summary of Mean Scores for the Level of Resource Utilization. The data showed that respondents obtained the highest mean of $M=3.23$ ($SD=.895$) for satisfaction with facilities, followed by quality of study spaces ($M=3.17$, $SD=.933$). These findings indicated that students placed considerable value on the physical and environmental conditions of the library, which served as essential support for comfort, productivity, and academic engagement.

This result aligned with the findings of Beard and Dale (2010), who emphasized the importance of well-designed, flexible, and accessible physical learning environments in promoting students’ academic experience and literacy development. Similarly, Lee and Park (2022) noted that students were more inclined to use library spaces that provided convenience, comfort, and suitability for both collaborative and individual learning tasks.

The lowest mean was obtained for the type of resources accessed ($M=2.18$, $SD=.923$), indicating relatively low engagement with core academic materials such as databases, books, journals, and other digital or print resources. This observation was consistent with Catalano’s (2013) meta-analysis, which revealed that many students tended to rely on easily accessible or familiar sources rather than exploring the breadth of resources available through the library.

The overall mean score of $M=2.86$ ($SD=0.739$) was described as sometimes and interpreted to indicate that the respondents demonstrated a moderately high level of resource utilization. This result indicated that while students recognized and accessed library services to some extent, their engagement was not consistent, and resource utilization remained weak among a significant portion of them.

This result was reflective of findings from Oakleaf (2010), who emphasized that the value of academic libraries extended beyond usage counts and depended significantly on the degree to which students interacted with both physical and informational resources to support learning outcomes.

Meanwhile, the overall standard deviation of $SD = .739$ implied that the data were dispersed mainly around the mean. This suggested that while some students were frequent users of library resources, others rarely engaged. This dispersion was echoed in the study of Soria et al. (2013), who found that students’ library use was not uniform and tended to differ significantly based on factors such as field of study, academic level, and prior exposure to library systems and information literacy instruction.



Table 3. Summary of Mean Scores for the Level of Students' Information Literacy

Sub-variables	Mean	SD	Description	Interpretation
Search skills and strategies	3.05	1.03	Sometimes	Moderately High
Source evaluation	2.93	.905	Sometimes	Moderately High
Over-all Mean	3.05	.847	Sometimes	Moderately High

Table 3 illustrates the Summary of Mean Scores for the Level of Students' Information Literacy. The data showed that the respondents obtained the highest mean of $M=3.05$ ($SD=1.03$) for search skills and strategies, followed by slightly lower performance in source evaluation ($M=2.93$, $SD=3.05$). It could be inferred that while students had a moderately high ability to locate and retrieve information, they struggled to critically assess the quality and credibility of the sources they encountered.

These findings corresponded with broader developments in higher education, in which information literacy instruction prioritized technical search skills over critical evaluative thinking. According to Julien et al. (2018), search techniques were frequently prioritized in instructional practices in many university libraries due to time and curricular constraints. As a result, students learned practical search methods but may not have received enough advice in determining the reliability, bias, or scholarly value of information sources.

Source evaluation's lower mean and extremely high standard deviation demonstrated students' inconsistent development of critical evaluation skills. The difference was due to disparities in prior academic experiences, emphasizing the established information literacy gap highlighted by Saunders et al. (2017). According to their findings, many students attended college without proper training in evaluating sources because they lacked accurate information literacy instruction.

The results presented highlighted the need for more balanced and integrative information literacy education, which not only strengthened students' technical search skills but also fostered critical thinking and evaluative judgment. Bridging this instructional gap was crucial for equipping students with the skills needed to effectively navigate complex information environments, enabling them to approach academic research with greater confidence, critical awareness, and integrity.

The overall mean of $M=3.05$ ($SD=0.847$) was described as sometimes and interpreted to indicate that the respondents demonstrated a moderately high level of information literacy. This implied that students demonstrated occasional, but not consistent, proficiency in essential information literacy tasks such as locating, evaluating, and ethically using information. This inconsistency suggested that while students possessed a basic familiarity with research practices, they had not yet developed the sustained competence necessary to engage critically and independently with complex academic materials. While this was a positive indicator of essential skills, it also identified areas for improvement, particularly in more advanced information processing capabilities.

Meanwhile, the overall mean for $SD=0.847$ implied that the data were dispersed mainly around the mean. This indicated that while many students demonstrated average levels of information literacy, others exhibited markedly higher or lower proficiency. Such disparities reflected uneven access to prior research instruction, differences in exposure to academic resources, and varying degrees of curricular integration of information literacy. These gaps highlighted structural inequities in the learning environment, underscoring the need for targeted interventions to ensure that all students acquire the skills necessary for advanced academic engagement.

More importantly, this finding aligned with the study of Scoulas and De Groote (2019), who emphasized the positive relationship between students' information literacy and their academic performance. They found that students who actively engaged with library instruction and resources tended to report greater academic confidence and learning gains. Based on the data shown in the table above, it could be inferred that students were not yet fully utilizing library services and lacked consistent access to embedded instruction.

In addition, Jones and Mastroilli (2022), through their mixed-methods study, found that students who completed a dedicated information literacy course demonstrated statistically significant gains in both academic performance and research confidence. This reinforced the notion that carefully targeted and systematically structured instruction can elevate students from a moderate baseline of information literacy to higher levels of mastery, enabling them to engage more critically, efficiently, and ethically with academic information sources.

Table 4. Summary of Mean Scores for the Level of Students' Librarian Interactions

Sub-variables	Mean	SD	Description	Interpretation
Frequency of interactions	2.53	1.03	Sometimes	Moderately High
Type of assistance provided	2.51	1.01	Sometimes	Moderately High
Perceived helpfulness	2.89	1.06	Sometimes	Moderately High
Over-all Mean	2.64	.952	Sometimes	Moderately High

Table 4 illustrates the Summary of Mean Scores for the Level of Students' Librarian Interactions. The analysis revealed that the respondents obtained the highest mean of $M=2.89$ ($SD=1.06$) for perceived helpfulness. This suggested that when students engaged with librarians, they perceived the support as both valuable and meaningful. Such an interpretation aligned with the findings of Adetayo et al. (2024), who highlighted that the psychosocial work environment of librarians—shaped by their attitudes, accessibility, and responsiveness—played a critical role in determining the quality of service delivery. These factors were directly tied to students' positive perceptions of librarians' usefulness, particularly in academic research contexts.



This was followed by frequency of interactions (M=2.53, SD=1.03), which indicated that although students regarded librarians as helpful, they did not engage with them frequently. Frandsen and Sørensen’s (2020) extensive review supports this finding, noting that while students often value the library in principle, their direct engagement with librarians was inconsistent. This inconsistency stemmed from several factors, including students’ growing reliance on self-service digital tools, the limited integration of librarians into course curricula, and a lack of awareness of librarians’ roles beyond providing transactional or task-specific support.

Meanwhile, the lowest rating was recorded for the type of assistance provided (M=2.51, SD=1.01). This suggested that students had not fully engaged with the comprehensive range of services librarians offered, such as advanced research guidance, structured information literacy instruction, and support in developing search strategies. Instead, their interactions appeared narrowly confined to basic or transactional needs, reflecting a missed opportunity to benefit from the more transformative and skill-enhancing roles that librarians could play in their academic development.

Supporting this, Vinyard et al. (2017) found that in an age where students were encouraged to adopt a do-it-yourself approach to research, many only sought assistance when they encountered severe difficulties. Their study revealed that help-seeking behavior was often reactive rather than proactive, which indicated a need for libraries to communicate the value and availability of specialized librarian expertise more effectively.

The overall mean was M=2.64 (SD=.952), described as "sometimes" and interpreted as indicating that respondents have a moderately high level of librarian interactions. This suggested that although students engaged with librarians, such interactions were neither frequent nor deeply embedded within their academic routines. Instead, librarian involvement appeared largely situational, emerging in response to immediate or task-specific needs rather than as part of a sustained, proactive partnership. This implied that librarians had not yet been fully integrated into the academic process as consistent collaborators, limiting their potential to shape students’ long-term research practices, critical thinking, and overall academic growth.

Meanwhile, the overall mean with a standard deviation of 0.952 suggested that the data were dispersed mainly around the mean, though with notable variability across responses. This variability indicated that while some students engaged with librarians on a regular and substantive basis, others interacted only infrequently or not at all. Such disparities reflected inconsistencies in students’ awareness of librarian services, the accessibility of professional support, and the motivation to seek assistance, thereby contributing to uneven patterns of academic engagement.

As Farooq et al. (2016) emphasized, the quality and effectiveness of librarian-student interactions depended heavily on the professional competencies of librarians, including their communication skills, instructional ability, and technological proficiency. Students were more likely to engage with librarians who had good instructional and interpersonal competencies. However, in the absence of such competencies or visibility, students may have underestimated or disregarded the academic support that librarians provided.

In addition, Ks and R (2019) found that the effectiveness of library instruction played a crucial role in shaping the frequency and quality of librarian interactions. The study emphasized that when students received well-structured, relevant, and engaging instruction, they were more likely to view librarians as valuable academic partners and actively seek further research assistance. Conversely, when instruction was perceived as broad, inconsistent, or disconnected from academic goals, students were less inclined to engage with librarians.

Table 5. Level of Students’ Academic Success

Indicators	Mean	SD	Description	Interpretation
1. I complete my academic tasks on time.	3.58	1.00	Often	High
2. I review my notes and study materials regularly to improve my performance.	3.50	1.02	Sometimes	Moderately High
3. I participate actively in group discussions and academic activities.	3.43	1.04	Sometimes	Moderately High
4. I seek additional resources (e.g., books, journals, online tools) to enhance my understanding of course topics.	3.41	1.10	Sometimes	Moderately High
5. I consult with instructors or peers to clarify challenging academic concepts.	3.36	1.09	Sometimes	Moderately High
6. I prepare thoroughly for exams and major assessments.	3.51	1.06	Often	High
7. I set aside dedicated time each day for studying or completing coursework.	3.42	1.09	Sometimes	Moderately High
8. I utilize library resources (e.g., books, journals, databases) to improve the quality of my work.	2.76	1.17	Sometimes	Moderately High
9. I apply feedback from instructors or peers to make improvements in my academic tasks.	3.23	1.13	Sometimes	Moderately High
10. I manage my time effectively to balance coursework with extracurricular activities.	3.40	1.03	Sometimes	Moderately High
11. I attend all lectures, seminars, and required academic sessions.	3.40	1.14	Sometimes	Moderately High
12. I stay motivated to achieve my academic goals even when faced with challenges.	3.57	1.01	Often	High
13. I seek academic support (e.g., tutoring, workshops) when I need help.	3.25	1.16	Sometimes	Moderately High
14. I collaborate effectively with classmates during group assignments or projects.	3.54	1.07	Often	High
15. I demonstrate consistent effort in improving my grades and overall performance.	3.56	1.06	Often	High
Over-all Mean	3.40	.832	Sometimes	Moderately High



Table 5 presents the Level of Students' Academic Success. The data revealed that the respondents obtained the highest mean score of $M=3.58$ ($SD=1.00$) for indicator number 1, "I complete my academic tasks on time". This finding suggested that a substantial number of students practiced effective time management and demonstrated responsibility in accomplishing their academic requirements. As emphasized by Karannagoda (2019), timely engagement with academic resources, including university libraries, is positively associated with improved academic performance. Students who accessed and applied relevant information in a timely manner were better positioned to complete their academic tasks on schedule, thereby enhancing their overall academic outcomes.

As for the second indicator number 12, "I stay motivated to achieve my academic goals even faced with challenges" ($M=3.57$, $SD=1.01$), it indicated that students exhibited strong internal motivation and resilience in pursuit of their educational objective. Kuh and Gonyea (2003) emphasized the significant role that academic libraries played in promoting student engagement and sustaining motivation through enriched learning environments. Their research found that students who actively engaged with academic support systems, including library services, tended to remain more committed and motivated, particularly when facing educational challenges.

Moreover, indicator number 15, "I demonstrate consistent effort in improving my grades and overall performance" ($M=3.56$, $SD=.832$), suggested students' perseverance and goal-directed behavior. This result was supported by the study of Hodge et al. (2018), which highlighted the role of grit—defined as persistent effort and sustained interest—in predicting both academic engagement and achievement. Their findings suggested that students who continually strived for educational improvement, regardless of setbacks, were more likely to succeed in higher education settings.

On the other hand, the lowest mean was recorded for indicator number 8, "I utilize library resources (e.g., books, journals, databases) to improve the quality of my work" ($M=2.76$, $SD=1.17$). This finding reflected a limited reliance on library resources, suggesting that students did not consistently engage with formal information sources to strengthen the quality and credibility of their academic outputs. Estrada et al. (2023) emphasized that effective use of library resources plays a critical role in enhancing academic performance and fostering higher-order thinking skills, particularly in Philippine public universities. Their study further revealed that students who frequently accessed library materials, whether digital or physical, demonstrated more advanced research capabilities and stronger academic writing competencies.

Following this, the indicator number 9, "I apply feedback from instructors or peers to make improvements in my academic tasks" ($M=3.23$, $SD=1.13$), indicated a low level of feedback application. While students received evaluative comments, the results suggested that they struggled to interpret, internalize, or act upon feedback to improve their academic work. According to Carless and Boud (2018), simply providing feedback did not ensure academic growth; instead, students must develop feedback literacy—a set of skills that includes the ability to comprehend feedback messages, determine their significance, and make appropriate modifications.

Lastly, the indicator number 13, "I seek academic support (e.g., tutoring, workshops) when I need help" ($M=3.25$, $SD=1.16$), suggested a reluctance or underutilization of academic support services despite their availability. Humbhi and Tareen (2022) discovered that many students lacked proactive information-seeking behaviors due to various factors such as limited access, lack of awareness, or sociocultural barriers. Their findings showed that students often preferred self-reliance or peer support over formal academic assistance, especially when institutional supports were not well-promoted for various types of students.

The overall mean of $M=3.40$ ($SD=.832$), described as sometimes, indicated that respondents demonstrated a moderately high level of academic success. This suggested that students only occasionally practiced behaviors typically associated with strong academic outcomes—such as goal setting, effective time management, incorporating feedback, and strategically utilizing resources—rather than engaging in them consistently.

As Apple et al. (2016) emphasized, academic success was dependent on the development and consistent application of essential learner qualities such as intrinsic motivation, perseverance, self-regulation, and active engagement with the learning environment.

Meanwhile, the overall mean for $SD=0.832$ implied that the data were dispersed mainly around the mean, indicating that while some students exhibited high academic functionality, others struggled to sustain success-related behaviors. This was consistent with the findings of Dold (2013), who underscored the pivotal role of educational support systems—particularly librarians and library services—as indispensable partners in fostering students' educational growth and overall education development.

Moreover, this finding suggested the need to improve both learner development and institutional support. Encouraging students to develop behaviors associated with high-performing learners, such as proactive help-seeking and strategic use of academic resources, could potentially elevate their performance from moderate to high levels.

Table 6. Relationship between Students' Academic Success, Library Usage, Resource Utilization, Information Literacy, and Librarian Interactions

Variables	N	r	P-value	Interpretation
Frequency of Visits	947	.314	.000	Significant
Duration of library use	947	.335	.000	Significant
Purpose of visit	947	.362	.000	Significant
Library Usage	947	.361	.000	Significant
Type of resources accessed	947	.336	.000	Significant



Quality of study spaces	947	.448	.000	Significant
Satisfaction with facilities	947	.496	.000	Significant
Resource Utilization	947	.529	.000	Significant
Search skills and strategies	947	.491	.000	Significant
Source evaluation	947	.567	.000	Significant
Information Literacy	947	.573	.000	Significant
Frequency of interactions	947	.394	.000	Significant
Type of assistance provided	947	.394	.000	Significant
Perceived helpfulness	947	.538	.000	Significant
Students' Librarian Interaction	947	.484	.000	Significant

Note: $p = .05$ or $p < .05$ is significant (reject H_0) and $p > .05$ is not significant (accept H_0)

Table 6 shows the Significant Relationship between Students' Academic Success, Library Usage, Resource Utilization, Information Literacy, and Librarian Interactions. As presented in the table, there was a positive significant relationship between the students' academic success and Frequency of Visits ($r = .314, p < .05$), Duration of library use ($r = .35, p < .05$), Purpose of visit ($r = .362, p < .05$), Library Usage ($r = .361, p < .05$), Type of resources accessed ($r = .336, p < .05$), Quality of study spaces ($r = .448, p < .05$), Satisfaction with facilities ($r = .496, p < .05$), Resource Utilization ($r = .529, p < .05$), Search skills and strategies ($r = .491, p < .05$), Source evaluation ($r = .567, p < .05$), Information Literacy ($r = .573, p < .05$), Frequency of interactions ($r = .394, p < .05$), Type of assistance provided ($r = .394, p < .05$), Perceived helpfulness ($r = .538, p < .05$), and Students' Librarian Interaction ($r = .484, p < .05$).

This meant that there was substantial evidence to claim that the relationship of the said independent variables with students' academic success was honest and did not occur by chance. The results implied that increases in the identified independent variables corresponded with improvements in students' academic performance, suggesting a direct and reinforcing relationship between these factors and overall academic success.

These findings affirmed the relevance of Astin's Input-Environment-Output (I-E-O) Model, which emphasized the importance of educational settings, such as libraries, in shaping student outcomes. Frequent library visits ($r = .314$), extended duration of use ($r = .35$), and purpose of visit ($r = .362$) were all positively associated with students' academic success. As noted by Huang and Tahamtan (2018), the reasons individuals visited libraries for study, access to information, or a conducive learning setting played a critical role in supporting educational goals.

Furthermore, Bisht and Yadav (2020) emphasized that regular and meaningful use of library services enhanced users' academic pursuits. Their findings supported the present study's observation that library usage ($r = .361$) was an essential contributor to academic performance. This finding is consistent with the Resource-Based View (RBV) Theory, which suggests that access to quality and well-managed resources yields competitive advantages for learners.

Significantly, notable correlations emerged with resource-related indicators, including the type of resources accessed ($r = .336$), quality of study spaces ($r = .448$), and satisfaction with facilities ($r = .496$). As Laluna (2018) stressed in her design-based study, the physical environment and spatial design of libraries greatly influenced user experience and productivity, thereby affecting academic success.

In terms of information literacy, the high correlations for search strategies ($r = .491$) and source evaluation ($r = .567$), culminating in a composite score of $r = .573$, indicated that students who could independently locate, assess, and utilize information were more academically successful. This aligned with Carlock's (2020) assertion that the acquisition of information literacy skills is a cornerstone of academic integrity, critical thinking, and lifelong learning—principles central to Constructivist Learning Theory, where learners actively construct knowledge through meaningful engagement with information.

Equally important were the results related to librarian interactions, including frequency ($r = .394$), type of assistance ($r = .394$), and perceived helpfulness ($r = .538$). The averaged librarian interaction score ($r = .484$) indicated the importance of professional academic support.

According to Bradley-Ridout et al. (2024), librarians played a crucial instructional role, especially in teaching advanced search methods for knowledge synthesis, which highlighted their influence on learners' academic growth. These findings were consistent with Self-Determination Theory (SDT), which underscores the value of autonomy-supportive environments and collaborative relationships in fostering intrinsic motivation, enhancing persistence, and ultimately improving educational performance.

Moreover, the findings agreed with the principles of Self-Regulated Learning Theory (SRL), which pointed out how students actively regulated their learning by utilizing accessible resources and support systems. The significant relationship discovered in this study indicated that when students actively engaged with library resources, improved their information skills, and sought meaningful interactions with librarians, their academic performance improved.

Finally, the findings demonstrated that academic success resulted from well-integrated educational practices, including library usage, resource utilization, information literacy, and librarian interactions.



Table 7. Multiple Regression Analysis for the Variables That Singly or in Combination Influence Students' Academic Success

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Interpretation
	B	Std. Error	Beta			
(Constant)	1.14	.093		12.31	.000	Significant
Perceived helpfulness	.261	.032	.334	8.22	.000	Significant
Type of assistance provided	.115	.032	.141	3.58	.000	Significant
Source evaluation	.279	.032	.311	8.65	.000	Significant
Search skills and strategies	.075	.034	.082	2.23	.026	Significant
Satisfaction with facilities	.158	.029	.170	5.52	.000	Significant
Frequency of Visits	.067	.029	.064	2.29	.022	Significant
R=.667 R2=.446 F(6, 940)=125.89 P=.000						

Table 7 presents the results of the Multiple Regression Analysis for the Variables That Singly or in Combination Influence Students' Academic Success. As depicted in the table, this resulted in a significant model, $F(6, 940) = 125.89, p < .05, R^2 = .446$, which indicated that approximately 44.6% of the variance in students' academic success could be explained by the combined effects of library usage, resource utilization, information literacy, and librarian interactions. This indicated a moderately strong association between library-related variables and academic achievement, suggesting that students' engagement with library resources and services meaningfully contributed to their overall educational performance.

The individual predictors were examined further and indicated that Perceived helpfulness ($t = 8.22, p < .05$), Type of assistance provided ($t = 3.58, p < .05$), Source evaluation ($t = 8.65, p < .05$), Search skills and strategies ($t = 5.52, p < .05$), Satisfaction with facilities ($t = 5.52, p < .05$), and Frequency of Visits ($t = 2.29, p < .05$) were significant predictors.

Among the significant predictors, Perceived helpfulness ($t = 8.22, p < .05$) was one of the strongest predictors of academic success. This result implied that when students perceived librarians as approachable and genuinely helpful, they were more likely to succeed academically. McClellan and Beggan (2019) highlighted that librarians who proactively adopted strategies to enhance their approachability and engagement increased students' likelihood of seeking support, which positively impacted their academic outcomes. Thus, students who felt supported by librarians were more confident in navigating academic challenges, leading to improved performance.

Type of assistance provided ($t = 3.58, p < .05$) was also a significant predictor of academic success. This finding suggested that the quality and relevance of support, such as research guidance, referencing help, or database navigation, had a meaningful impact on students' ability to meet academic demands. Hulseberg (2023) drew parallels between librarianship and academic advising, noting that when librarians provided tailored, student-centered guidance, it enhanced students' academic agency and overall performance. This underscored the evolving role of librarians, positioning them not merely as information providers but as active educational partners who facilitate critical inquiry, foster research skills, and contribute to students' holistic educational development.

Also, Source evaluation ($t = 8.65, p < .05$) demonstrated the highest t-value among the predictors, which emphasized its critical role in academic success. This suggested that students with well-developed abilities to critically assess the credibility, relevance, and potential bias of information sources were more likely to achieve stronger education outcomes. Mullins and Boyd-Byrnes (2024) emphasized that the instructional role of academic librarians substantially enhanced students' evaluative competencies, which serve as the foundation for producing rigorous, evidence-based scholarship. Thus, the capacity to discern and apply valid information functioned as a direct catalyst for academic success.

Search skills and strategies ($t = 5.52, p < .05$) were also significantly associated with academic achievement. This indicated that students who demonstrated proficiency in formulating precise search queries, navigating scholarly databases, and retrieving relevant scholarly sources were better positioned to meet course requirements effectively. Such skills not only streamlined the research process but also fostered deeper engagement with disciplinary knowledge, thereby strengthening both educational performance and intellectual independence. Thanuskodi (2018) found that strong information retrieval skills correlated with greater academic independence and efficacy. These skills not only reduced research time but also improved the depth and quality of students' academic output.

Satisfaction with facilities ($t = 5.52, p < .05$), another significant predictor, suggested that the physical and technological infrastructure of the library, such as study areas, computer access, and internet speed, played a crucial role in supporting academic endeavors. According to Thanuskodi (2018), students who expressed satisfaction with library resources and amenities were more likely to frequent the library and use its offerings productively, which in turn facilitated better academic outcomes.

Lastly, Frequency of Visits ($t = 2.29, p < .05$) significantly predicted academic success, albeit with a relatively lower effect size. This suggested that students who engaged in regular library visits were more inclined to interact with a broad spectrum of information resources, participate in instructional sessions, and seek professional assistance from librarians. These activities, taken cumulatively, fostered stronger research competencies, reinforced academic habits, and ultimately contributed to the enhancement of overall

educational performance. Gyau et al. (2021) found that frequent library users developed consistent study habits and greater academic discipline, which were vital contributors to success.

The R^2 value of 0.446 implied that the significant predictors predicted 44.6% of students' academic success, while 55.4% could have been attributed to other factors not included in this study. This finding reinforced the conclusion of Nurse et al. (2018), who observed a strong relationship between students' access to and engagement with library resources and their academic performance, particularly in distance-learning contexts. They emphasized that library services, when integrated effectively, provided critical academic support infrastructures that bolstered student learning, confidence, and success, even when direct institutional interaction was limited.

Similarly, Gaha et al. (2018) demonstrated that library instruction positively correlated with higher student GPAs, further supporting the idea that academic libraries contributed directly to measurable educational outcomes. Their study highlighted how targeted information literacy instruction and strategic librarian engagement could significantly enhance students' research capabilities and academic confidence, leading to improved academic performance.

Meanwhile, when all other variables were held constant, the best significant predictor of students' academic success was Perceived helpfulness ($\beta = .334$). This indicated that, when all other variables were controlled, a one standard deviation increase in students' perception of librarian helpfulness corresponded to a .334 standard deviation increase in academic success. This underscored the pivotal role of personalized, approachable, and effective librarian support in shaping educational outcomes. As emphasized by McClellan and Beggan (2019), librarians who were perceived as genuinely helpful not only alleviated student anxiety but also promoted deeper education engagement, critical thinking, and problem-solving capacities—key dimensions of sustained educational achievement.

Following closely, Source evaluation ($\beta = .311$) emerged as the second strongest predictor. This suggested that students who demonstrated proficiency in critically evaluating the credibility, relevance, and quality of information sources were better positioned to achieve higher levels of academic success. Such evaluative competence not only safeguarded the integrity of their research but also enabled them to construct well-founded arguments, integrate evidence more effectively, and engage in scholarly discourse with greater rigor. This finding aligned with Mullins and Boyd-Byrnes (2024), who emphasized the centrality of source evaluation in information literacy instruction and its direct impact on academic writing and performance.

Satisfaction with facilities ($\beta = .170$) was also a significant contributor, which indicated that students who viewed the physical and technological environment of the library as conducive to learning tended to perform better academically. This affirmed Thanuskodi's (2018) argument that well-maintained and readily accessible library facilities fostered sustained study habits and enhanced cognitive focus. By providing an environment conducive to concentration and continuity of effort, such facilities not only supported students' immediate academic tasks but also reinforced long-term learning behaviors essential for scholarly persistence and achievement.

This further indicated that the type of assistance provided ($\beta = .141$) exhibited a meaningful positive relationship with academic success. Such a finding underscored the significance of the specific nature and quality of librarian support, suggesting that tailored guidance—whether through research consultations, instructional workshops, or personalized feedback—functioned in ways comparable to academic advising. As Hulseberg (2023) emphasized, this form of targeted support not only addressed immediate information needs but also cultivated students' broader academic competencies and confidence.

Search skills and strategies ($\beta = .082$) also significantly predicted academic performance, though with a more modest effect size. Students who developed and applied effective search techniques gained better access to high-quality educational materials, thereby enhancing their educational performance. This finding supported Thanuskodi's (2018) assertion on the importance of structured information retrieval skills as a foundation for effective learning and scholarly achievement.

Lastly, Frequency of Visits ($\beta = .064$), while still a significant predictor, had the smallest beta coefficient. This suggested that while regular library attendance was positively associated with academic success, its influence appeared to be more indirect, functioning as a supportive condition rather than a primary determinant. Cognitive competencies, such as information literacy and critical thinking, along with interpersonal factors like librarian engagement and collaborative learning, exerted a more immediate and substantive impact on students' academic performance. Nevertheless, as noted by Gyau et al. (2021), frequent visits often reflected increased exposure to academic resources and support services, which may have accumulated into measurable academic benefits over time.

Among these, source evaluation emerged as the strongest predictor ($\beta = .279$), which emphasized the importance of students' ability to assess the credibility and relevance of academic sources. This aligned with Qamar et al. (2021), who stressed that practical evaluation of information was a cornerstone of academic literacy and essential for informed decision-making in educational tasks. Closely following, perceived happiness ($\beta = .261$) significantly influenced academic success, which reflected the value of students' perceptions of librarians as approachable and supportive. As Muszkiewicz (2017) noted, structured programs that increased student familiarity with librarians reduced anxiety and encouraged resource use, ultimately enhancing learning outcomes.

Satisfaction with library facilities also played a notable role ($\beta = .158$), which suggested that well-designed, accessible learning environments contributed meaningfully to academic engagement. This supported the findings of Li et al. (2018), who demonstrated that well-designed physical library spaces exerted a significant influence on student satisfaction and academic productivity. Their study emphasized that spatial qualities—such as comfort, accessibility, and adaptability to diverse study needs—contributed not only

to positive user experiences but also to students’ overall capacity to sustain focus and achieve learning outcomes. While the Type of assistance provided ($\beta = .115$) and Search skills and strategies ($\beta = .075$) showed moderate predictive power, they remained essential in equipping students with the necessary competencies to navigate complex information systems and complete academic tasks effectively. The findings echoed the conclusion of Koffel (2015), who demonstrated the impact of guided search strategies on educational quality.

Finally, Frequency of visits to the library ($\beta = .067$) showed a modest but positive relationship with academic success. This reinforced the findings of Matta and Rao (2023), who established that consistent library usage was positively correlated with greater familiarity and deeper engagement with scholarly resources. Their study highlighted that regular interaction with scholarly materials not only enhanced students’ confidence in navigating complex information landscapes but also fostered stronger research habits that contributed to sustained academic growth. These findings confirmed the academic library’s varied role, not just as a physical and digital learning space, but also as a dynamic partner in students’ educational development through supportive services, skill-building, and environment optimization.

Table 8. Summary of Goodness-of-Fit Measures of the Five Structural Models

Model	CMIN/DF	P-value	NFI	TLI	CFI	GFI	RMSEA
1	10.92	.000	.731	.628	.746	.860	.102
2	14.10	.000	.736	.622	.748	.869	.118
3	16.54	.000	.731	.576	.741	.869	.128
4	8.65	.000	.865	.800	.878	.936	.128
5	1.60	.117	.990	.986	.996	.995	.025
Standard	<2	>.05	>.95	>.95	>.95	>.95	<.05

Table 9 presents the Summary of Goodness-of-Fit Measures of the Five Structural Models. As depicted in the table, structural models 1, 2, 3, and 4 failed to obtain the standard value of the seven indices. This indicated that these initial models did not adequately capture the relationships among the latent variables involved in the study.

In contrast, Structural Model 5 emerged as the best fit model, satisfying all seven standard fit criteria. Specifically, the model yielded a CMIN/DF ($1.60 < .2$), which was well below the commonly accepted upper limit of 2.0, indicating a low level of discrepancy between observed and estimated covariance matrices. The p-value ($.117 > .05$), being greater than the threshold, suggested that the model did not significantly deviate from the data, thereby supporting model adequacy.

Further supporting its good fit, the NFI ($.99 > .95$), TLI ($.986 > .95$), CFI ($.996 > .95$), and GFI ($.995 > .95$) all exceeded the standard cut-off of .95, implying an excellent comparative and absolute fit of the model. Additionally, the RMSEA ($.025 < .05$) was within the expected standard values of the said model fit indices, indicating a very close approximation of the model to the population data. Finally, these values demonstrated that Structural Model 5 had the most robust and acceptable fit among the five competing models. As such, it was confidently accepted as the final structural model representing the hypothesized relationships among library usage, resource utilization, information literacy, librarian interactions, and students’ academic success.

This finding was aligned with the assertion of Hair et al. (2019) that a model achieving values within the standard thresholds across multiple fit indices was deemed to have acceptable structural integrity and theoretical plausibility. Therefore, the selection of Structural Model 5 provided a valid basis for subsequent interpretation and analysis of the causal relationships among the study variables. This model can be called “MUTI ARISE (Academic Resource Integration for Student Excellence) MODEL”.

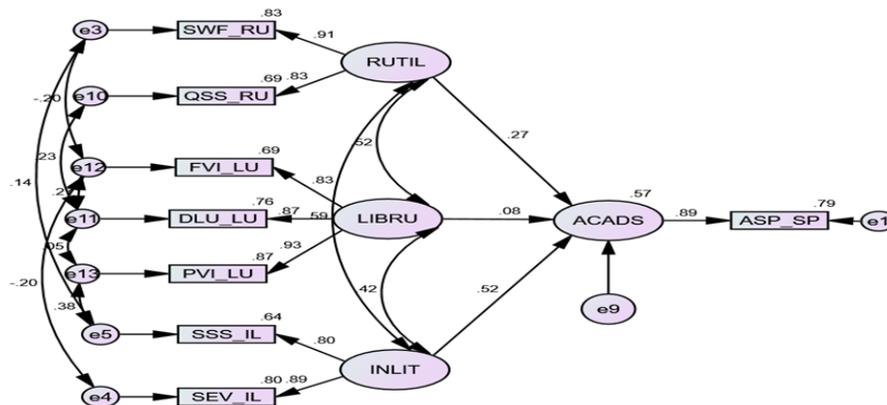


Figure 1. Structural Model 5 of Students’ Academic Success (Best Fit Model)

This model validated the integrated role of the four constructs in enhancing academic success.

Conclusions

Students reported moderately high library usage, resource utilization, information literacy, and librarian interactions, all positively associated with academic success. Regression and structural equation modeling (SEM) confirmed that the quality of librarian support, source evaluation competencies, and satisfaction with facilities were the most influential predictors.

The MUTI ARISE (Academic Resource Integration for Student Excellence) Model demonstrated excellent fit, offering a robust and comprehensive explanation of how these constructs collectively shape academic outcomes. This confirms the central role of academic libraries as multifaceted contributors to student success.

The following stakeholders are encouraged to take specific actions based on the study's findings: the Commission on Higher Education (CHED) should integrate library engagement and information literacy into quality assurance frameworks and provide funding for library capacity-building; universities such as Mindanao State University (MSU) should institutionalize information literacy training, expand library infrastructure, and promote librarian-faculty collaborations; library associations should strengthen professional development programs and advocate for greater national visibility of libraries; library directors or administrators should prioritize user-centered services, strategic planning, and continuous impact assessments; librarians should adopt proactive outreach strategies, provide tailored support, and integrate digital innovations into their services; faculty members should embed library resources and information literacy outcomes into their curricula; students should maximize the use of available resources, attend information literacy sessions, and actively engage with librarians; community members and alumni should support library advocacy and contribute resources to sustain library operations; and future researchers are encouraged to extend the scope of study to include digital literacy, learning environments, and longitudinal designs for deeper insights.

References

- Ameen, K., & Ullah, M. (2018). Library services and student success: An empirical study. *Journal of Librarianship and Information Science*, 50(4), 421–435.
- Association of College & Research Libraries (ACRL). (2016). Framework for information literacy for higher education. ACRL.
- Brown, K., & Malenfant, K. (2017). Documented library contributions to student success. *College & Research Libraries*, 78(1), 3–31.
- Campbell, J. D., & Cox, B. L. (2018). Libraries and learning analytics: Supporting student success. *Portal: Libraries and the Academy*, 18(4), 1–15.
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). Routledge.
- Cox, B. L., & Jantti, M. (2015). Capturing library impact: Information literacy and student performance. *Portal: Libraries and the Academy*, 15(3), 611–626.
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference* (4th ed.). Allyn & Bacon.
- Head, A. J. (2019). Information literacy in the age of algorithms. Project Information Literacy Research Report.
- Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence-Based Nursing*, 18(3), 66–67. <https://doi.org/10.1136/eb-2015-102129>
- Jiao, Q. G., & Onwuegbuzie, A. J. (2019). The impact of library anxiety on academic success. *College Student Journal*, 53(2), 123–137.
- Johnson, M., & Matthews, J. (2021). Library use and GPA: A longitudinal study. *Journal of Academic Librarianship*, 47(5), 102385. <https://doi.org/10.1016/j.acalib.2021.102385>
- Kumar, S., & Ahmad, S. (2020). Academic libraries and student performance: A meta-analysis. *Library Management*, 41(8/9), 623–640.
- Laskin, M., & Settel, B. (2019). Faculty collaboration with librarians: Impact on student learning. *Journal of Library Administration*, 59(6), 656–672.
- Leong, J., & Rasiah, V. (2019). Library spaces and student learning. *Library Philosophy and Practice*, 2019(1), 1–12.
- Lewis, J. (2020). Structural equation modeling in educational research. *Educational Research Review*, 29, 100–118.
- Liu, S. (2019). Digital literacy and academic achievement. *Computers & Education*, 139, 18–30.
- Oakleaf, M. (2020). The value of academic libraries revisited. *College & Research Libraries*, 81(3), 291–305.
- Parker, S., & Hall, C. (2017). Embedding librarianship: A pathway to student success. *Reference Services Review*, 45(2), 219–234.
- Pickard, A. J. (2017). *Research methods in information*. Facet Publishing.

- Rubio, D. M., Berg-Weger, M., Tebb, S. S., Lee, E. S., & Rauch, S. (2003). Objectifying content validity: Conducting a content validity study in social work research. *Social Work Research*, *27*(2), 94–104. <https://doi.org/10.1093/swr/27.2.94>
- Saunders, L. (2018). Information literacy as a student learning outcome. *Journal of Academic Librarianship*, *44*(2), 121–129.
- Soria, K. M., Fransen, J., & Nackerud, S. (2020). The academic library's contribution to student success. *Portal: Libraries and the Academy*, *20*(1), 65–84.
- Stone, G., & Ramsden, B. (2019). Library impact data project: Student engagement and success. *Performance Measurement and Metrics*, *20*(1), 25–38.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, *2*, 53–55. <https://doi.org/10.5116/ijme.4dfb.8dfd>
- Tinto, V. (2017). *Student success and the learning community experience are interconnected*. University of Chicago Press.
- Walters, W. H. (2018). The effectiveness of library instruction: A meta-analysis. *College & Research Libraries*, *79*(1), 6–25.
- Wong, S. H., & Webb, T. D. (2019). Uncovering meaningful library engagement. *Journal of Academic Librarianship*, *45*(1), 1–8.
- Zhang, Y. (2020). Academic libraries and digital transformation. *Library Management*, *41*(4/5), 267–280.
- Zhao, Y., & Mawhinney, T. (2019). Student use of e-resources and performance outcomes. *Electronic Library*, *37*(2), 282–297.

Affiliations and Corresponding Information

Sittie Saadia M. Muti

Liceo de Cagayan University – Philippines

Cristine A. Geroy

Liceo de Cagayan University – Philippines

Nenita I. Prado

Liceo de Cagayan University – Philippines