

Assessment of Information Retrieval Skills and the Satisfaction on the Library Collections and Services: The Mediating Role of Information Literacy Program

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Abstract— The COVID-19 pandemic led to widespread adoption of digital education ecosystem and speeded the shift toward virtual learning environments. The role of academic libraries expands in facilitating the academic needs of students, user's access to information resources, and in developing effective research skills. This study examined the relationship between information retrieval skills, satisfaction on the library collections and services, and the mediating role of the Information Literacy Program (ILP) using a quantitative correlational research design. This study involved 330 students from selected campuses of the University of Mindanao. Moreover, Data were gathered through adopted survey questionnaires. Descriptive statistics, Pearson Correlation and Mediation Analysis were utilized to analyze the results. Findings revealed that respondents exhibited a high levels of information retrieval skills and very high levels of satisfaction in the library collections and services. Additionally, the Information Literacy Program was assessed and result presented that it is greatly influenced and effective in enhancing the students' searching skills, use of digital resources, and independent access to information. Correlation analysis demonstrated a significant positive relationship among information retrieval skills, the Information Literacy Program, and User's Satisfaction. Furthermore, mediation analysis indicated that the Information Literacy Program partially mediates the relationship between information retrieval skills and satisfaction. Results suggesting that structured literacy instruction strengthens users' research competencies and enhances their overall experience with library resources and services.

Keywords— information retrieval skills, user satisfaction, information literacy program, library services, academic library.

I. INTRODUCTION

The COVID-19 pandemic left a mark on the world that will never be forgotten. The traditional education ecosystem transformed to a virtual environment including the adoption of remote learning with significant implications for students' access to information resources and the efficacy of library services. As educational institutions continue to manage the gaps of remote learning and digital literacy, the academic support function of libraries in enhancing user's information retrieval skills and supporting students' academic endeavors has become increasingly vital (Aristovnik et al., 2023). Out Of the 120 faculty members working in colleges in the South District of Khyber, Pakhtunkhwa, Pakistan, 55% reported being satisfied with the library collections, and 12.5% were extremely satisfied. Regarding the library staff, 61.7% agreed they were satisfied with

their helpfulness. Cataloging services, circulation services, scanning services, internet facility, and computer facility are the common library services offered by a college library. The study showed that only circulation services received high ratings: 27.5% were extremely satisfied and 65.8% were satisfied (Anmol, Khan & Muhammad, 2021).

Information Retrieval Skills are essential as they serve as the first step towards finding and using library resources and services efficiently (Odu & Edam-Aghor, 2018). Additionally, information retrieval skills could be ascribed as a 'nucleus' of academic work. Information retrieval skill is the ability to find information by defining and composing the correct queries to retrieve relevant information as a result of a specific query. (Ebiefung, Adetimirin & Oyewole (2020).

One institution offers a unique instructional program that teaches how to use the library effectively. Basic library uses and information literacy skills will be discussed that helps library patrons to locate information independently, quickly, and more efficiently. Tools available in the library to access information resources, available library systems, electronic resources, reference resources and services, and library rules and regulations are all included in the library instruction program. By teaching the concepts and logic of information access and evaluation, as well as by encouraging information independence and critical thinking, it equips individual library users to use information effectively both immediately and throughout their lives (Odu & Edam-Aghor, 2018). The University of Pretoria in South Africa provides a module in information retrieval (INL211). This module spans seven weeks and consists of nine topics. The module covers internet-based information, the assessment of information resources, the composition of search engines, search result evaluation, anatomy of databases, web searching, search techniques, the evaluation of databases and search engines, and information overload. The primary objective of the module is to introduce the students to the online industry and encourage them to exercise advanced organization and use of information and its retrieval (Fourie & Bothma, 2006). The key to success in a service-driven organization is user satisfaction. User satisfaction is significantly achieved through the efficiency of library service delivery, the availability of resources, and the instant assistance offered by staff (Kaur & Kathuria, 2022). Public libraries should continue to provide essential information services to survive in the ever-changing world of information sharing. This includes internet access and user education services that significantly influence the user's Satisfaction. Library users of special libraries in Kwara State were happy and immensely satisfied (Philip & Udo, 2020).

This research endeavors to delve into the intricate interactions among information retrieval skills, satisfaction on the library collections and services, and the mediating influence of the information literacy program. Additionally, this study includes the evaluation of student's ability to access, assess and use

information resources. In an era when digital knowledge is abundant, these skills are essential and important to the students to boost academic achievement. Furthermore, this study seeks to gauge students' satisfaction with the extent, relevance, and accessibility of library collections and services, recognizing the vital role they play in supporting diverse academic pursuits. The fundamental of this study is the exploration of how information literacy programs, designed to provide students with the essential skills to navigate the information effectively, mediate the relationship between the student's information retrieval skills and their perceptions of library collections and services. This research provides beneficial insights into the shifting dynamics of information access and use in the field of education, particularly in the aftermath of the COVID-19 pandemic. It could serve as a basis for creating a new library service that meets students' information needs. By shedding light on the efficacy of information literacy interventions in enhancing students' engagement with library resources and services, we aim to inform the development of targeted strategies to strengthen students' information retrieval skills and optimize their academic experience in a post-pandemic world. Insufficient funds for acquiring ICT facilities, lack of relevant ICT knowledge and library education, lack of information literacy and information retrieval skills, and limited awareness of ICT facilities are the challenges of the students encountered in accessing information in the library (Mahwasane, Nkhangweni & Mudzielwana, N.P., 2016). Additionally, Information literacy is a crucial skill set for university students that enables them to navigate the vast expanse of information available today. It is more than just knowing how to use a search engine; it is about understanding the nuances of information and applying critical thinking to use it effectively (Baro & Keboh, 2012).

This research supports Sustainable Development Goal 4: Quality Education. Academic libraries play a significant role in ensuring the quality of education. Information literacy, awareness, advocacy, training, workshops, seminars, and orientation are administered by the libraries. These activities support achieving SDG no. 4. The library provides materials that aid

students' learning and information needs, designs training on information literacy, and conducts an Information Literacy Program to interact with library users and raise awareness of the SDG (De-Graft & Asante, 2022). The general objective of this study is to assess information retrieval skills and Satisfaction with library resources and services mediated by the Information Literacy Program. Specifically, to assess students' information retrieval skills, identify students' Satisfaction with the library collections and resources, and determine the impact of the Information Literacy Program on students' information retrieval skills and their Satisfaction with the library collections and services.

This study is anchored in Jean Piaget's Constructivist Learning Theory, which posits that learners actively construct knowledge through experience and interaction, making it essential for educational environments that prioritize critical thinking and problem-solving. In the context of information literacy, constructivism encourages students to actively engage with information resources, enabling them to develop effective retrieval strategies through hands-on practice and collaborative learning. As students navigate library collections, they learn to assess the relevance and credibility of sources, which not only enhances their skills but also leads to greater confidence and Satisfaction with their ability to find

and utilize information. By fostering an environment where students are empowered to take charge of their learning, libraries can ensure that their collections meet user needs, ultimately increasing user satisfaction and promoting lifelong learning. In 1950, Calvin Mooers coined the term "information retrieval". It means retrieving bibliographic information from database systems that store documents. Libraries use information retrieval to search for material or specific information within the collection. With the aid of technology, information retrieval can be done with traditional tools and computer-based tools. Libraries continue to use traditional tools such as library catalogs, bibliographies, and printed indexes. Presently, other libraries are using computer-based tools such as online databases. American Library Association initiatives state that to be information literate, one must be able to "recognize when information is needed and able to locate, evaluate and use the needed information effectively".

The conceptual framework of this study is shown in Figure 1. It shows the three variables: information retrieval skills as the independent variable, students' satisfaction with library collections and services as the dependent variable, and the information literacy program as the mediating variable.

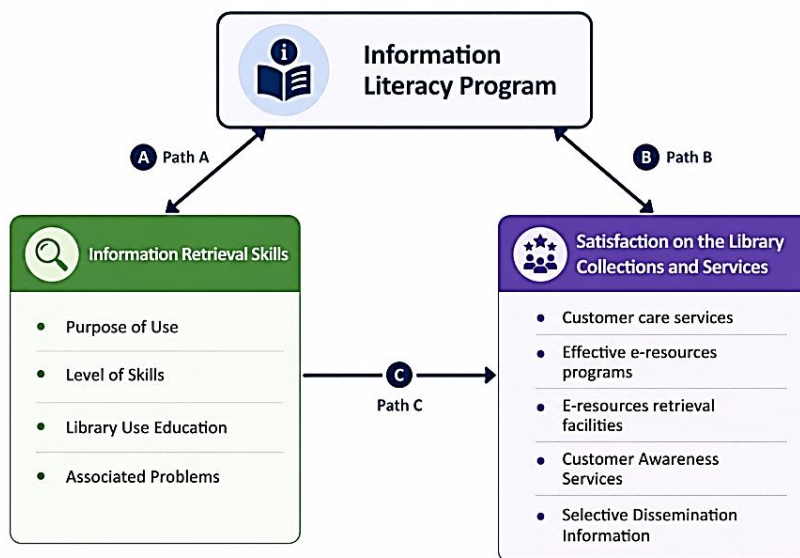


Figure 1. Conceptual framework of the study

The mediating variable can be evaluated based on the instructions provided to the students. The dependent variable, the student's Satisfaction with library collections and services, can be assessed based on the availability of library collections to meet the client's information needs, and on the quality and overall perception of the library, including staff and facilities. On the other hand, the independent variable can be measured by how students locate available information, the information-retrieval tools available, and the resources in the library. The common model used in information retrieval is the Boolean model. It comprises three basic operators: the logical product (AND), the logical sum (OR), and the logical difference (SUM) (Ayse Goker & John Davies, 2009).

II. METHODS

A. Research Respondents

This study is conducted to the four branches of University of Mindanao; UM Tagum College, UM Panabo College, UM Peñaplata College, UM Digos College. University of Mindanao is the largest private and non-secretariat university in Mindanao, Philippines. UM is known for providing quality, affordable and open education. The total population of each campus was collected and to statistically distribute the number of respondents per campus, stratified random sampling was utilized. A total of 300 respondents were included to assess students' information retrieval skills and their satisfaction with the library's collections and services, as mediated by the Information Literacy Program. 30 random students from UM Bansalan College participated in the pilot test to verify the reliability and validity of the research questionnaire. The reliability test using Cronbach's Alpha showed excellent consistency of all items of the research instrument. Part I which is the Information Retrieval Skills obtained an alpha coefficient of 0.922, while the Part II of the research instrument (satisfaction on the library collections and services) obtained 0.948, and the Part III (Information Literacy Program) gained 0.931. All values transcended the recommended threshold of 0.70, thereof the research instrument was considered highly reliable and appropriate for the study.

B. Materials and Instrument

Three adopted questionnaires from published research were utilized to collect information from the respondents. The information retrieval skills questionnaire was adapted from the study of Imam et al. (2019). This tool assessed students' skills. The questionnaire employs a 5-point Likert Scale to measure respondents' level of agreement or disagreement with each statement. The students' Satisfaction with the library collections and services questionnaire from the study of Badmus, L.A. & Yaya, J.A. (2023). Moreover, to assess the information literacy program, a questionnaire adopted from the study by Hamid et al. (2015) was used.

C. Design and Procedure

The data collection process involved a survey questionnaire distributed to selected students from various academic programs, which assessed their information retrieval skills, Satisfaction with library collections and services, and the information literacy program. To ensure that the respondents are genuinely familiar with the library's collections and services, the researcher administered the questionnaire on the library premises and coordinated with librarians to identify qualified student participants. The researcher sought written permission from the institution before data collection. Coordination ensured that ethical standards and institutional protocols were followed. Participation in this study was completely voluntary. Respondents were informed that they have the right to refuse or discontinue their participation at any stage of the data collection process without any negative consequences. All respondents were required to complete the Informed Consent Form attached to the questionnaire before proceeding to answer. For tabulating survey responses, an application such as a spreadsheet was used to organize the data in tabular form, which was then sent to the assigned statistician for further analysis using procedures such as descriptive statistics and the Pearson correlation coefficient and Mediation Analysis to identify patterns and relationships. Descriptive statistics, such as mean and standard deviation, were used to assess students' information retrieval skills and their satisfaction with library services and collections. Additionally, to analyze the relationship between the information

literacy program (independent variable) and their satisfaction with the library collections and services (dependent variable), with information retrieval skills serving as the mediating variable, the Correlation Analysis and Mediation Analysis was used. In this study, the extent to which information retrieval skills of the students are correlated with their satisfaction with the library collections and services, and by exploring the mediating role of the information

retrieval skills, can examine how it influences the relationship between the students' information literacy program and their satisfaction with the library collections and services.

This will help determine whether the increase in information retrieval skills, facilitated by the Information Literacy Program, correlates with the high satisfaction with the library collections and services.

Table 1: Level of Information Retrieval Skills

Indicators	SD	Mean	Descriptive Level
Purpose of Use	0.61	4.32	Very High
Level of Skills	0.65	4.27	Very High
Library Use Education	0.54	4.36	Very High
Associated Problems	0.75	2.72	Moderate
Overall	0.44	3.92	High

In conducting this study, the researcher fulfilled the ethical standards established by the University of Mindanao Ethics Review Committee (UMERC). Under the Protocol Number 2025-504, this research was presented and evaluated. The researcher complied with all required documents, including the consent form and permission to conduct the study. Prior to the study, the researcher provided participants with an informed consent form to ensure they were aware of the study's objectives and processes, and that the Data Privacy Act of 2012 was strictly followed. Participants were free to withdraw from the study without any repercussions. Furthermore, only the researcher distributed and collected the filled questionnaires, which were secured in a locked filing cabinet to ensure confidentiality. The data gathered were handled with integrity, ensuring that the raw data were not altered or manipulated to achieve a favored outcome. Burning or shredding the filled questionnaires was conducted after the consolidation of responses, to destroy the information and prevent its reconstruction.

Associated Problems. The result shows that respondents have a Very High level of Information Retrieval skills in terms of Library Use Education, with the highest mean score of 4.36 and standard deviation of 0.54, Purpose of use, with the mean score of 4.32 and standard deviation of 0.65, and Level of Skills with the mean score of 4.27 and standard deviation of 0.61. Lastly, Associated Problems has a mean score of 2.72; a standard deviation of 0.75, indicating a Moderate Level.

The finding shows that among all indicators, Library Use Education got the highest mean score, which indicates that respondents in Library Use Education helps students access library resources and become well-versed in using the library. Library orientation helps newly enrolled students become familiar with the library and provides awareness of available services and collections that help meet their information needs. An effective library orientation boosts students' confidence and encourages them to use library collections, facilities, and services (Agyeiku, 2022).

III. RESULTS AND DISCUSSION

Level of Information Retrieval Skills

Table 1 presents respondents' levels of information retrieval skills across all indicators: Purpose of Use, Level of Skills, Library Use, Education, and

Level of Satisfaction on the Library Collections and Services

Table 2 shows the level of Satisfaction on the library collections and services. The overall mean score of 4.39 and standard deviation of 0.58 signifies those

respondents has a very high satisfaction level on the library collections and services. All indicators have a very high descriptive level, this means that respondents have consistent positive perceptions on the library collections and services. Effective Orientation Program got the highest mean score of 4.47 with standard deviation of 0.63, followed closely by the Customer Care Services with mean score of 4.45; standard deviation of 0.68. This implies that library users greatly commend the library activity,

services and personnel's assistance. Current Awareness Services had a mean score of 4.40; SD 0.78 and E-resources Retrieval Facilities got 4.36 mean score with standard deviation of 0.68, reflecting that being updated to information and access to electronic resources deeply impact the satisfaction of the students. Moreover, Selective Dissemination of Information got the lowest mean score among five indicators with mean score of 4.30; SD of 0.69 yet it still remains as the very high descriptive level.

Table 2: Level of Satisfaction on the Library Collections and Services

Indicators	SD	Mean	Descriptive Level
Customer Care Services	0.68	4.45	Very High
Effective Orientation Program	0.63	4.47	Very High
E-resources Retrieval Facilities	0.68	4.36	Very High
Current Awareness Services	0.78	4.40	Very High
Selective Dissemination of Information	0.69	4.30	Very High
Overall	0.58	4.39	Very High

The findings suggest that when institutions provide an effective library program, quality customer service, and information about current trends, equipment for online resources can generally contribute to high satisfaction on the library collections and services. For example, According to Padohinog & Ariarte (2024), enhanced library services greatly impact the satisfaction of the users and its loyalty to utilize library services. Users are more likely to adopt favorable attitudes and keep utilizing library resources on a regular basis when they believe that services like information access, staff assistance, and learning support are effective. This aligns that very high descriptive level observed in this study mirrored the effectiveness of the delivery of library services. The majority of the respondents to a study evaluating the user's satisfaction on the library resources conveyed a high level of satisfaction in terms of available services, facilities and assistance from library staff. Positive user perceptions and efficient information access are greatly influenced by well-organized collections and responsive library services (Fagyan, et.al, 2023). These findings align with the present results, in which respondents rated the library's overall collections and services as "very high," indicating that users appreciate the availability and usability of the library's resources.

Level of Information Literacy Program

Table 3 displays the level of the Information Literacy Program (ILP). With a very high level of agreement, respondents perceived the effectiveness of the information literacy program. The statement "information literacy programs are effective" got the highest mean score of 4.50 with standard deviation of 0.69, this means that respondents strongly agreed that overall effectiveness of ILP. This was followed by "I am satisfied with the Information Literacy Program provided by our library" with mean score =of 4.44, standard deviation of 0.74 and "ILP should be continuously" and "I recommend ILP for my friends" got the same mean score of 4.43 indicating high Satisfaction and support for sustaining the program. Respondents also agreed that the ILP enhanced their searching skills (M = 4.41, SD = 0.80), provided informative content (M = 4.39, SD = 0.77), and helped them use digital library resources, the OPAC, and other services independently (means ranging from 4.31 to 4.33). The comparatively low standard deviation scores indicate consistency in responses. Overall, the findings suggest that the Information Literacy Program is highly effective, beneficial, and well-received by respondents.

Table 3: Level of Information Literacy Program

Indicators	SD	Mean	Descriptive Level
ILP helped me to increase my searching skills	0.80	4.41	Very High
Trainees of ILP are knowledgeable and friendly	0.76	4.35	Very High
ILP should be continuously	0.73	4.43	Very High
ILP helped me use the digital library	0.79	4.31	Very High
ILP helped in class	0.75	4.32	Very High
ILP enabled me to use the library's Online Public Access Catalog (OPAC)	0.82	4.31	Very High
The contents of the information literacy program are informative	0.77	4.39	Very High
ILP enabled me to use library resources and services independently	0.78	4.31	Very High
Viewed of ILPs are comfortable	0.76	4.33	Very High
I am satisfied with the Information Literacy Program provided by our library	0.74	4.44	Very High
I recommend ILP for my friends	0.76	4.43	Very High
Information literacy programs are effective	0.69	4.56	Very High
Overall	0.61	4.38	Very High

IV. UNITS

Correlation Analysis of Variables

The correlation analysis examined the relationships among Information Retrieval Skills, Information Literacy Program (ILP), and User Satisfaction. The results exhibit strong statistically significant positive relationships among the variables, indicating that improvements in information retrieval competencies and in information literacy initiatives are associated with higher levels of user satisfaction.

The first finding reveals a significant positive relationship between Information Retrieval Skills and Satisfaction ($r = .630, p = .000$). The correlation coefficient indicates a moderately strong relationship, suggesting that individuals with higher levels of information retrieval skills tend to experience greater satisfaction with using library resources and services. Since the p-value is less than the 0.05 level of significance, the null hypothesis is rejected. This result implies that the ability to search, evaluate, and retrieve information effectively contributes significantly to user satisfaction. This finding is supported by Solijonoy's (2025) study, which reported that students with stronger information-seeking competencies are more confident and satisfied when navigating academic resources. Similarly, Rasheed & Ahmed (2024) found that information retrieval proficiency

influences users' perceptions of the usefulness and efficiency of library services, ultimately affecting satisfaction levels.

The second result shows a significant positive relationship between Information Retrieval Skills and the Information Literacy Program ($r = .690, p = .000$). The coefficient suggests a strong relationship, indicating that participation in or exposure to information literacy programs is closely associated with the development of users' information retrieval skills. With a p-value of .000, the null hypothesis is rejected, confirming that the relationship is statistically significant. This suggests that structured information literacy instruction plays a critical role in enhancing users' ability to locate, evaluate, and use information effectively. This finding aligns with Chaliha et al. (2024), who emphasized that well-designed information literacy programs significantly improve students' research and information-seeking skills. The third finding indicates a very strong positive relationship between the Information Literacy Program and Satisfaction ($r = .830, p = .000$). This result suggests that the effectiveness of information literacy programs greatly influences users' satisfaction with library services and resources. Since the p-value is below the significance level, the null hypothesis is rejected. The very high correlation coefficient implies

that users who perceive the information literacy program as helpful, relevant, and effective are more likely to report higher levels of Satisfaction. This finding supports the work of Liu (2025), who highlighted that information literacy instruction enhances users' ability to use information resources effectively, thereby improving their overall experience with library services. The overall findings demonstrate that information retrieval skills and information literacy programs play an important role in shaping

user satisfaction. The results suggest that strengthening information literacy initiatives and improving users' information retrieval competencies can lead to better user experiences and higher satisfaction with library resources and services.

These findings highlight the importance of continuously developing and enhancing information literacy programs in academic libraries to support users' research and learning needs.

Table 4: Correlation Analysis of Variables

Pair	Variables	Correlation Coefficient (r)	p-value	Decision
IV and DV	Information Retrieval Skills and Satisfaction on the Library Collections and Services	0.650**	0.000	Reject
IV and MV	Information Retrieval Skills and Information Literacy Program	0.690**	0.000	Reject
MV and DV	Information Literacy Program and Satisfaction on the Library Collections and Services	0.830**	0.000	Reject

Mediation Analysis of Variables

Table 5: Regression Analysis Showing the Influence of Information Retrieval Skills on Satisfaction with Library Collections and Mediated by Information Literacy Program

Step	Path	B	S.E.	β
1	c	0.832	0.059	0.630***
2	a	0.953	0.058	0.690***
3	b	0.722	0.042	0.754***
3	c'	0.144	0.058	0.109*

Figure 1 illustrates the mediation model examining the relationships among Information Retrieval Skills, the Information Literacy Program, and Satisfaction with Library Collections. The model demonstrates both the direct and indirect pathways through which information retrieval skills influence users' satisfaction with the library's collections and services.

The analysis shows that Information Retrieval Skills have a strong positive effect on Satisfaction with Library Collections, with a total effect coefficient of 0.832 (path c). This indicates that individuals who possess stronger abilities in locating, evaluating, and retrieving information tend to report higher satisfaction with the library's resources. Users who are more skilled at information searching are better able to

make the most of available resources, which enhances their overall experience with the library.

Furthermore, the figure shows that Information Retrieval Skills significantly influence participation in or engagement with the Information Literacy Program, with a coefficient of 0.953 (path a). This suggests that individuals with stronger retrieval abilities are more likely to appreciate, use, or benefit from the library's structured information literacy initiatives. These programs help reinforce users' existing skills and provide additional strategies for efficient information searching. The Information Literacy Program also has a strong positive effect on Satisfaction with Library Collections, as indicated by the coefficient of 0.722 (path b). This relationship highlights the important role of information literacy

instruction in helping users understand how to effectively access and use library databases, catalogs, and digital resources. By improving users' familiarity

with library systems, the program enhances their ability to locate relevant materials and increases their overall satisfaction with the library's services.

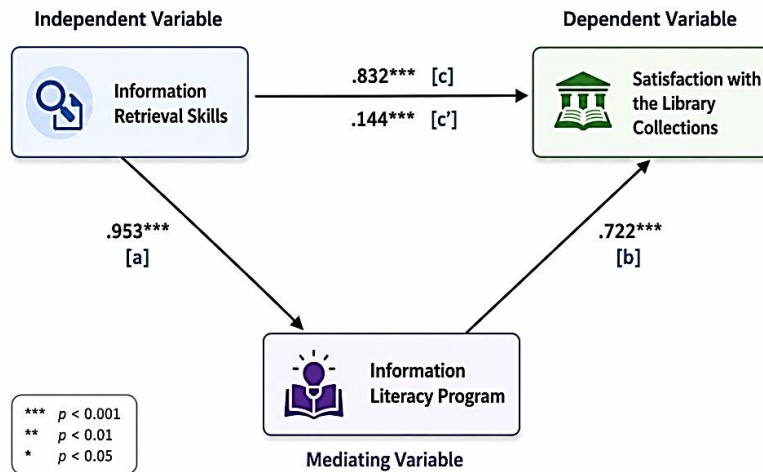


Figure 2. Results of the Mediation Computation

When the Information Literacy Program is introduced as a mediating variable, the direct effect of Information Retrieval Skills on Satisfaction with Library Collections decreases from 0.832 to 0.144 (path c'), although it remains statistically significant. This reduction in the coefficient indicates partial mediation, meaning that the Information Literacy Program explains a substantial portion of the relationship between retrieval skills and Satisfaction. In other words, while users' skills independently contribute to their Satisfaction, the information literacy program strengthens this relationship by improving users' ability to utilize library resources effectively.

The mediation analysis examined the role of the Information Literacy Program (ILP) as a mediator in the relationship between Information Retrieval Skills and User Satisfaction. The results show that the mediation process follows the standard causal steps. In Step 1, the total effect (path c) of Information Retrieval Skills on Satisfaction is significant ($B = .832$, $S.E. = .059$, $\beta = .630^{***}$), indicating that higher information retrieval competence significantly increases user satisfaction. This finding implies that individuals who can effectively locate, access, and evaluate information tend to have more positive

experiences with library services and information systems. The strong relationship confirms that information retrieval ability is a key factor influencing users' perceptions of library effectiveness and service quality. This result is consistent with Barfi et al. (2023), who reported that students with stronger information searching skills experience fewer difficulties in the research process and consequently demonstrate higher Satisfaction with academic library resources. Similarly, Thakur (2025) found that users with greater information competency are more confident in using library tools and perceive library services as more valuable and useful.

In Step 2, the analysis shows that Information Retrieval Skills significantly predict the Information Literacy Program (path a) with $B = .953$, $S.E. = .058$, and $\beta = .690^{***}$. This indicates that individuals with stronger retrieval skills tend to engage more effectively with information literacy instruction or benefit more from such programs. The significant relationship highlights ILP's role as an instructional framework that supports and strengthens users' research and information management capabilities. Information literacy programs are designed to teach users how to search databases, evaluate sources, and ethically use information, which naturally

complements and enhances retrieval skills. The finding aligns with Mwiiyale et al. (2025), who emphasized that structured information literacy instruction significantly improves students' ability to search and retrieve information efficiently. Likewise, Thakur et al. (2025) found that information literacy training improves users' information-seeking behaviors and enhances information retrieval competencies.

In Step 3, the mediator Information Literacy Program has a significant effect on Satisfaction (path b) with $B = .722$, $S.E. = .042$, and $\beta = .754^{***}$. This strong standardized coefficient indicates that ILP plays a crucial role in increasing users' Satisfaction with library resources and services. The finding suggests that users who perceive information literacy instruction as effective, accessible, and relevant are more likely to report higher satisfaction levels. Information literacy programs not only teach technical search skills but also empower users with critical thinking and independent research skills, thereby enhancing their overall experience when interacting with information systems. This result supports et al. (2025), who argued that information literacy programs improve learning outcomes and enhance user engagement with library services. In addition, Ahammad et al. (2025) emphasized that information literacy instruction significantly enhances students' research confidence, which positively influences their Satisfaction with academic libraries and support services. Similarly, Zhao et al. (2023) highlighted that information literacy instruction is essential for helping students navigate complex information environments, thereby improving their academic success and overall Satisfaction with library resources.

Finally, in Step 4, when the mediator is included in the model, the direct effect (c') of Information Retrieval Skills on Satisfaction decreases but remains statistically significant ($B = .144$, $S.E. = .058$, $\beta = .109^*$). The reduction from the original $\beta = .630$ to $\beta = .109$ indicates partial mediation. This means that Information Retrieval Skills influence Satisfaction both directly and indirectly through the Information Literacy Program. The ILP explains a substantial portion of how retrieval skills translate into higher

Satisfaction, but retrieval skills themselves still contribute independently to Satisfaction. This suggests that while users benefit from formal information literacy instruction, their inherent or previously developed retrieval abilities also directly shape their Satisfaction with library services. The presence of partial mediation confirms that both personal competencies and institutional programs jointly contribute to user satisfaction.

These findings are consistent with the study by Zhao et al. (2023), which argued that information literacy functions as a learning framework that connects users' skills with their ability to utilize information environments effectively. Similarly, Ahammad et al. (2025) explained that information literacy instruction enhances users' understanding of information systems, thereby improving both research performance and Satisfaction. Furthermore, Agyeiku (2022). found that students who participate in well-designed information literacy programs demonstrate higher levels of engagement, confidence, and Satisfaction in their academic information-seeking activities, while Mughari et al. (2025) noted that academic libraries play a critical role in developing information literacy competencies that enhance users' experiences and Satisfaction with information services

IV. CONCLUSION AND RECOMMENDATION

The findings of the study reveal that respondents demonstrate a high level of information retrieval skills, particularly in library use education, purpose of use, and level of skills, while associated problems were only moderately experienced. This indicates that most users are already capable of effectively locating and utilizing library resources, likely due to exposure to library orientation and instructional activities. The high ratings in library use education suggest that orientation and training programs significantly help users understand how to navigate library systems and services. As a result, users can use library resources efficiently and confidently. Regarding Satisfaction with library collections and services, the results show a very high level of Satisfaction among respondents. All service indicators, including customer care services, effective orientation programs, e-resources retrieval facilities, current awareness services, and

selective dissemination of information, received very high ratings. These results indicate that the library is effectively meeting its users' information needs through accessible resources, responsive staff assistance, and well-organized services. The high satisfaction level also suggests that the library provides a supportive learning environment that encourages users to engage with available resources and services continually.

Similarly, the Information Literacy Program (ILP) was evaluated as very effective, with respondents strongly agreeing that it enhances search skills, supports the use of digital library resources, and enables independent access to information. The high ratings for the program's Effectiveness and the recommendation of ILP to others highlight the program's importance in strengthening users' research capabilities and promoting independent learning. The findings illustrate that ILP plays a crucial role in equipping users with the required skills to navigate complex information settings. The correlation analysis further revealed strong and statistically significant relationships among information retrieval skills, the information literacy program, and user satisfaction. Information retrieval skills were positively associated with satisfaction, indicating that users who possess stronger searching and evaluation abilities tend to experience greater satisfaction with library collections and services. Likewise, a strong relationship was found between information retrieval skills and the information literacy program, suggesting that ILP contributes significantly to the development of users' research competencies. The strongest relationship was observed between the information literacy program and Satisfaction, demonstrating that effective literacy instruction greatly enhances users' experiences with library resources.

Based on the conclusions of the study, the following recommendations are proposed:

First, since respondents demonstrated a high level of information retrieval skills, particularly in library use education, the purpose of use, and skill level, libraries should continue strengthening their orientation and instructional programs to sustain and further enhance these competencies. Regular library orientation

sessions, hands-on workshops, and guided tutorials should be provided, especially for new students and first-time users, to ensure that they fully understand how to access and utilize library resources. At the same time, librarians should develop additional support mechanisms, such as online tutorials, research guides, and consultation services, to address the moderate level of associated problems encountered by some users when retrieving information.

Second, given the very high level of Satisfaction with library collections and services, the library administration should maintain and continuously improve the quality of its services and resources. Efforts should be made to sustain excellent customer care services, efficient orientation programs, and accessible facilities for e-resource retrieval. The library may also expand its digital collections, improve current awareness services, and strengthen selective dissemination of information to ensure users remain up to date with relevant academic resources. Continuous feedback mechanisms, such as regular user satisfaction surveys and suggestion systems, should also be implemented to monitor user needs and guide service improvement.

Third, since the Information Literacy Program (ILP) was found to be highly effective, the library should institutionalize and expand its implementation. These programs may be integrated into the academic curriculum through collaboration between librarians and faculty, ensuring that students consistently develop essential research and information-evaluation skills throughout their academic journey. Additionally, the library should offer advanced information literacy workshops focused on database searching, digital resource use, citation management, and the ethical use of information to strengthen users' independent research capabilities further.

Finally, considering the strong and significant relationships among information retrieval skills, the information literacy program, and user satisfaction, the library should continue investing in comprehensive information literacy initiatives as a strategic approach to improving user experience. Strengthening ILP initiatives can enhance users' research competencies,

thereby increasing satisfaction with library services and collections. Libraries should therefore promote greater participation in these programs through awareness campaigns, collaborations with academic departments, and the use of digital learning platforms to ensure wider access and greater user engagement.

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