

## Information Literacy Skills of Librarians and Library Service Quality in Private Basic Education Institutions: The Mediating Role of Electronic Information Environment

Rosa Mae B. Perales and Estela R. Dequito, DM  
University of Mindanao, Philippines

### ABSTRACT

The study aimed to determine if the electronic information environment significantly mediates the relationship between the information literacy skills of librarians and library service quality in private basic education institutions in Davao City. This study utilized a non-experimental quantitative design, employing the descriptive-correlation method and mediation. An adapted survey questionnaire, validated by experts and pilot-tested, was used for data collection. A total of 329 teaching and non-teaching personnel were selected through stratified sampling. The statistical techniques employed to analyze and interpret the data included mean, product-moment correlation, and path analysis. The study's findings indicated a very high level of information literacy skills, library service quality, and electronic information environment. Furthermore, the results revealed a significant relationship among the three variables. It was established that the electronic information environment partially mediates the relationship between information literacy skills and library service quality.

**Keywords:** library information science, information literacy skills, library service quality, electronic information environment, mediation analysis, Philippines

### INTRODUCTION

Libraries are under tremendous pressure to demonstrate their value in serving the information needs of their patrons (Mustisya & Omwoyo, 2020). Maintaining the quality of library services has proven challenging for libraries. This is because libraries hold a role in facilitating information and knowledge development as well as supporting teaching and research efforts. The study by Sajna and Mohamed (2018) revealed that all four ICAR libraries have negative gap scores across all dimensions, which unquestionably indicates that the service quality falls short of user expectations. The highest gap exists in the dimension of library service, while the lowest gap exists in the dimension of library staff. This could be due to outdated technology and a need for more information about the library's numerous services. Consequently, user orientation programs, seminars, workshops, etc., should be required. In addition, budgetary limits are the most crucial obstacle libraries confront while providing quality services.

Additionally, Zhang et al. (2017) mentioned that digital information technology is widely used in many libraries with the rapid advancement of technology. Presently, innumerable electronic equipment has been applied to the library simultaneously, and many new factors influence the library's service quality. The reformation of information technology of library service quality has broken down geographical boundaries. In order to fully utilize the potential of technology, it may be necessary to provide services and improve the ones already in place. By listening to patrons and seeking their feedback, libraries can better understand how their services are perceived from a user's perspective (Cristobal, 2018).

Furthermore, Kale (2014) states that the information explosion poses a considerable challenge in locating the most relevant information about the task due to rapid technological advancement and globalization. Libraries are developing and implementing various workshop programs to make the user information literate. Developing information literacy skills is

critical; learners can use the skills they learned in natural settings. Conversely, users who cannot reciprocate information literacy skills are guaranteed to be included in the rapid changes due to the advancement in the information and technological environment.

Assessment of library service quality is considered a management tool designed to determine how the library serves the demands and expectations of the patrons efficiently and effectively. It also points out the strengths and weaknesses of its services to develop ways of maintaining and improving the delivery of quality library services. Likewise, some factors is the prerequisite essential for measuring library service quality, such as the currency and relevance of information resources, whether arranged adequately on shelves, the catalog, and other searching tools are being used in providing access to the collections, the attitude and ability of the staff to utilize the facilities available rendering services to the users and many more (Adam, 2017). Indeed, Hossain (2016) also stated that evaluating the success rate of target services provided and offering library-quality service to users is essential to the libraries. Esse (2014) also mentioned that learning to use a library and possessing information literacy skills are vital elements of education. The money spent educating and training the users is an excellent investment if it increases the utilization and maximizes the library rather than buying literature and carefully storing it if not used.

Though some studies correlate information literacy and library service quality, the researcher has yet to come across a study that assesses the relationship in determining the electronic information environment's mediation on librarians' information literacy skills and library service quality in private basic education institutions in Davao City. This has made the researcher look for factors that can assess the quality of library services. It is essential to consider the concept of information literacy, which involves skills that empower individuals to identify their information requirements efficiently, locate and retrieve information, assess its credibility and significance, and effectively use it. This plays a role in evaluating the effectiveness of library services, particularly with the widespread use of technology and the digital era that has significantly amplified our dependence on it. In other words, the researcher intended to determine whether the electronic information environment has a mediating role in the information literacy skills of librarians and library service quality in private basic education institutions. This only shows that the present study shall make an essential contribution and better understand library service quality concerning information literacy skills and the electronic information environment. The current research's conduct is necessary to further explore the issue mentioned above.

## LITERATURE REVIEW

The reviews, ideas, insights, theories, concepts, and other related literature views could significantly contribute to the conduct and result of the study. The independent variable is information literacy skills (Kurbanoglu et al., 2006). The dependent variable is library service quality, measured by service effect, information control, and library as a place using LIBQUAL<sup>+</sup> (ARL, 2003), and the mediating variable is the electronic information environment (Ani, 2013). In this section, we will explore the studies conducted on three crucial factors: the connection between the skills of librarians in information literacy and the quality of services offered by libraries, the competence of librarians in information literacy within the context of electronic information resources, and lastly how the electronic information environment affects the quality of library services.

According to studies by Urquhart and Turner (2016), LIBQUAL<sup>+TM</sup> and other services' quality enhancement or creative benchmarking is primarily on improving how library services are delivered. Thus, it is not easy to identify what is essential to users of library services. Still, the customer value discovery process does help library managers foresee how they are performing from the users' perspective and how the information literacy skills

program helped improve educational outcomes. Furthermore, in the study of Jackson (2017), due to the advent of the information age, libraries have been the majority advocates for accepting information literacy as a vital skill, and library service quality has often been linked to the viewpoint of the parent institution. Suppose libraries certainly influence the institutions' quality significantly. In that case, library services should be concerned with a vested interest in the quality and the importance of information skills for which libraries have been striving.

The study of Choudhury et al. (2008) stated that the challenges faced by libraries are well documented, and a wealth of literature supports this fact. The Association of Research Libraries (ARL) has highlighted LIBQUAL+ as one of the most successful global applications in the library field. It meets a requirement and has dramatically improved the library's understanding of user expectations when it comes to service quality. Moreover, there is an increasing need to grasp and assess information literacy skills comprehensively, evidenced by the adopting of the Standardized Assessment of Information Literacy Skills tool (SAILS).

As Fong Li et al. (2007) studied, the importance of teaching library visitors about information literacy is increasing because of digital resources and the growing reliance on the internet for information. Nowadays, many students rely heavily on search engines like Google for their research, often ignoring libraries' abundance of high-quality resources. This situation challenges librarians who work in reference services as they now have to take on a more educational role. They must guide library users toward print and online sources and educate them about the significance of evaluating web resources. Librarians in reference services must shift their focus from providing technical help to promoting user education and assisting patrons in developing information literacy skills to recognize when they need information effectively, search for it, evaluate its reliability, and apply it appropriately. Ultimately, library users should be equipped with the information literacy skills to meet the demands of the twenty-first century.

The study of Israel and Nsibirwa (2018) states that understanding the intricacies of electronic information resources is crucial for developing the ability to use them effectively and efficiently. The research has established a connection between information literacy skills and the effective utilization of electronic information resources. Consequently, universities should consider implementing initiatives like information literacy certificates, workshops, seminars, and similar programs. These efforts aim to enhance users' information literacy skills, ensuring they can make the most of electronic information resources efficiently and effectively.

Leeder (2014) studied that the students' reliance on the internet, their general lack of information literacy skills, inadequate critical assessment practices, and reliable information literacy skills training must have a new educational method to teach practical information literacy skills. Specifically, there is a need for information literacy skills training customized to the online information environment and relevant to today's students' research habits, where they frequently do their research.

Furthermore, Adeleke and Emeahara (2016) also found that the limited use of electronic information, especially in full-text databases, is associated with a need for more proficiency in search techniques among most postgraduate students when accessing various electronic information sources. In simpler terms, there was a notable correlation between information literacy skills and the utilization of electronic information resources. In this era of digital advancement, the need for more information literacy skills among postgraduate students is attributed to the discouragement of research-driven inquiries using electronic information resources. Additionally, the study of Akpovire et al. (2019) studies the role of information literacy skills on medical students' use of information resources in Lagos state.

The study found that print newspapers, textbooks, and electronic information resources were frequently unused. Therefore, the study infers that sufficient attention should be given to information literacy skills to guarantee that library users possess vital skills essential for information search.

Library experts and academics are just starting to develop assessment methods and strategies for digital libraries and online services and resources, particularly when considering the perspective of users. Assessing online services and resources requires the same dedication to assessment and learning from library management, staff, and researchers as evaluating conventional library services and resources. Indeed, electronic information services require libraries to develop new metrics, methodologies, and procedures for determining the quality of services they provide, even if the approaches use existing evaluation frameworks (Jamali & Tooranloo, 2009). Libraries will be automated and fight for survival in the current digital era. On the one hand, libraries are compelled to incorporate technological developments while the needs of their patrons are evolving swiftly. Now, users are so knowledgeable that they want their desired information promptly and accurately. Users demand quality library services, mainly electronic or digital (Partap, 2019).

In the study of Salauddin and Kumar (2020), the library is the institution's heart, intended to purify with the information resources and services that it may assume the organization's soul. The library system is equally as significant to the students and faculty. The electronic/digital materials and assets trend will relate between users and the library and save the user's time. Thus, the latest technology and advancement require extensive care from the library system. Better service to the library mesh satisfaction with the library service quality, and the users will take advantage of continuing to improve the library.

Meanwhile, as Mahmood et al. (2020) studied, library service quality is one of the most significant markers of an institution's excellent education provision. The effectiveness of a library is measured by its ability to meet the needs of all its patrons. In developed nations, most library services relating to library personnel, stock, electronic information services, and physical library facilities are provided in libraries. However, these services have been offered to a different extent in emerging nations than in wealthy countries.

Additionally, as a service organization, user satisfaction is of utmost importance. The current scenario of human growth, facilitated and driven by information and communication technology (ICT), necessitates that all components (collection and service) must be considered when evaluating the service quality of a library. Since the founding of libraries, all aspects of libraries and librarianship have changed continually. The past is preserved, and the future is created through libraries. Similarly, a library is regarded as a system for the same reason, and the management of that system is a significant matter. As a service organization, the library must devise efficient system evaluation methods. The evaluation of a library is a system management instrument. In the past, libraries were assessed solely based on the number of their collections and the size of the library. The current state of human development, aided and driven by electronic information, necessitates considering other factors such as service variety, service competency, and the facilities provided when determining library service quality (Varghese & Thirunavukkarasu, 2020).

Furthermore, Kumar and Mahajan (2019) revealed that libraries have changed due to various factors, such as the digital revolution, increased access to electronic information resources, diverse user requirements, higher user expectations, and the unpredictable nature of competition in the information age. As a result, librarians need to adopt methods for assessing the quality of library services alongside traditional approaches. In addition, as Nyakwebwa et al. (2022) studied, global libraries aim to meet their patrons' requirements in this dynamic and inventive environment. Along with academic institutions, they have existed since the dawn of time as indispensable components of scholarly endeavors. There is a

significant body of empirical research on evaluating the quality of library services and measuring customer satisfaction, although these findings often need to be revised. Additionally, the digital era is transforming how information is created and shared, focusing on providing electronic information services. To remain pertinent, libraries must embrace emerging technologies and establish themselves as vital educational institutions where services are continually evolving and improving to cater to the diverse requirements of all their patrons.

Nevertheless, in the study of Baada et al. (2019), the result showed that library users were not satisfied with the quality of the library services and depth of equipment, such a convenient environment for learning, internet connection, and computers also the existing library materials such as print and electronic information resources. The most significant distress was the unavailability of internet connection and electronic information collection. Additionally, the study of Agboola et al. (2019) revealed that the library collection in terms of resources is adequate; books and newspapers are highly accessible; however, Newspapers are not being used. Electronic journals were highly utilized. The study also revealed that most students used a personal modem for internet service. In terms of satisfaction with the library service quality, the student was dissatisfied with the accessibility to electronic databases and the timeliness of the information. Lastly, the way information is being disseminated to users.

On the other hand, the study by Yahaya (2018) found that most undergraduate students discovered that their ability to navigate information effectively played a role in how they used electronic information resources. Likewise, the research revealed that most undergraduates turn to electronic information resources when completing assignments and seek academic materials through personal searches. Furthermore, the study observed that the administration provides essential resources such as suitable computer hardware, software, and a reliable communication network to facilitate usage and enhance internet connectivity. Lastly, the research unveiled a significant connection between computer self-efficacy and information literacy skills concerning using electronic information resources.

The present study is anchored on the proposition of Durodolu (2017) that information literacy is essential to the quality of library services, especially in the steadfast transformation of the electronically based information resources used in the academic environment, the knowledge of which will develop the provided service and draw the attention of the academic community to the library. Additionally, it further asserts that information literacy skills have become a strategic instrument for 21<sup>st</sup>-century survival, especially in libraries that depend on librarians' skills to expose them to quality information that can assist teaching, learning, and curriculum development.

Another proposition that supports this study is by Fong Li et al. (2007), who stated that digital natives are used to being constantly connected via phone and the internet. When they need information with little tolerance for delay, they may be unaware of the information available through libraries' electronic resources, how it is arranged and retrieved, and how the quality of data can meet their information needs—typing a search term and using the first few results as authoritative sources. The first few results in the list may not be the most relevant or authoritative. Using web-based technologies to encourage young people to learn actively online is critical. Therefore, teaching information literacy is essential for a librarian's job. To effectively interact with the information using information sources in making a rational decision. The user can determine which provides the better quality of library services by the concerned library.

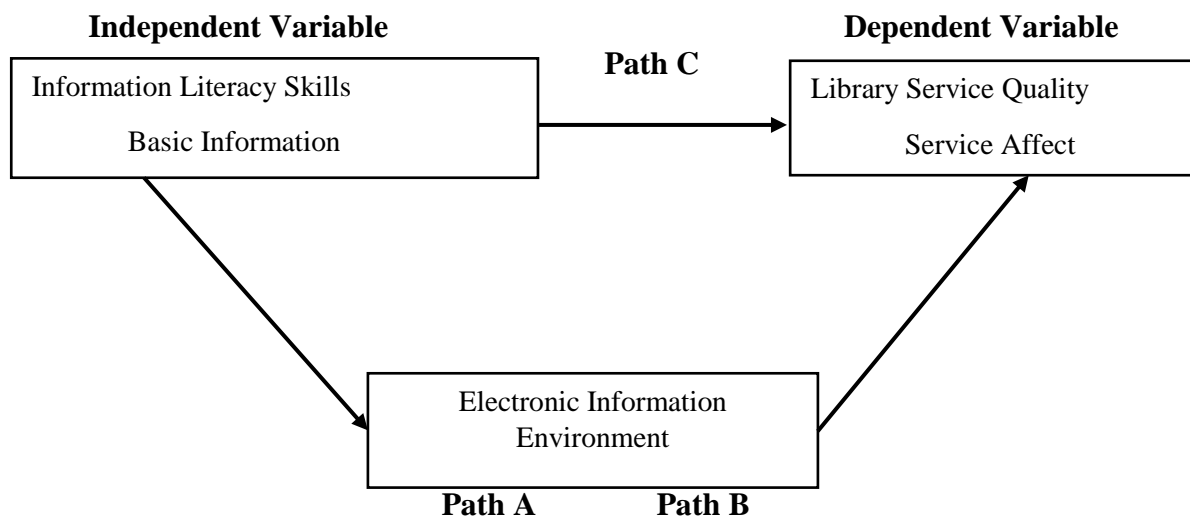
Moreover, the study is anchored on the 8Ws Information Literacy (IL) Model developed by Annette Lamb in the early 1990s. It is an eight-phase model for web-based and community-based learning. A project and community-based learning environment involve

wondering about a subject, wiggling through information, and weaving elements together. This model explains and describes eight phases of information inquiry skills that must be developed in an electronic environment. (Swapna & Biradar, 2017). The student's role is the problem solver, critical thinker, creator, collaborator, and communicator; the teacher/librarian's role is to guide and facilitate, and the role of technology provides tools for thinking, organizing, analyzing, and communicating.

In addition, the study is also supported by Gündüzalp (2021), who indicated that today's environment allows access to information from an endless number of sources, as information is a competitive aspect that constantly changes. The emergence of electronic information resources, including computers, CD-ROM databases, the internet, smartphones, social media, and traditional media, enables swift access to required information. The amount and accessibility of information do not imply that individuals can efficiently use it. It has become one of the most critical requirements of our time to understand whether the vast amount of information obtained is reliable and that the individual can use it effectively, as well as the necessary skills to transfer this knowledge, which means that information literacy skills and digital world emerge at this point.

Moreover, another proposition supporting this study is Partap (2019) that the trend has shifted dramatically due to the impact of information and communication technology, which has affected the way library services quality is provided. Every information and resource is collected, handled, and accessed digitally in today's electronic environment. Libraries must transition from manual to automated operations. The internet plays a critical role in changing our way of life. Users expect and demand high-quality library services in the quickest amount of time feasible, particularly in electronic or digital form.

The study's conceptual framework is shown in Figure 1, which presents the study's variables. In this research, the independent variable centers around the Information Literacy Skills possessed by librarians, which are assessed through three categories: intermediate, basic, and advanced information literacy skills. *Intermediate Information Literacy Skills* include recognizing, choosing, interpreting, communicating information, and drawing lessons from experience. *Basic Information Literacy Skills* involve the capacity to find and utilize information. *Advanced Information Literacy Skills* encompass the integration and assessment of data, the problem-solving process, and resulting outcomes (Kurbanoglu, 2006). The study's dependent variable is the Library Service Quality using the LIBQUAL+ (ARL, 2003) with three indicators: service affect, information control, and library as place. *Service Affect* relates to the users' interaction with library staff, especially regarding aspects of care and competence. *Information Control* pertains to how users perceive the volume and availability of information sources. *Library as Place* the physical characteristics of the library concerning their convenience and inviting spaces for individual study and workgroup.



**Figure 1. Conceptual Paradigm of the Study**

The mediating factor is the *Electronic Information Environment*, which encompasses a range of information and communication technology (ICT) services accessible within the library, faculty/department, and official office. Ensuring equal access to contemporary research tools, such as information and communication technologies (ICTs), and providing exceptionally dependable internet connectivity contribute to improved information management, consequently leading to a relative increase in usage (Ani, 2013).

Some key terminology in this research is operationally defined to give the reader a better understanding. Information literacy skills are defined as the abilities of librarians to identify information needs, locate and access the required information, and evaluate, organize, and utilize the knowledge acquired. Information literacy encompasses individuals' competencies to effectively engage with information resources, enabling them to make well-informed decisions. Library service quality pertains to the caliber of services the library provides, encompassing elements like service demeanor, information management, and the physical library environment. In this study, the electronic information environment refers to the array of information and communication technology (ICT) services accessible to facilitate efficient information access and utilization. This primarily involves the accessibility and use of electronic resources through computers, the internet, online platforms, and digital networks. Lastly, electronic resources denote materials presented in digital form and accessible electronically. Examples include e-journals, e-books, online databases, and digital file formats like PDF and webpages (e.g., .htm, .html, .asp).

This study aims to determine the electronic information environment's mediating role on librarians' information literacy skills and library service quality in private basic education institutions. Specifically, the study will seek to answer the questions. First, to describe librarians' level of information literacy skills in terms of Intermediate Information Literacy Skills, Basic Information Literacy Skills, and Advanced Information Literacy Skills. Second, to determine the level of library service quality in terms of Service Affect, Information Control, and Library as Place. Third, to ascertain the level of the electronic information environment. Fourth, to determine the significant relationship between the information literacy skills of librarians and library service quality in private basic education institutions; the information literacy skills of librarians and electronic information environment; and the electronic information and library service quality in private basic education institutions. Fifth, to determine if the electronic information environment significantly mediates the information literacy skills of librarians and library service quality in private basic education institutions.

Besides, hypotheses are also identified in this study. There is no significant relationship between the information literacy of librarians and library service quality, the information literacy skills of librarians and the electronic information environment, and the electronic information environment and library service quality. Lastly, the electronic information environment has no mediating effect on the relationship between the information literacy skills of librarians and library service quality in private basic education institutions.

This research offers significant contributions to the realm of information literacy studies by investigating the skillsets possessed by librarians. These skills hold pivotal importance in shaping the standard of library services, particularly in the contemporary digital era, where adeptness in information and communication technology (ICT) is vital for accessing and harnessing electronic information. By examining the correlation between information literacy skills and the quality of library services, this study intends to give library managers worldwide a more profound comprehension of this relationship.

The study highlights the significance of accessing and effectively utilizing ICTs and electronic information resources in libraries. It aims to broaden the knowledge of library managers, equipping them with the necessary understanding to make informed decisions related to library service quality. This knowledge can be particularly valuable for decision-makers in educational institutions such as schools, colleges, and universities. Additionally, the social value of this research extends beyond library managers. It could benefit academic staff, administrators, and other stakeholders involved in the education sector. By comprehending the rapidly changing information environment resulting from ICT innovations and the availability of electronic information resources, these individuals can better appreciate the impact of these advancements on the delivery of high-quality library services. Moreover, recognizing the crucial role played by information literacy skills in library management can facilitate the development and enhancement of these skills among librarians.

Ultimately, this study aims to serve as a blueprint and benchmark for future researchers interested in exploring similar topics within information literacy. It provides a foundation for further investigations, advancing knowledge and understanding.

## **METHODOLOGY**

This section provides an overview of the research respondents, materials and instruments, design, and procedure implemented in the study.

### **Research Respondents**

This study's respondents were comprised of teaching personnel and non-teaching personnel employed in various private basic education institutions in Davao City. Seven of the eleven selected schools participated, resulting in 329 respondent survey forms being answered and retrieved. The researcher utilized a stratified random sampling method for this study.

The population for this study consisted of teaching personnel, defined as employees involved in instructional functions within the institution, including faculty members and staff with teaching responsibilities. On the other hand, non-teaching personnel were defined as employees who perform other essential services for the academic institution, such as librarians, administrators, clerical staff, and academic and non-academic support services personnel. Individuals currently undergoing internship courses, school cleaning aides, and teaching and non-teaching personnel from public schools outside of Davao City were excluded from the study.



## Materials and Instrument

The study made use of adapted and modified survey questionnaires from various researchers. This questionnaire consisted of three parts: Information Literacy Skills of Librarians, Library Service Quality, and Electronic Information Environment. Five experts reviewed the questionnaire and provided suggestions and validations to ensure its validity. The questionnaire employed a five-point Likert scale, with five representing the highest descriptive level and one representing the lowest. This scale was used to interpret the mean levels of the variables. A mean range of 4.20 to 5.00 is equivalent to a very high descriptive level and is always manifested. At the same time, 3.40 to 4.19 is equivalent to a high descriptive level, which means it is oftentimes manifested. In addition, a mean range of 2.60 to 3.39 is equivalent to a moderate descriptive level, which is implied to be manifested sometimes. Consequently, a mean range of 1.80 to 2.59 is equivalent to a low descriptive level, indicating a seldom manifestation. In contrast, a mean score of 1.00 to 1.79 is equivalent to a very low descriptive level considered to be never manifested.

For measuring the information literacy skills of librarians, the researcher utilized the adapted and modified 17-item version of the Information Literacy Self-Efficacy Scale (ILSES) developed by Kurbanoglu, Akkoyunlu, and Umay (2006). Information literacy skills were categorized into three components: intermediate information literacy skills, basic information literacy skills, and advanced information literacy skills. To assess library service quality, the study employed the adapted and modified LibQual+ instruments developed by the Association of Research Libraries (ARL, 2003), which consisted of 22 core items categorized into three dimensions: affect of service, information control, and library as a place. Lastly, the Electronic Information Environment instrument from Ani's (2013) study was adapted and modified, resulting in a 13-item survey questionnaire.

The reliability of the questionnaire was assessed through the application of Cronbach's alpha, and it was also examined by internal and external validator experts, which obtained a value of 4.48, which is described as a very high level. Respectively, Information Literacy Skills obtained a Cronbach alpha of 0.97. At the same time, Library Service Quality has a Cronbach alpha of 0.98, and Electronic Information Environment has a Cronbach alpha of 1.0, which signifies excellent internal consistency and significant reliability in the conduct of the study.

## Design and Procedure

In this study, the descriptive-correlational research approach was employed to gather data, insights, facts, and information pertaining to the research topic. This approach aimed to ascertain the degree to which various variables within the target population are interconnected. Descriptive-correlational studies are utilized to depict variables and the inherent associations that exist among them (Sousa et al., 2007). The descriptive study assessed the levels of information literacy skills among librarians, the quality of library service, and the electronic information environment. Additionally, it employed a correlational approach to determine the relationships among three variables: information literacy skills, library service quality, and electronic information environment. Furthermore, the study utilized a mediation analysis to examine the relationships among the independent and dependent variables, the independent and mediating variables, and the mediating and dependent variables.

Mediation analysis determines how an independent variable (X) influences a dependent variable (Y). The mediator (M) is the variable that transmits the influence of the independent variable to the dependent variable, and the mediated effect is the indirect effect through the mediator. Mediation analysis is used in preventative research to improve future interventions by identifying the mediator(s) by which the intervention (X) influences the desired outcome

(Y) (Frey, 2018). Consequently, given that the study aimed to ascertain the influence of the electronic information environment as a mediating variable on the relationship between librarians' information literacy skills and library service quality in private basic education institutions, it was appropriate to employ a quantitative correlation-descriptive design.

Subsequently, following the validation of the questionnaire by experts, pre-testing, and computation of Cronbach's alpha, the data collection process involved the following steps: Firstly, after obtaining endorsement from the adviser and dean of the graduate school at the University of Mindanao to conduct the study, the researcher composed a letter addressed to the school heads of selected private basic education institutions in Davao City. This letter sought permission to conduct the study. Once permission was granted, the respondents were given a set of questionnaires accompanied by approved letters addressed to their respective school heads and an informed consent form (ICF). The questionnaires were administered through an online survey using Google Forms, and in face-to-face interactions, a printed survey questionnaire was utilized. In both cases, the purpose of the study was explained. In due course, the researcher collected the survey questionnaires and tabulated all the gathered data using Microsoft Excel. The compiled and organized data were then presented to the statistician for computation and subsequent analysis.

The researcher utilized various statistical tools to compute the data and test the study's hypotheses with a significance level of 0.01 (two-tailed) to ensure scientifically valid treatment. These tools include mean, Product-Moment Correlation (Pearson-r), and Path analysis. This study uses the mean to determine the levels of Information Literacy Skills, Library Service Quality, and Electronic Information Environment. On the other hand, Pearson r was used to evaluate the relationship and strength of association between variables. Finally, Path analysis was used to determine the mediating effect of the electronic information environment on the relationship between information literacy skills and library service quality.

The University of Mindanao Research and Ethics Committee (UMERC) has thoroughly reviewed this investigation and deemed it to have fulfilled all the necessary ethical requirements. A certificate of approval bearing the protocol number UMERC-2022-345 has been granted. The researcher took measures to maintain the anonymity of the participants, ensuring that all responses remained confidential. The information collected is strictly utilized for academic purposes. It is crucial to emphasize that all individuals who took part in the study did so willingly, and they provided informed consent, indicating their understanding of the study's goals.

## RESULTS AND DISCUSSION

This chapter provides an overview of the significant discoveries from the research and the data analysis, with a particular emphasis on how the electronic information environment mediates the relationship between the information literacy skills of librarians and the quality of library services in private basic education institutions.

### Level of Information Literacy Skills of Librarians

**Table 1: Information Literacy Skills of Librarians**

	<b>Mean</b>	<b>SD</b>	<b>Descriptive Level</b>
Information Literacy of Skills Librarians	<b>4.21</b>	<b>.698</b>	<b>Very High</b>

Table 1 indicates that the information literacy skills of librarians in private basic education institutions in Davao City are very high, with a mean score of 4.21. Librarians'

proficiency in information literacy skills can vary based on factors like education and experience. However, a high level of competence is generally expected due to the foundational importance of these skills in their field. These skills are categorized into basic, intermediate, and advanced levels. Basic skills involve effective information searching and source evaluation. Intermediate skills encompass organizing information within libraries, teaching advanced research techniques, and promoting digital literacy. Advanced skills include developing comprehensive information literacy programs, offering specialized research support, and deeply understanding information ethics and copyright.

The findings indicate that the information literacy among librarians is very high. These skills enable librarians to serve as information experts and educators, guiding users in finding, evaluating, and using information effectively. Continuous professional development and pursuing advanced degrees in library and information science are essential for librarians to remain proficient in this ever-evolving information management and dissemination field.

### Level of Library Service Quality

**Table 2: Level of Library Service Quality**

Indicators	Mean	SD	Descriptive Level
Service Affect	4.47	.645	Very High
Information Control	4.05	.944	High
Library as Place	4.40	.792	Very High
<b>Overall</b>	<b>4.31</b>	<b>.674</b>	<b>Very High</b>

Table 2 shows the level of library service quality among basic private education institutions in Davao City, which garnered an overall total mean score of 4.31 which means a very high level. *Service affect* is the highest indicator of library service quality, with an average mean score of 4.47, followed by the *library as place*, which garnered a total mean score of 4.40, a very high descriptive level. However, the *information control* is the lowest among the indicators, with a mean score of 4.05, which is still considered high at the descriptive level. The consistency of participants' responses across different indicators is evident, as the standard deviation for all indicators is below 1.00.

The findings suggest that the library service quality indicators are at a very high level, indicating that high-quality library services are generally provided and meet the user's information needs. However, there is room for improvement regarding information control, although it still falls within the high descriptive level, indicating that it could be of better quality. This may be attributed to limited electronic resources, accessibility and availability issues, and outdated library technology that may require upgrading or replacement. These are common challenges faced by libraries, which can be costly to address.

### Level of Electronic Information Environment

**Table 3: Level of Electronic Information Environment**

Indicators	Mean	SD	Descriptive Level
1. There is an official computer in school which can access relevant electronic resources.	4.15	1.074	High
2. There is an official computer in our classroom which can access relevant electronic resources.	3.46	1.413	High
3. I use my personal computer (desktop/laptop) to access relevant electronic resources.	4.23	1.045	Very High
4. I have internet access in the library.	4.06	1.204	High

5. I have internet access in the classroom.	3.83	1.349	High
6. I have internet access in school.	4.17	1.183	High
7. I access CD-ROM in the library.	3.22	1.407	Moderate
8. My fellow colleagues in school have access in campus network/intranet.	3.91	1.251	High
9. My personal phone has access in campus network/intranet.	4.07	1.265	High
10. I have access to Local Area Network (LAN) of the school.	3.90	1.263	High
11. My personal computer/laptop has access to Local Area Network (LAN).	3.91	1.295	High
12. I can access virtual/digital library in campus library.	3.78	1.311	High
13. I have access virtual/digital library in my classroom.	3.66	1.405	High
<b>Overall</b>	<b>3.87</b>	<b>.931</b>	<b>High</b>

Table 3 presents the level of the electronic information environment among basic private education institutions in Davao City, which is rated at a high descriptive level with an overall mean score of 3.87. Only item 3 obtained a very high descriptive level, indicating that the majority of respondents use their personal computer or own laptop when accessing electronic resources while using the local area network (LAN) of the school on-site. However, item 7 obtained the lowest mean score of 3.77, indicating a moderate level. This could be attributed to the extensive technological innovations and the availability of numerous electronic information resources, which respondents prefer to access online rather than using CD-ROM.

Furthermore, the rest of the items are rated at the high descriptive level. This entails that perchance there is a nominal dispute occurrence in some incidents, patrons experienced minimal distress of moderately slow internet connection, which is very common in a third-world country. However, it is worth noting that the information and communication technology infrastructure was effectively and efficiently operated, providing reliable electronic resources and adequately utilizing all the electronic services by the respondents.

### Correlation Analysis of Variables

**Table 4: Correlation Analysis of Variables**

Pair	Variables	Correlation Coefficient	<i>p</i> – value	Decision <i>H</i> <sub>0</sub>
IV and DV	Information Literacy Skills of librarians and library service quality	.788	.000	reject
IV and MV	Information Literacy Skills of librarians and Electronic Information Environment	.594	.000	reject
DV and MV	Library Service Quality and Electronic Information Environment	.688	.000	reject

Note: \*\*Correlation is significant at the 0.01 level (2-tailed).

Displayed in Table 4 are the findings of the relationship between the librarians' information literacy skills, library service quality, and the electronic information environment. Based on the findings, the analysis of the data reveals a significant relationship

between the information literacy skills of librarians and the indicators of library service quality, as evidenced by a computed R-value of .788 and a probability value of  $<0.05$ , which is considered statistically significant at the 0.01 level. These results indicate a substantial association between the information literacy skills of librarians and the quality of library services. Consequently, the null hypothesis, which proposed no significant relationship between these variables, is rejected. In simpler terms, the information literacy skills possessed by librarians directly influence and play a determining role in the overall quality of library services provided. Having highly skilled librarians contributes significantly to the delivery of quality library services. The competence and capabilities of librarians are crucial factors that enable the achievement of this outcome.

Additionally, the results of the relationship between the information literacy skills of librarians and the electronic information environment are presented in Table 4. It is evident from the data that the information literacy skills of librarians and the indicators of the electronic information environment have a probability value of  $<0.05$ , which is significant at the 0.01 level. Furthermore, the overall R-value of .594 indicates a positive correlation between the two variables. These results lead to the rejection of the null hypothesis, which implies that there is no meaningful correlation between the information literacy skills of librarians and the electronic information environment. Consequently, there is a statistically significant connection between these two variables.

In other words, librarians' information literacy skills significantly impact the utilization of electronic information resources and facilities. The higher the level of information literacy skills librarians and other library managers possess, the greater their ability to effectively and efficiently impart those skills to library users. As a result, library users are actively exploring the available electronic information resources in various formats, as the librarians have well-educated them. Consequently, they possess sufficient knowledge about electronic resources and how to operate and evaluate the currency, legitimacy, and relevance of the searched information. This increased knowledge and skill set contribute to a higher likelihood of successfully utilizing facilities and electronic information resources and experiencing the benefits of the electronic information environment.

In Table 4, the findings regarding the relationship between library service quality and the electronic information environment can also be observed. Based on the results, an overall correlation coefficient (R-value) of .688 with a probability value of  $<0.05$ , indicating significance at the 0.01 level, quantifies the association between library service quality and the electronic information environment across all indicators. As a result, a meaningful connection emerges between the quality of library services and the electronic information environment. The null hypothesis, which suggests no significant correlation between these two variables, is disproven. Put simply, the quality of library services affects how extensively the electronic information environment is used. Superior library services result in higher user engagement and utilization of the facilities, equipment, and other resources within the electronic information environment.

### **Mediation Analysis of Three Variables**

Figure 2 displays the mediation analysis of the three variables, illustrating their relationship through path analysis.

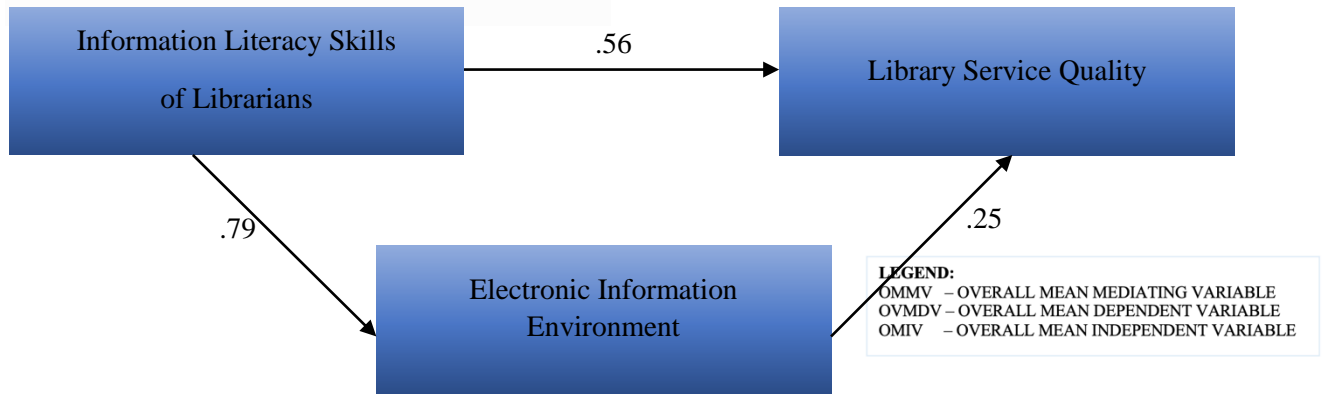


Figure 2. Results of the Mediation Analysis

Regression Weights: (Group number 1 – Default Model)

			Estimate	S.E.	C.R.	P	Label
OMMV	<---	OMIV	.793	.059	13.380	***	
OVMDV	<---	OMIV	.564	.037	15.418	***	
OVMDV	<---	OMMV	.246	.027	8.968	***	

Various philosophical systems and debates revolve around the concept of mediation. In the context of this study, the electronic information environment acts as the mediator, explaining the manner or reasons behind the association between the predictor variable, information literacy skills, and the dependent variable, library service quality.

Initially, determine whether mediating effects exist among the underlying variables. If the impact is determined to be statistically insignificant, the analysis using the casual stages method comes to a stop. Complete mediation occurs when the influence of the independent variable (IV) on the dependent variable (DV) becomes non-significant by the end of the study. This indicates that the mediating variable (MV) fully controls all effects. On the other hand, partial mediation occurs when the path analysis is considerably reduced in the final stage but remains statistically significant. This implies that while the mediating variable (MV) does mediate a part of the independent variable's (IV) influence, the remaining impact is either direct or mediated by factors outside the established framework. Even after accounting for the mediating variable, the effect of the independent variable on the dependent variable (DV) is notably reduced, but because the effect still holds statistical significance, it is deemed as partial mediation.

Table 4 illustrates the mediation that occurs among the electronic information environment, information literacy skills, and the quality of library services. Meanwhile, Figure 2 presents the calculations of the effect sizes in the mediation test involving the three factors. As described in the table, the mediation process consisted of three stages for the third variable, the electronic information environment, to function as a mediator. These stages are labeled Steps 1 through 4 in the table. In Step 1, it was observed that library service quality significantly predicted the electronic information environment, serving as the mediator, with a significance level of 0.01. Step 2 indicated that information literacy skills significantly predicted the relationship between library service quality and the mediator at a significance level of 0.01. Step 3 demonstrated a significant impact of the electronic information environment on information literacy skills, also at a significance level of 0.01. Given the significance of the three stages (Path A, B, and C), further mediation analysis using path analysis is necessary. This suggests that the mediator intervenes in a portion of the independent variable (information literacy skills) through the electronic information

environment. Moreover, other factors not included in the model mediate certain aspects, either directly or indirectly. Additionally, since the impact remained substantial at a significance level of 0.01, partial mediation was achieved.

Moreover, as depicted in Figure 2, the results of the Path Analysis reveal significant and consistent paths from library service quality to the electronic information environment, from the electronic information environment to information literacy skills, and from information literacy skills to library service quality. This signifies that the electronic information environment plays a role in influencing the association between information literacy skills and library service quality. The earlier findings indicate a substantial increase of 0.79 units in information literacy skills for each unit increase in information literacy skills. Furthermore, a unit increase in information literacy skills corresponds to a notable rise of 0.56 units in library service quality. Additionally, each unit increase in the electronic information environment is accompanied by a significant increase of 0.25 units in library service quality.

Since the electronic information environment only acts as a partial mediator, it is impossible to assert that information literacy skills exclusively shape library service quality through the electronic information environment. Hence, the electronic information environment is among various factors influencing library service quality. The diagram depicts the mediation analysis involving this study's three variables under investigation.

### CONCLUSION AND RECOMMENDATION

The data gathered and analyzed found that the librarians showcased exceptional expertise. They demonstrated a fundamental competency in information literacy, including identifying information needs, navigating and accessing various resources in print and digital formats through library catalogs, and skillfully evaluating, structuring, and utilizing the acquired information. To sustain expertise in this constantly evolving realm of information management and dissemination, librarians must engage in ongoing professional development and pursue advanced degrees in library and information science.

Meanwhile, the service affect and the library as place indicators of library service quality demonstrate a very high level. This indicates that the library provides an atmosphere conducive to quiet and focused studying, creating a comfortable and welcoming environment for individuals to engage in learning and research activities. Additionally, the librarians exhibit reliability in effectively addressing and resolving user service problems, contributing to the positive perception of the library's quality. On the other hand, in terms of information control, it is observed that this aspect of library service quality is rated at a high level. This finding is linked to the only electronic information environment indicator that has obtained a very high level, wherein the majority of the teachers and non-teaching personnel heavily depend on their personal computers or laptops to access relevant electronic information, whether or not using the local area network (LAN) or intranet of the school, which allows them to access the virtual or digital library and other electronic resources.

On top of that, the electronic information environment is highly rated as a whole, and the only exception is accessing the CD-ROM, which is moderately rated. This can be attributed to technological advancements, as there are now alternative formats and remote access options available, which modern library users prefer. This observation highlights that the library excels in providing a conducive and inviting physical environment while demonstrating the librarian's reliability in delivering user service and their proficient display of information literacy skills. Nonetheless, there is a need for additional focus on improving ICT infrastructure due to the significant dependence of teachers and non-teaching personnel on personal devices for accessing electronic information. As such, it is important to consider this aspect for a more seamless and efficient user experience.

Based on the findings and outcomes, the presented data reveals a significant correlation among the variables examined in the study. The data above substantiates the idea that librarians possess a statistically significant association between information literacy skills and the quality of library services. Additionally, the study's results imply that the electronic information environment substantially influences the relationship between librarians' information literacy skills and the quality of library services. Furthermore, most of the indicators for each variable demonstrate a high level of detail, clearly illustrating the factors contributing to the significant relationship between these variables.

Moreover, applying the causal steps mediation analysis method in this research revealed a significant link between the electronic information environment and information literacy skills, showcasing a partial mediating influence of these variables. The results suggest that information literacy skills impact the quality of library services through the electronic information environment without altering the direction of the effect. Consequently, the observed mediation was only partial. In the final phase, the regression coefficient experienced a significant decrease while remaining statistically significant with unchanged signs. While some aspects of the mediating variable directly influence the independent variable, others are mediated by non-model components. Despite the limited mediation, the influence remained statistically significant at this stage.

Finally, the results are supported by the following propositions and a fundamental model from which the study is anchored: Durodolu (2017) proposes that information literacy is crucial for maintaining the quality of library services, particularly in transforming electronic information resources used in academic environments. Fong Li et al. (2007) argue that digital natives, accustomed to constant connectivity, often overlook the valuable electronic resources offered by libraries and lack the skills to access and evaluate information effectively. Therefore, librarians must teach information literacy to empower users to make informed decisions and assess the quality of library services. According to Gündüzalp (2021), today's environment provides access to a vast array of constantly changing information from numerous sources. The emergence of electronic information resources, including computers, the internet, and smartphones, has made information readily available. However, possessing information literacy skills is essential to effectively utilizing and discerning the reliability of information in this digital age. Partap (2019) highlights that the impact of ICT infrastructure has led to a dramatic shift in the provision of library services, with the electronic environment now dominating the collection, management, and access of information and resources.

Consequently, users expect high-quality library services to be delivered promptly, particularly in electronic formats. Lastly, the 8Ws Information Literacy (IL) Model, developed by Annette Lamb in the early 1990s, presents a comprehensive framework for information inquiry skills in an electronic environment. This model encompasses eight phases: wondering, wiggling through information, and weaving elements together within a project- and community-based learning context (Swapna & Biradar, 2017).

In light of the foregoing findings and conclusion, subsequent recommendations are suggested. Librarians should actively seek avenues for professional advancement to constantly excel in information literacy. Attending workshops, webinars, conferences, and training sessions specifically focusing on information literacy, digital literacy, and library technology is an excellent way to achieve this. These events offer a platform for staying updated on the latest trends, techniques, and best practices in the field. They also provide opportunities to interact with peers, exchange ideas, and learn from experts. Moreover, online resources like webinars, tutorials, and self-paced courses offered by reputable organizations, libraries, and educational institutions can be invaluable tools for continuous learning. By actively participating in such activities, librarians can maintain their very high level of



information literacy skills and advance and strengthen them, ensuring that they remain at the forefront of their profession in this dynamic and ever-evolving information landscape.

Regarding the reliance on the personal use of computers or laptops by the teaching and non-teaching personnel to access electronic resources, perhaps providing computers for research usage within the library that can meet the demands of library users, as well as specific locations for teaching personnel to use for instructional purposes, would accommodate them accordingly. In that way, it intensifies the information control aspect of delivering quality information and services to library users. Under no circumstances should a robust and dependable network infrastructure be secured to support high-speed internet connectivity across the organization. Invest in sufficient bandwidth, routers, switches, and access points to meet the rising demand for online access. Make sure that Wi-Fi is available on the premises to allow personal devices to connect seamlessly, and consider adding access points as needed to minimize dead zones and ensure continuous internet access.

Collaboration with IT specialists is beneficial concerning the advent of technological advancements in the electronic information environment. Collaboration with them will assist you in leveraging technology, implementing creative solutions, and ensuring seamless integration of digital tools into library services to fulfill a systematic and efficient user experience.

Finally, it is also recommended to regularly seek feedback from library users to gauge the effectiveness of your services and identify areas for improvement. Use this feedback to refine your approach and adapt to evolving technology and user needs. By actively developing and advancing your information literacy skills, you will be better equipped to deliver high-quality library services that meet the needs of users in an increasingly digital and technology-driven world.

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