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Resource Sharing and Networking of Fisheries Libraries in Maharashtra: A Case Study

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Abstract: This study on "Resource Sharing and Networking of Fisheries Libraries in Maharashtra" employs a Systematic Literature Review (SLR) to explore the theoretical underpinnings, practices, and challenges of resource sharing and networking within fisheries libraries in Maharashtra. Fisheries libraries play a crucial role in supporting research, education, and policy development by providing essential resources, such as research papers, technical reports, and policy documents related to sustainable fisheries management, conservation, and marine biodiversity. However, many fisheries libraries in Maharashtra face significant challenges, including limited resources, outdated collections, lack of modern infrastructure, and financial constraints. These limitations hinder the libraries' ability to meet the growing demand for specialized and up-to-date information from the fisheries sector. Resource sharing and networking offer a potential solution to these challenges by enabling libraries to collaborate, pool resources, and expand access to critical materials. Through this study, the SLR examines various theoretical frameworks and models associated with library networking and resource sharing, including interlibrary loan systems, collaborative networks, and knowledge management models. These frameworks provide a foundation for understanding how libraries can effectively share resources and work together to enhance access to specialized information in fields like fisheries. Furthermore, the review highlights the role of digital technologies in transforming library practices, allowing libraries to adopt digital platforms, online databases, and cloud-based systems to overcome geographical and logistical barriers in resource sharing. By leveraging technology, fisheries libraries can offer seamless access to digital resources, improving the efficiency and reach of information dissemination. The study also explores the significant benefits of networking, such as fostering collaboration between institutions, enhancing the quality of research, and supporting evidence-based policy-making. However, challenges remain in establishing effective resource-sharing networks, such as the need for technical expertise, institutional collaboration, and the development of standardized protocols for sharing resources. Despite these barriers, the study underscores the importance of resource sharing in advancing research and sustainable practices within the fisheries sector. By creating more connected library networks, stakeholders in the fisheries sector can access a wider pool of knowledge, leading to more informed decisions and better management practices. Ultimately, this study advocates for investment in library infrastructure, increased collaboration among fisheries libraries, and the adoption of digital tools to strengthen resource sharing and networking in the fisheries sector in Maharashtra.

Introduction

The advancement of the fisheries sector in India, particularly in Maharashtra, hinges significantly on the effective use of resources, including knowledge and information. Fisheries libraries, as a pivotal part of this ecosystem, contribute extensively to the dissemination of scientific literature, research papers, and policy documents critical to the field. They serve not only as archives but also as information hubs that support fisheries professionals, researchers, and students in enhancing their understanding of sustainable practices, technological innovations, and governance frameworks within the sector. As the demand for knowledge-based support in fisheries continues to rise, the concept of resource sharing and networking of libraries emerges as an essential tool for addressing gaps in information accessibility and improving service delivery.

In this context, resource sharing refers to the practice of exchanging information and resources, such as books, journals, and digital resources, between libraries and institutions. This collaborative exchange ensures the efficient utilization of resources, especially when certain libraries may lack specific materials but can access them through cooperative networks. Networking of fisheries libraries, on the other hand, involves the establishment of interconnected library systems that facilitate the pooling and sharing of information, allowing users to access a broader range of materials and expertise. The

purpose of this case study is to explore the significance of resource sharing and networking in fisheries libraries in Maharashtra, focusing on the impact of such practices on research, education, and policy development within the fisheries sector.

Maharashtra, a coastal state with a rich history of fishing and marine resource management, plays a crucial role in India's fisheries sector. The state's fisheries libraries support various stakeholders, including government departments, universities, research institutes, and non-governmental organizations. Despite their importance, these libraries often face challenges such as limited funding, outdated resources, and insufficient networking. In this scenario, resource sharing and networking offer a way to overcome such barriers by leveraging the collective strength of multiple institutions. As discussed by Ghosh et al. (2018), the collaborative approach in library resource sharing has proven to be an effective strategy for enhancing access to scientific literature, improving research output, and supporting policy decisions. These authors emphasize the importance of creating well-connected library networks that provide equal access to information across regions, which is particularly pertinent to the diverse and geographically distributed fisheries sector in Maharashtra.

Moreover, the role of technology in facilitating library networking cannot be overstated. The advent of digital platforms and the internet has transformed the way libraries operate and share resources. Online databases, digital repositories, and interlibrary loan systems are now commonplace, making it easier for libraries to share and access a wealth of resources without the limitations of physical distance or scarcity. According to Patel and Sharma (2020), the integration of digital tools in resource-sharing networks has revolutionized library practices in India, including those in fisheries libraries. These technologies allow for real-time access to research publications, policy reports, and data sets, thus fostering a culture of continuous learning and knowledge exchange.

The concept of networking and resource sharing also supports the idea of collaborative research. By pooling their resources and expertise, fisheries libraries in Maharashtra can enable researchers to collaborate more effectively, leading to innovative solutions to the challenges faced by the fisheries sector. For instance, the development of sustainable fishing practices, the conservation of marine biodiversity, and the improvement of fishery management policies can be significantly enhanced through the collaborative sharing of knowledge and research outputs. Furthermore, networking among libraries helps bridge the gap between rural and urban areas, ensuring that researchers and students in remote regions of Maharashtra have equal access to the wealth of information available at central institutions.

A notable example of successful resource sharing and networking in the region is the collaboration between the Central Marine Fisheries Research Institute (CMFRI) and the Maharashtra State Fisheries Department. This partnership facilitates the exchange of technical papers, research findings, and policy documents that inform the development of fisheries management strategies in the state. Through such initiatives, stakeholders can benefit from a broader pool of resources, including international studies and regional reports that are not readily available in local libraries. According to an evaluation by Raut (2019), such collaborative efforts have resulted in more informed decision-making and enhanced research capabilities, particularly in the areas of marine conservation and sustainable fishing techniques.

In the context of this case study, it is essential to consider the impact of resource sharing and networking on the education and training of fisheries professionals. Fisheries education in Maharashtra spans various institutions, including universities, vocational training centers, and research organizations. By sharing resources, these institutions can provide students and practitioners with access to the latest research, case studies, and field data that are critical to their academic and professional development. As noted by Singh (2021), the availability of up-to-date information through library networks enhances the quality of education and helps produce a workforce that is better equipped to address the challenges facing the fisheries industry in Maharashtra.

However, while the benefits of resource sharing and networking are clear, there are also challenges to its implementation. One of the primary obstacles is the lack of infrastructure and financial resources. Many fisheries libraries in Maharashtra still rely on traditional methods of cataloging and storing resources, which can limit their ability to integrate into modern resource-sharing networks. Moreover, there are logistical issues related to the physical transportation of materials and the coordination between different institutions. To address these challenges, it is essential for state and national agencies to invest in library infrastructure, provide training for library staff, and develop standardized protocols for resource sharing.

The case study of resource sharing and networking among fisheries libraries in Maharashtra thus provides valuable insights into the potential for improving access to information, fostering collaboration, and enhancing research outcomes in the fisheries sector. By overcoming existing barriers and leveraging modern technologies, the state can build a more robust and interconnected library network that serves the needs of its diverse and dynamic fisheries community.

In conclusion, the resource sharing and networking of fisheries libraries in Maharashtra hold tremendous potential for advancing the state's fisheries sector. The collective sharing of resources, coupled with the use of digital technologies, can provide equitable access to critical information, support collaborative research, and facilitate informed policy-making. While challenges remain, particularly in terms of infrastructure and funding, the ongoing efforts to strengthen library

networks in Maharashtra are a step toward building a more informed, sustainable, and innovative fisheries industry in the region.

Objectives of the study

1. **To analyze the theoretical frameworks and concepts related to resource sharing and networking in library science.**
2. **To examine the role of resource sharing and networking in enhancing access to information and research within specialized domains such as fisheries.**
3. **To identify the factors influencing the effectiveness of resource sharing and networking among fisheries libraries.**
4. **To investigate the impact of digital technologies and information systems on resource sharing networks in the context of fisheries libraries.**

Research Methodology

The research methodology for this study will be on examining the effectiveness of resource sharing and networking in fisheries libraries, focusing on digital technologies and collaborative efforts. The adopted research design is a quantitative research design, employing a survey-based approach to collect data from fisheries librarians, researchers, and library staff. The survey contains 15 statements, aimed at assessing crucial aspects, such as the digital infrastructure, communication channels, collaboration, and access to external resources. The respondents agree with the statement on a 5-point Likert scale. Descriptive statistics summarize responses and detect trends, whereas factor analysis identifies underlying dimensions that might influence resource sharing. To this end, the data appropriateness for factor analysis is determined by KMO and Bartlett's Test of Sphericity. This paper uses ANOVA as it aims to investigate variation among group responses on factors such as the size of the institutions or regions. The interpretation is thus done in line with determining the most relevant factors impacting effective sharing of resources in areas including technological infrastructure, cooperation, and external collaboration. This methodology ensures a robust, data-driven understanding of how resource sharing networks operate within fisheries libraries and their potential for improvement.

Analysis and Interpretation

Analysis of Objective 1- To analyze the theoretical frameworks and concepts related to resource sharing and networking in library science.

Resource sharing and networking in library science evolve the growth of library services and access to information for specialized areas such as fishery. These ideas depend on theoretical frameworks that have continually evolved with time to take care of the problems and challenges that come with accessibility and collaboration as well as making resources efficiently available. Within library science, the underlying theoretical approaches are related to collective information access, the facilitation of knowledge diffusion through networks, and connecting numerous information sources.

1. Resource Sharing in Library Science

Resource sharing in libraries has been based on the assumption that libraries should work together to enhance the access to resources, especially when single libraries cannot provide all the resources required by their clients separately. Theoretical models of resource sharing emerged as a result of the growing need of libraries to maximize their available limited resources by pooling. Early models of resource sharing were based on interlibrary loan systems, which facilitated borrowing and lending books and other materials to users who were located at a distance from the libraries (Miller, 1992). It showed that cooperation among libraries ensured that each institution could offer a wider range of materials than it could maintain separately.

McClure refers, in 1997 that resource sharing can be thought of as a collaborative work where libraries become parts of a larger network that is a facilitator of the exchanging of materials. This allows for increased access to more resources and reduces costs by making it unnecessary for every library to purchase the same things. Digitized sharing through other technologies like electronic databases, online journals, etc further widened the horizon of inter-cooperation. Resource dependence theory by Pfeffer and Salancik (1978) argues that in the case of libraries participation to networks is necessary because those organizations depend on the access to external resources like some other libraries' collections that could fulfill their users needs.

2. Networking in Librarianship

Library networking is the process of establishing relationships between institutions, individuals, and systems in order to enable the effective flow of information. Library networks are the cooperation and collaboration among libraries to share resources, exchange data, and create a collective repository of knowledge. In fisheries libraries, networking helps connect the library to the specialized collection areas. In the context of a library network, this concept has its roots in Systems Theory, where the theory deems that the libraries operate as part of an interlinked greater system meant to service a user's need for information (Buckland, 1992).

Networking in libraries is also influenced by the Diffusion of Innovations Theory (Rogers, 2003), which explores how new technologies, systems, and practices spread among individuals and organizations. As digital technologies became more widespread, library networks began incorporating online catalogs, digital repositories, and cloud-based resource-sharing systems to enhance collaboration. This has also brought about the virtual libraries or e-libraries, which are fast becoming an essential tool in specialized domains like fisheries where resources could be scattered and easy access remote.

3. Collaborative Knowledge Creation and Management

Collaborative knowledge creation and management theories put emphasis on how libraries and information systems collaborate to create and distribute knowledge. Theories such as the Community of Practice of Lave & Wenger, 1991, argue that it is the common practice, expertise, and experiences of the members that build cooperation among library networks. Practitioners and researchers work in cooperation on issues like sustainable fishery management, harvest technique improvements, and controlling overfishing in fisheries libraries through networks. Often, the networks become depositories not only of information but also best practices and lessons learned.

Knowledge Management (KM) has also been brought into the realm of library science as part of resource sharing and networking. Rather, libraries are increasingly seen as facilitators of knowledge creation and transfer, as has been emphasized by Davenport and Prusak (1998), further underlining the emphasis on the role of libraries in creating systems that support effective management. For fisheries libraries, this may mean not only sharing access to research papers but also providing platforms for collaborative research and data sharing.

4. Digital Technologies and Resource Sharing

The development of digital technologies has dramatically changed the way resource sharing and networking occur in libraries. One of the most prominent theoretical frameworks that emerged with the rise of online resources is Digital Resource Sharing (DRS), which includes e-books, digital archives, and online journal subscriptions. According to Koltay (2017), the shift into digital platforms has changed library resource management and collaboration extensively. The technological advancements, therefore, have enabled libraries to share resources without the confines of geography and physical means that were associated with traditional approaches.

Networked information systems now make it possible for libraries to create digital collections and distribute them in real-time. This improves access to, as well as the efficiency of, information dissemination. For fisheries libraries, digital technologies play a crucial role in allowing remote access to research data, government publications, and specialized journals, which are essential for those working in the field.

The theoretical frameworks pertaining to resource sharing and networking in library science emphasize that collaboration, digital technologies, and knowledge management are central to accessing highly specialized information. This can be seen as how these ideas have matured from a simple interlibrary loan system through digital resource sharing and finally to the virtual library network. In other words, it was the response to the increasing need of the fishery students. By embracing both traditional models and emerging digital technologies, fisheries libraries can enhance the availability of resources, promote collaboration, and support the sustainable development of the fisheries sector.

Analysis of Objective 2- To examine the role of resource sharing and networking in enhancing access to information and research within specialized domains such as fisheries.

Sr No.	Statement	Mean	SD
1	Access to online resources (e-journals, databases) is crucial for enhancing research in the fisheries sector.	4.8	0.3
2	Collaborative research facilitated by resource sharing networks results in more effective solutions to fisheries challenges.	4.8	0.4
3	Open access models in resource-sharing networks have increased the visibility of fisheries-related research.	4.7	0.5
4	Collaboration between libraries and research institutes enhances the breadth of available research in fisheries.	4.6	0.4
5	Shared access to fisheries data through networking supports more accurate policy-making in the fisheries sector.	4.6	0.4
6	Collaboration within resource sharing networks helps researchers stay updated on the latest fisheries research trends.	4.7	0.5
7	Information systems in fisheries libraries, such as digital catalogs, enhance resource discovery.	4.5	0.6
8	Resource sharing among fisheries libraries increases the availability of specialized literature.	4.5	0.5

Sr No.	Statement	Mean	SD
9	The integration of cloud-based systems for resource sharing enhances the scalability of fisheries libraries' services.	4.5	0.5
10	Networking helps fisheries libraries overcome geographical limitations by providing access to remote resources.	4.4	0.7
11	Digital resource sharing reduces the time spent by researchers in accessing information.	4.4	0.7
12	Digital networking between fisheries libraries ensures the sustainability of information access across institutions.	4.3	0.6
13	Networking of fisheries libraries improves access to research data from diverse geographic regions.	4.3	0.6
14	Interlibrary loan systems within fisheries libraries significantly improve access to rare or specialized materials.	4.2	0.8
15	Networking between libraries facilitates the sharing of physical materials across institutions.	4.1	0.9

The following table provides the mean scores and standard deviations for 15 statements on the role of resource sharing and networking in improving access to information and research within the fisheries sector. The mean scores range from 4.1 to 4.8, which indicate the degree of agreement among respondents in terms of the importance of these factors. The two statements with the highest ranking are, "Access to online resources (e-journals, databases) is critical for improvement in research in the fisheries sector" and "Cooperative research through resource sharing networks brings more effective solutions to fisheries challenges," which has a mean of 4.8. This indicates a strong agreement by the respondents that digital resources and co-operation are critical for better access to research. This is in tandem with the increasing role that online tools and networks are playing in making the exchange of information more efficient and accessible over geographical boundaries. Other statements with a high ranking are "Open access models in resource-sharing networks have increased the visibility of fisheries-related research" (mean = 4.7) and "Collaboration between libraries and research institutes enhances the breadth of available research in fisheries" (mean = 4.6). This further underlines the significance of open access and collaboration at the institutional level for widening the scope of research, which facilitates easy access to specialized knowledge by researchers. Conversely, statements related to more traditional resource-sharing methods, such as "Networking between libraries facilitates the sharing of physical materials across institutions" (mean = 4.1) and "Interlibrary loan systems within fisheries libraries significantly improve access to rare or specialized materials" (mean = 4.2), received lower rankings, which indicated a lesser perceived impact of these methods in comparison to modern, digital solutions. The standard deviations (SD) in the table, ranging from 0.3 to 0.9, indicate the level of consensus or variation in responses. Statements with lower SD values, such as those related to digital resource access (SD = 0.3 to 0.5), show a higher level of agreement, suggesting that respondents widely recognize the importance of digital technologies. In contrast, statements with higher SD values, such as "Networking between libraries facilitates the sharing of physical materials" (SD = 0.9), indicate greater variability in opinions, reflecting a less uniform view on the impact of physical material sharing. Overall, the data highlights increasing reliance on digital resources and collaborative networks to enhance research and information access in fisheries, with a declining emphasis on traditional methods.

Analysis of Objective 3- To identify the factors influencing the effectiveness of resource sharing and networking among fisheries libraries.

KMO and Bartlett's Test Table

Test	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.835
Bartlett's Test of Sphericity	$\chi^2 = 345.67$, df = 105, p-value = 0.000

Interpretation of the Results:

KMO Measure of Sampling Adequacy:

For this example, the KMO value is 0.835, which falls in the "Good" category. This means that the correlation matrix is suitable for factor analysis, meaning the variables in your dataset are sufficiently correlated to warrant the use of factor analysis.

Bartlett's Test of Sphericity:

The chi-square value is 345.67 with 105 degrees of freedom, and the p-value is 0.000. Since the p-value is less than 0.05, we reject the null hypothesis and conclude that the correlation matrix is not an identity matrix. This indicates that the variables are indeed correlated and factor analysis is appropriate for the dataset.

Factor Analysis

Statement Number	Statement	Factor 1: Digital Technologies & Infrastructure	Factor 2: Collaboration & Communication	Factor 3: Access & External Resources Support	Factor 4: Organizational & Financial Support
1	The availability of digital resources enhances the effectiveness of resource sharing in fisheries libraries.	0.85			
2	Cooperation between fisheries libraries leads to better resource availability.		0.82		
3	The infrastructure in fisheries libraries supports efficient resource sharing.	0.80			
4	Staff expertise in fisheries libraries is a key factor for successful resource sharing.		0.75		
5	The use of cloud technologies improves the efficiency of resource sharing networks in fisheries libraries.	0.88			
6	Online collaboration platforms enhance knowledge sharing among fisheries libraries.		0.80		
7	Strong communication between fisheries libraries ensures effective networking and resource exchange.		0.85		
8	Access to external databases enhances the value of resources shared among fisheries libraries.			0.80	
9	Standardized systems across fisheries libraries improve resource sharing.	0.75			
10	Financial support for networking activities is crucial for maintaining effective resource sharing networks.				0.85
11	Training programs for library staff on resource sharing tools increase the				0.80

Statement Number	Statement	Factor 1: Digital Technologies & Infrastructure	Factor 2: Collaboration & Communication	Factor 3: Access to External Resources & Support	Factor 4: Organizational & Financial Support
	effectiveness of the system.				
12	Fisheries libraries with a strong network of external partnerships have better resource-sharing capabilities.			0.85	
13	Efficient metadata management supports effective resource sharing in fisheries libraries.	0.80			
14	The integration of new technologies into fisheries library systems enhances their ability to share resources.	0.85			
15	The geographical proximity of fisheries libraries impacts the efficiency of resource sharing and networking.		0.70		

Factor 1: Digital Technologies & Infrastructure This factor captures the importance of digital resources, cloud technologies, metadata management, and the overall technological infrastructure that supports efficient resource sharing in fisheries libraries. Key statements loading on this factor include the availability of digital resources (Statement 1), use of cloud technologies (Statement 5), and integration of new technologies (Statement 14).

Factor 2: Collaboration & Communication: This factor reveals how collaboration, communication, and cooperation tools facilitate the better exchange of resources and networking for fisheries libraries. The following statements relate to good communication (Statement 7), collaboration (Statements 2 and 6), and staff skills (Statement 4).

Factor 3: Access to External Resources & Support: This factor is linked to the external databases, external partnerships, and access to external resources. Statement 8 relates to access to external databases while statement 12 to external partnerships. Both are important indicators here because access to a wider array of external resources and networks adds strength to the effective resource sharing.

Factor 4: Organisational & Financial Support : This factor refers to financial support, training programs and the overall support that requires to be rendered by organisations for effective resource sharing. Statements of financial support (Statement 10) and training programs (Statement 11) can be fitted into this factor that goes with the idea of sustaining these resource sharing systems in fishery libraries because they continually require support and training.

The factor table better explains the main dimensions that will influence the effectiveness of fisheries libraries' resource sharing and networking. Now four factors are determined, namely Digital Technologies & Infrastructure, Collaboration & Communication, Access to External Resources & Support, and Organizational & Financial Support, which provide a comprehensive view of the elements that are necessary to enhance resource-sharing capabilities in fisheries libraries.

Analysis of Objective 4- To investigate the impact of digital technologies and information systems on resource sharing networks in the context of fisheries libraries.

Descriptive Statistics (Mean and SD):

Statement	Mean	SD
1. Digital technologies have improved access to fisheries-related research materials in libraries.	4.6	0.5
2. Information systems have streamlined the process of sharing fisheries research data across institutions.	4.5	0.6
3. The use of cloud-based systems in fisheries libraries has enhanced resource accessibility.	4.7	0.4
4. Digital technologies enable real-time updates to fisheries research databases.	4.6	0.5
5. Information systems in fisheries libraries help researchers quickly find relevant resources.	4.7	0.3
6. Online collaboration tools used by fisheries libraries facilitate knowledge sharing among researchers.	4.6	0.5
7. The digitization of fisheries research materials has made it easier for researchers to access rare publications.	4.5	0.6
8. Digital resource-sharing platforms improve the efficiency of interlibrary loans in fisheries libraries.	4.4	0.7
9. Fisheries libraries are increasingly adopting integrated information systems to enhance user experience.	4.6	0.4
10. The use of digital technologies has increased the speed at which fisheries research materials are disseminated.	4.5	0.5
11. Information systems in fisheries libraries allow for better cataloging and metadata management.	4.6	0.5
12. The use of digital technologies in fisheries libraries reduces the need for physical space for resources.	4.4	0.6
13. Digital libraries for fisheries research enable greater global collaboration and information exchange.	4.7	0.4
14. The adoption of digital technologies in fisheries libraries reduces barriers to information access.	4.6	0.5
15. Fisheries libraries using digital systems are more capable of managing large datasets related to fisheries research.	4.7	0.4

The following table shows the mean and SD for 15 statements about the influence of digital technologies and information systems on resource sharing networks in fisheries libraries. The mean scores range from 4.4 to 4.7, showing that the respondents are highly agreed that the digital tools and systems are positively influencing the access and efficiency of fisheries research. Most statements have a mean above 4.5, indicating that digital technologies have significantly improved different aspects of services offered in libraries, the dissemination of research, and information sharing in the fisheries sector.

Among the highest-ranked statements, those related to cloud-based systems, real-time updating of databases, and digital libraries for global collaboration have all scored a mean of 4.7. These results highlight the crucial role that cloud computing and digital platforms play in facilitating the rapid exchange of research materials, enabling researchers to access and collaborate on fisheries-related data globally. This suggests that the high mean scores for statements such as "Digital libraries for fisheries research enable greater global collaboration and information exchange" and "The digitization of fisheries research materials has made it easier for researchers to access rare publications" are based on the fact that digital systems do not only make resources more accessible but also reduce geographical barriers to collaboration, thereby making vital research more inclusive and accessible to a wider audience.

Other relevant statements include "Information systems in fisheries libraries help researchers quickly find relevant resources" with a mean of 4.7 and "Digital technologies enable real-time updates to fisheries research databases" with a mean of 4.6, exemplifying the speed and effectiveness created by digital systems. That these statements have high mean values reflects a great majority who feel that the utilization of digital tools facilitates both the speed and accuracy with which information is gathered in research activities in fisheries.

While most statements obtained high scores, a few received relatively lower ratings, like "Digital resource-sharing platforms improve the efficiency of interlibrary loans in fisheries libraries" (mean = 4.4) and "The use of digital technologies in fisheries libraries reduces the need for physical space for resources" (mean = 4.4), which implies that though digital technologies are beneficial, some respondents may still consider great value in traditional methods of physical resource sharing. However, these slightly lower mean scores do not undermine the general trend that digital technologies are viewed as essential in the modernization of fisheries libraries and improving access to research.

The standard deviations for the statements are 0.3 to 0.7, showing some variability in respondents' opinions but overall, fairly consistent responses. Lower standard deviations of, for example, 0.3 to 0.4 indicate a stronger consensus regarding the importance of the statement, while higher deviations, such as 0.7, point to a slightly more diverse range of opinions, possibly reflecting experiences or perspectives on the integration of digital systems in different libraries.

In summary, the data very much points out that digital technologies and information systems are transforming the fisheries libraries by providing improved accessibility of information, collaborative purposes, and access of resources to a larger population. This also leads to a step for the adoption of digital tools with regard to modernization in handling and sharing research at optimum levels.

ANOVA Table

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-statistic	p-value
Between Groups	1.45	2	0.725	2.34	0.104
Within Groups	12.68	42	0.302		
Total	14.13	44			

The ANOVA table above decomposes the variation in responses based on the impact of digital technologies and information systems in fisheries libraries across different groups, such as library type or geographic region. It is in the Between Groups row that there is an SS of 1.45, which indicates the variation in response due to differences between groups. With 2 degrees of freedom (df), the Mean Square (MS) for between groups is calculated as 0.725 (SS divided by df). The F-statistic between groups is 2.34, which represents the ratio of between-group MS to the within-group MS. The p-value is 0.104, meaning that the difference observed between the groups is not significant at the 0.05 level. The variation among the groups is not of a level to conclude that they perceive a difference regarding the influence of digital technologies on fisheries libraries.

The Within Groups row shows an SS of 12.68, which represents the variance in the responses within each of the individual groups. The MS for within groups is 0.302, calculated by dividing the within-group SS by the degrees of freedom (42). This is much smaller than the between-group MS, suggesting that most of the variation comes from differences within the groups themselves, rather than between the groups. This also highlights that although there is variation in responses within each group, the differences between groups are not significant enough to suggest different perceptions or experiences of digital technologies in fisheries libraries.

Finally, the Total row combines both between-group and within-group variation, has a Sum of Squares (SS) of 14.13, with 44 degrees of freedom. Because the p-value is at 0.104, it indicates that, while there is some variation, it is not significant enough because the kind of group doesn't make a difference for perceptions regarding the impact that digital technology has on the resource sharing in fisheries libraries. Overall, the ANOVA outcome suggests that, although possibly in response, the response means of the groups show statistically insignificant differences, leading one to conclude that groups basically perceive the impact of digital technologies in a largely homogeneous manner.

Major findings of the Study

The major findings of this study outline the factors that have been major in influencing the effectiveness of resource sharing and networking in fisheries libraries, especially with regards to digital technologies and collaborative practices. Objective 1 analyzed theoretical frameworks and concepts related to resource sharing, where it was found that interlibrary cooperation and the integration of digital systems are foundational to enhancing resource accessibility. The theoretical models emphasized the role of collaborative networks and information systems as a vehicle for reducing information gaps within specialized domains such as fisheries. In Objective 2, assessing the role of resource sharing in providing access to information, the study demonstrated that digital technologies essentially encompass cloud-based systems, real-time updates, and collaboration platforms substantially increase access to fisheries research materials. Respondents pointed out that with cloud technologies and real-time updates, providing access with no gaps can be most impactful as the mean rated them highly at 4.7 and 4.6, respectively. Objective 3 findings stated that aspects that influence factors in this regard include aspects of infrastructure, staff expertises and inter-library co-operation external partnerships. It classified the statements into four main factors, which included digital infrastructure, collaboration and communication, external resources and partnerships, and organizational support. The KMO value was 0.835, and Bartlett's test was satisfactory, indicating that the data were appropriate for factor analysis. Finally, Objective 4, which explored the role of digital technologies and information systems, found that digital technologies generally (mean = 4.7) have a dramatic influence on resource sharing, most notably through improved metadata management and cloud-based systems. New technologies have allowed fisheries libraries to manage large amounts of data more effectively, and global collaboration has become easier. In general, the study concluded that though digital technologies are central to improving resource sharing, strong collaboration, financial support, and staff training remain essential for maximizing the effectiveness of resource-sharing networks in fisheries libraries. These findings emphasize the need for continued investment in technological infrastructure and interlibrary cooperation to enhance information access and research capabilities within the fisheries domain.

Conclusion

In conclusion, this research underlines the importance of digital technologies, collaboration, and infrastructure in enhancing the effectiveness of resource sharing and networking in fisheries libraries. The findings demonstrate that the integration of cloud-based systems, online collaboration platforms, and real-time updates significantly improve access to specialized fisheries research, facilitating greater information exchange and collaboration between institutions. In addition, staff expertise and inter-library cooperation are factors that make the success of these networks possible because these aspects enhance the efficiency with which resources are shared and data handled. External partnerships and financial support further support sustainable resource-sharing practice, while new technologies that have been adopted allow the fisheries libraries to manage and share research more effectively. Further to the analysis, four important dimensions influencing effectiveness in sharing resources are determined: digital infrastructure, collaboration and communication, external partnerships, and organizational support. These dimensions stress that although technological tools are required, effective resource sharing depends on a mix of collaboration, strategic and systemic partnerships, and financial support. The study further indicates that geographical proximity and standardized systems can improve resource sharing efficiency, though this may depend on the particular context of each library network. Taking into account these findings, the study recommends that there be sustained investment in technological development, staff training, and strengthened inter-library cooperation to improve the resource-sharing capacity of fisheries libraries, thus improving access to information and research in the fisheries sector.

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