ORIGINAL ARTICLE

Diffusion of library services and service quality in a room in the Great Public Library of Lima

ABSTRACT

Diffusion of library services and user satisfaction are critical aspects of library management. Effective communication by the library has a direct impact on how users perceive and use these services, which affects the quality of service. The study seeks to determine the relationship between the diffusion of library services and the quality of service in the Sala de Ciencias Sociales de la Gran Biblioteca Pública de Limof Lima in 2024. The research is quantitative, correlational and cross-sectional, using Spearman's Rho test to measure correlation. Likert-type questionnaires were used for the diffusion of library services and Servperf (Service Performance) for service quality. The sample included 378 users of the Social Sciences Room of the Great Public Library of Lima. The results indicated a high, positive, and significant correlation between the diffusion of library services and perceived service quality (rs = .760), suggesting that better diffusion is associated with a more favorable perception of the service. Specific dimensions also showed significant positive correlations with service quality. This study confirms a positive and significant relationship between diffusion of library services and service quality, highlighting the importance of improving communication to increase usage and user perceptions of quality, with practical implications for optimizing diffusion strategies in public libraries.

Keywords: diffusion of library services; quality of services; public libraries.

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INTRODUCTION

In the age of digital culture and cutting-edge technologies, public libraries have established themselves as key agents of knowledge and literacy. International organizations such as the Programa de Información para Todos (PIPT) of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Federación Internacional de Asociaciones e Instituciones Bibliotecarias (IFLA) are promoting the implementation of the Manifiesto de Bibliotecas Públicas (UNESCO-IFLA, 2022), following the agreements reached at the 87th World Conference on Libraries and Information Systems in Geneva, Switzerland, in 2002. This document calls on public libraries to provide services of excellence and recognizes them as multicultural spaces where the production and exchange of scientific and cultural knowledge is promoted. UNESCO emphasizes that these centers are fundamental for building a solid education through the inclusion of values and ideals. In France, for example, the Manifesto has had a positive impact by revaluing the socio-cultural role of libraries in Strasbourg, a city that will be the World Book Capital in 2024. It has also inspired conferences in universities, especially among library and information science students, and workshops to improve library legislation. In this context, public libraries play an essential role in providing access to information, supporting learning, education and the cultural development of communities. However, they face challenges related to the diffusion and visibility of their services, which negatively affects users' perceptions of service quality. The lack of effective communication between library staff and users is a recurring problem that significantly affects user satisfaction (Zhai & Wang, 2016). The main obstacles include lack of information literacy skills, limited online customer relationship management (e-CRM) through fluid digital interactions (Arshi, 2021; Nguyen, 2021; Ardyan & Sugiyarti, 2018), and insufficient relevant material resources (Salman *et al.*, 2017). Therefore, it is crucial for libraries to develop communication strategies that ensure inclusion and accessibility for all users (Sánchez-Rodríguez & LoGiudice, 2018; Copeland, 2011). Improving communication between users and library staff would significantly increase perceptions of service quality (Mugo & Mathu, 2021).

In Peru, public libraries operate mainly in person, with limited resources, few specialized staff, and a notable lack of digital services, which makes it difficult to build strong relationships with their target audiences (Quispe-Farfán, 2020). This situation is exacerbated by the lack of library networks to facilitate the coordinated implementation of services, resulting in isolated initiatives and reduced visibility of available resources (Rivera & Pomahuacre, 2022). Strategies for disseminating library services, such as those outlined in the paper by Talavera-Ibarra (2019), highlight the importance of shared leadership between libraries, publishers, and other key stakeholders in promoting reading and access to information. This collaborative approach aims to overcome resource constraints and transform libraries into community development centers through cultural and educational activities, in line with the Sustainable Development Goals (SDGs). Compared to international initiatives, such as those promoted by UNESCO, these Peruvian strategies reflect a significant effort to link public libraries with cultural promotion at the local level and are in line with international best practices in library outreach.

It is clear that effective diffusion of library services is essential to improve the quality of service perceived by users. In this area, the study by Shivakumar and Tippanna (20-23) successfully implemented innovative diffusion strategies, adapting to the digital age by using platforms and social media to reach a wider audience. Their initiatives include targeted outreach campaigns, community partnerships, and the use of data analytics for informed decision-making. These innovations have resulted in greater user engagement, increased visibility of libraries as dynamic spaces, and improved public perception.

Similarly, Lux (2024) adopted innovative strategies to disseminate library services, focusing on actively defending libraries as pillars of the public good. This approach highlights the importance of creating narratives that link library needs to current societal challenges and opportunities. In addition, Lux (2024) engaged decision-makers through a clear and adaptable vision that enabled libraries to offer solutions to

local problems and position themselves as key players in society.

This study aims to determine the relationship between the diffusion of library services and the quality of service in the Social Sciences Room of the Great Public Library of Lima in 2024. This research is highly relevant because it seeks to improve the quality of service in public libraries through the effective and sustainable diffusion of their services. Libraries are essential to ensure equitable access to information and to support learning, education and cultural development in the community. Improving the diffusion of these services would significantly increase the use of available resources and the interaction between users and library staff, which would also improve the perception of service quality. Therefore, identifying and optimizing diffusion practices, both face-to-face and digital, is essential to strengthen the role of libraries as hubs of knowledge and culture in a society characterized by instant access to information and a growing dependence on social media.

Literature review

Diffusion of library services

The theory of diffusion of innovations provides a solid theoretical framework for understanding and managing the diffusion of library services, which is understood as the process by which an innovation is communicated over time through specific channels among members of a social system (Rogers, 2003). In the library field, this theory is applied to analyze how services are communicated and adopted among users, assessing aspects such as relative advantage, compatibility, complexity, trialability, and perception of services (Ponelis & Adoma, 2018). Kotler and Keller (2012) emphasize that service diffusion is an essential marketing strategy to inform and persuade users about the benefits of the services offered. Raynard (2017), in his research, applied Rogers' diffusion of innovations theory in academic libraries and demonstrated its effectiveness in the adoption of e-books. However, in public libraries, demographic diversity and unequal access to technology pose challenges that affect the perception of innovations, highlighting the need to adapt this theoretical framework to address cultural resistance and lack of technological training in this context.

Diffusion of library services is essential to ensure that users are informed about the available resources, which increases their use and improves their perception of the quality of the service, which they constantly evaluate according to their expectations and critical points of the service (Berry, 1998). This process includes strategies and actions to communicate and promote the service through various channels such as e-newsletters, emails, social networks, websites, posters, and promotional events (Hussien & Mokhtar, 2018). Effective communication through these channels would significantly improve users' perceptions of library services. This outreach represents an essential component of library marketing, which focuses on identifying and satisfying users' needs and wants through surveys and market research to extract information about the attributes users value most in libraries (Chegwe & Anaehobi, 2015).

Similarly, the paper by Stewart *et al.* (2017) has served as a starting point for recent studies exploring how libraries, both academic and public, have adopted new technologies such as social media and digital CRM to improve interactions with patrons. Over the past decade, the use of these tools to create more personalized and effective customer relationship management experiences has deepened. For its part, the work of Talavera-Ibarra (2019) has evolved with the inclusion of studies that analyze the use of new technologies, such as social networks and digital CRM, in Peruvian libraries to improve diffusion and personalize interaction with users, thus optimizing their reach and relevance.

In addition, libraries conduct training programs and workshops to educate users on how to use available services and resources, which improves overall user experience and satisfaction (Manjunatha & Shivalingaiah, 2004). Promoting and advertising library services through social media campaigns, promotional events, and local media advertisements is critical to engaging patrons (Hernon & Nitecki, 2001), given the complexity of consumer psychology and behavior (Schiffman & Wisenblit, 2015).

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Collaboration with other institutions and organizations also plays an important role in expanding the reach of outreach and strengthening the library's position within the community (Sanchez-Rodriguez & LoGiudice, 2018). This collaboration not only expands the reach of outreach, but also strengthens the perception of the library as an integral and relevant entity in society.

Information and communication technologies (ICTs) play a key role in the modernization and efficiency of library services, as they would significantly improve the diffusion and accessibility of these services (Krubu & Osahwaru, 2011). In the current context, characterized by immediacy and the use of digital platforms such as Facebook and Instagram, tools such as chatbots and error handling strategies facilitate the interaction of older users with information technologies, thus improving their experience and satisfaction (Lin *et al.*, 2021; Fairlie & Portocarrero, 2020). Therefore, several organizations, both public and private, are incorporating customer relationship management (CRM) strategies to optimize communication and improve online services. Recent studies seek innovative modalities to generate effective interactions with different customer segments (Guerola *et al.*, 2021; Batista *et al.*, 2020; Dalla *et al.*, 2018), allowing the dynamization and adaptation of organizational structures to people's needs. One of these modalities, considered an effective communication strategy for several decades, is Customer Relationship Management (CRM), which refers to a set of strategic communication practices focused on customer satisfaction and loyalty. As a communication strategy, it facilitates the knowledge of users' preferences and needs. Thus, several studies highlight its contribution, in addition to evaluating employee performance indicators to better satisfy users (Garrido & Padilla, 2011; Finnegan & Currie, 2010; Zablah *et al.*, 2004; Zikmund, 2004; Pan & Lee, 2003; Ryals and Knox, 2001).

Therefore, the importance of effective diffusion of library services lies in its ability to ensure that users are fully informed about available resources, which increases their use and improves the perception of service quality (Mugo and Mathu, 2021). An effective reference service, which includes accessibility, responsiveness, and

quality of responses, is essential to maintain harmonious relationships where strategic actions supported by innovative forms of communication in library services and user satisfaction prevail (Hussien & Mokhtar, 2018).

In summary, effective diffusion of library services not only ensures that users are aware of available resources, but also encourages their use and improves the perception of service quality. An efficient reference service characterized by accessibility, responsiveness, and quality of interactions is essential to establish strong relationships with users based on innovative communication strategies and meeting their needs (Hussien & Mokhtar, 2018).

Service quality

Another key factor in the continuous improvement of public libraries is the quality of service. This intangible element is fundamental to ensuring user satisfaction. Quality is defined as the overall assessment of service excellence based solely on the user's perception of the service received (Cronin & Taylor, 1992). The Servperf model developed by Cronin and Taylor assesses service quality along five dimensions: tangibility, reliability, responsiveness, assurance, and empathy, focusing on perceived performance rather than expectations (Cronin & Taylor, 1992). This model is derived from the Servqual (service quality) model, which attempts to measure quality by comparing users' expectations with their perceptions of the service received (Parasuraman *et al.*, 1988; Parasuraman *et al.*, 1985).

Additional research supports the relevance of these dimensions in the context of library services. This leads to the need to assess service quality in order to effectively communicate the value and performance of libraries, highlighting aspects such as accessibility, responsiveness, quality of interactions, and effective staff communication, elements that are widely recognized in the literature (Manjunatha & Shivalingaiah, 2004; Hernon & Nitecki, 2001). Responsiveness, tangibility, and reliability are critical aspects for users, suggesting that staff training and improved facilities are essential to increase their satisfaction (Ho *et al.*, 2023).

The quality of service in libraries affects not only user satisfaction, but also the overall perception of the institution and its continued use. High-quality service fosters user loyalty, increases the frequency of visits, and enhances the library's reputation. Efficient diffusion of services, coupled with constant quality assessment, would allow libraries to better adapt to changing user needs and maintain their relevance in a society increasingly accustomed to immediacy and digital culture (Chegwe & Anaehobi, 2015).

METHODS

Study design

This empirical study is quantitative and follows a non-experimental correlational design (Hernández-Sampieri & Torres, 2018). The study focuses on measuring the relationship between the diffusion of library services and user satisfaction in the social sciences room of the Great Public Library of Lima. Due to the observational nature of the study, a non-experimental correlational design was chosen to analyze the relationship between the diffusion of services and the quality of care without manipulating the variables. This approach makes it possible to identify correlations in a real context, although it recognizes the limitations of cross-sectional designs in establishing long-term causal relationships.

Population and sample

The study focuses on the Social Sciences Room of the Great Lima Public Library. The population consisted of 23,964 users who frequent this room to consult documents in areas such as education, psychology, law, philosophy, social sciences, linguistics and research theory. For the sample, 378 users were randomly selected to participate in the study. This sample size was determined using a 95% confidence level and a 5% margin of error.

Data collection tool

Library services diffusion questionnaire

To measure users' perceptions of the diffusion of library services in the Social Sciences Room of the Greater Lima Public Library, a specific questionnaire was designed to evaluate four key dimensions. Firstly, the accessibility of information; secondly, the visibility of services; thirdly, the effectiveness of communication channels; and finally, as a fourth dimension, the satisfaction of users in relation to diffusion. The questionnaire consists of 16 items, each of which was evaluated by the users using a 5-point Likert scale, where 1 means "strongly disagree" and 5 means "strongly agree". In addition, this instrument was subjected to the judgment of three experts to ensure its content validity, guaranteeing that the questions adequately reflect the dimensions evaluated.

On the other hand, the scales of the Diffusion of Library Services Questionnaire classify users' perceptions into three levels: low, fair, and high. A score between 16 and 37 is considered low, indicating a negative perception of the diffusion of services. A score between 38 and 59 is considered fair, reflecting a neutral perception. Finally, a score between 60 and 80 is considered high, indicating a positive perception of the diffusion of services in the Social Sciences Room of the Greater Lima Public Library.

Servperf library service quality questionnaire

A questionnaire based on the Servperf model was used to measure the perception of service quality in the Social Sciences Room of the Great Public Library of Lima. This scale focuses on users' perceptions, without taking into account their expectations. Its relevance lies in the fact that it is one of the most widespread and used tools for decades. The questionnaire assesses five key dimensions of service quality: tangibility, reliability, responsiveness, safety and empathy. It consists of 22 items that users have to rate on a 5-point Likert scale, where 1 is "strongly disagree" and 5 is "strongly agree. To ensure its content validity, the instrument was subjected to a three-expert review in which specialists in librarianship and service quality reviewed and validated the items to ensure that they adequately reflected the dimensions being assessed.

The Service Quality Questionnaire scales classify users' perceptions into three levels: low, fair, and high. A score between 22 and 51 is considered low, indicating a negative perception of service quality. A score between 52 and 81 is

considered fair, reflecting a neutral perception. Finally, a score between 82 and 110 is considered high, indicating a positive perception of service quality in the Social Sciences Room of the Greater Lima Public Library.

For example, the work of Torres and Vasquez (2015) highlights the importance of conducting empirical tests that demonstrate the psychometric robustness of instruments, such as the application of the Servqual model, and suggests that future studies use scales that have been validated in different service contexts. The validation and reliability of these instruments are essential to ensure that the results accurately reflect user perceptions.

Data analysis and procedure

In order to collect the data, a systematic plan was made based on stages and work schedules. A questionnaire was distributed to the users of the Social Sciences Room during their visits to the Great Public Library of Lima. The instrument was administered in a physical format to ensure greater participation. The data obtained were then analyzed using SPSS statistical software. A descriptive analysis was performed to summarize the demographic characteristics of the participants and their responses to the questionnaires.

Next, the Kolmogorov-Smirnov statistical test was selected to evaluate the normality of the data, as it is suitable for large samples. The results indicated that the study variables did not exhibit normality ($p < 0.05$). Since the assumptions of normality were not met, Spearman's Rho correlation coefficient (rs), a powerful non-parametric measure for identifying correlations in ordinal data or data with non-normal distributions, was applied. In this case, it was used to determine the relationship between the diffusion of library services and the quality of user services.

Ethical considerations

In this study, the confidentiality and anonymity of all participants was guaranteed. Informed consent was obtained prior to administration of the questionnaire to ensure that participants were fully informed of the research objectives and procedures. In addition, care was taken to ensure that the study was free of conflicts of interest and received no external funding, thus maintaining the impartiality and objectivity of the results. These measures ensured the ethical integrity of the research process and the protection of participants' rights, thus guaranteeing the transparency and appropriateness of the present study.

RESULTS

The questionnaires used to measure the prevalence of library services and service quality showed high internal consistency, with Cronbach's alpha values of 0.922 and 0.928, respectively, as shown in Table 1. This indicates that the items within each instrument are highly consistent with each other, confirming that both questionnaires are reliable in assessing their respective constructs.

Table 2 shows a balanced distribution by gender, with 47.88% of men and 52.12% of women. Regarding the level of education, there is a higher proportion of users with university education (39.84%) and secondary education (29.89%). In addition, the majority of respondents use library services on a weekly basis (50.00%). In terms of age groups, adults (40-59 years) predominate with 39.42%, followed by young adults (25-39 years) with 27.51%. These results reflect the importance of library services for people with a high level of education and their frequent use, especially by adults and young adults, who rely on selected and reliable information for their research and professional development.

Table 1
Reliability statistics

Questionnaires	Cronbach's alpha	No. of Items
Diffusion of Library Services	.922	16
Service Quality	.928	22

Note. Prepared by the author, 2024.

Table 2
Respondent characteristics

Variable	Category	N	%
Sex	Men	181	47.88
	Women	197	52.12
Level of Instruction	Primary	38	10.05
	Secondary	113	29.89
	Technical	75	19.83
	University	151	39.84
Frequency of use	Daily	76	20.11
of services	Weekly	189	50
	Monthly	113	29.89
Age group	Teenager (16-19)	38	10.05
	Youth (20-24)	60	15.87
	Young Adult (25-39)	104	27.51
	Adult (40-59)	149	39.42
	Senior (60+)	27	7.14

Note. Prepared by the author, 2024.

According to Table 3, and as best illustrated in Figure 1, respondents' perceptions of the distribution of library services are divided into 37.8% who consider it high, 33.9% low, and 28.3% regular. In contrast, the majority rate the quality of service as high (46.6%) or fair (45.5%), reflecting a generally positive perception. These results underscore the need to improve perceptions of the diffusion of library services. It should be noted that the regular indicator is high, suggesting that users identify critical aspects that the educational institution should address in order to improve these elements and increase their rating.

Figure 1 shows a positive relationship between the diffusion of library services and the perceived quality of service at the Greater Lima Public Library. As diffusion increases, service quality improves, as indicated by the upward slope of the regression line. However, at low levels of diffusion, considerable dispersion is observed, suggesting variability in the perception of quality. At high levels of diffusion, quality is more consistently high, although there are some outliers where high diffusion does not translate into high perceived quality. This may indicate the presence of additional factors that influence the user experience beyond diffusion. The relationship is not strictly linear, suggesting that while diffusion is an important factor, other aspects also play a critical role in the perception of service quality.

Similarly, Table 4 shows that the diffusion of library services has a high positive correlation with quality of care ($rs = 0.760$), indicating that greater diffusion is associated with better perceptions of quality. Among the specific dimensions, information accessibility has a moderate positive correlation with service quality ($rs = 0.626$) and with empathy ($rs = 0.588$). Visibility of services has a high positive correlation with service quality ($rs = 0.678$), with moderate positive correlations in tangibles ($rs = 0.605$) and safety ($rs = 0.599$). The effectiveness of communication channels shows a high positive correlation with service quality ($rs = 0.690$), especially in responsiveness ($rs = 0.640$) and reliability ($rs = 0.634$). Finally, user satisfaction with outreach has a moderate positive correlation with service quality ($rs = 0.674$), empathy ($rs = 0.621$), and responsiveness ($rs = 0.597$). A noteworthy aspect of these results is that access to information has a moderate positive correlation with service quality and empathy, suggesting that in order to provide efficient information, it is necessary to improve service levels and effectively understand the needs and desires of users in order to provide a sustainable and higher quality service.

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Table 3

Levels of library service diffusion and service quality

Variable	Level	N	%
Library Service	High	143	37.8
Diffusion	Regular	107	28.3
	Low	128	33.9
Service Quality	High	176	46.6
	Regular	172	45.5
	Low	30	7.9

Note. Prepared by the author, 2024.

Figure 1

Scatterplot: service diffusion vs. service quality
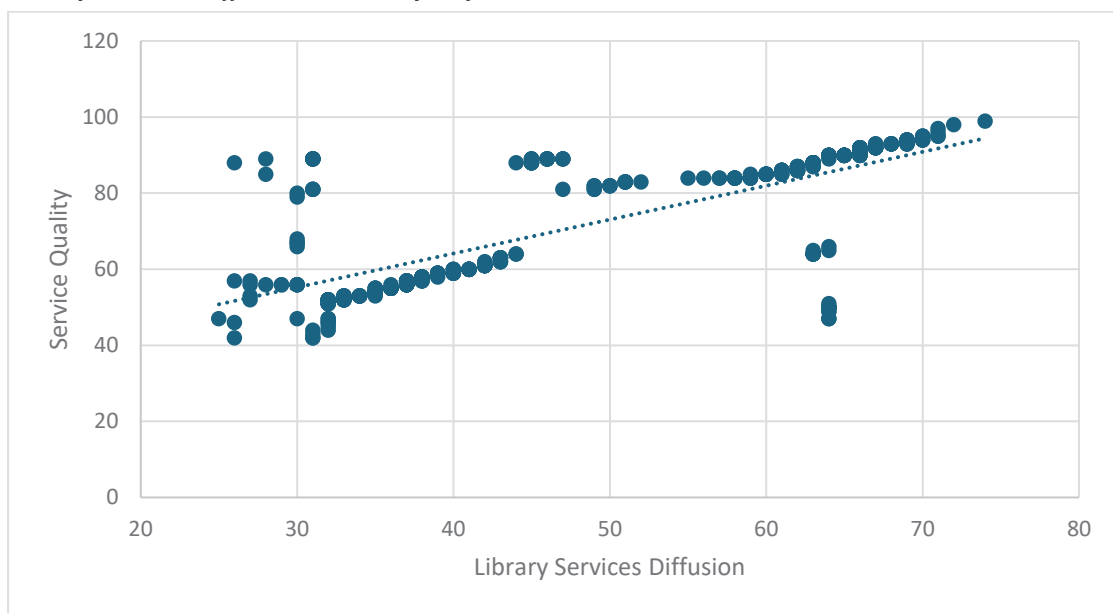
Note. Prepared by the author, 2024.

Table 4

Correlations of library services outreach and service quality

Variables and dimensions	Service Quality	Tangible	Reliability	Responsiveness	Safety	Empathy
Diffusion of library services	.760**	.608**	.659**	.661**	.644**	.668**
Accessibility of Information	.626**	.539**	.557**	.566**	.558**	.588**
Visibility of Services	.678**	.605**	.594**	.595**	.599**	.609**
Effectiveness of Communication Channels	.690**	.549**	.634**	.640**	.600**	.620**
Satisfaction with Diffusion	.674**	.542**	.618**	.597**	.584**	.621**

Note. ** Correlation is significant at the 0.01 level (two-tailed). Prepared by the author, 2024.

Although the results of the study show a significant positive correlation between library outreach and quality of service, the practical implications for libraries need to be further explored. The high correlation (rs = 0.760) indicates that improving outreach has a direct impact on users' perceptions of service quality. In operational terms, however, this suggests that libraries should invest in more efficient and diversified communication strategies, using both traditional and digital channels, to ensure that information effectively reaches all user groups. In addition, it is critical that these initiatives are sustainable over the long term, prioritizing accessibility and visibility of services. This could include improvements in digital infrastructure and ongoing staff training to adapt to new technologies and changing user needs.

DISCUSSION

According to the objectives set and the results obtained, the study shows a significant and highly positive correlation between the diffusion of library services and the quality of service perceived by users (rs = .760). This relationship suggests that more and better diffusion of services is associated with more favorable perceptions of service quality. This finding is consistent with the theory of diffusion of innovations, which suggests that effective communication of an innovation-in this case, library services-through multiple channels improves its acceptance and perception among users (Rogers, 2003). In the library setting, the effectiveness of communication and promotion of services directly influences users' perceptions of quality.

The link between outreach and perceptions of service quality is also supported by library marketing research. Chegwe and Anaehobi (2015) argue that effective outreach enables libraries to better adapt to changing user needs and maintain their relevance in the community. In addition, continuous evaluation of service quality is essential to ensure that libraries are adequately responding to user expectations. In the same vein, Doyle (1995) emphasizes that measuring user perceptions of service quality is fundamental to identifying areas for improvement and meeting user expectations.

The Servperf model reinforces the idea that perceptions of service quality are based on the actual performance of the services provided. According to this model, effective diffusion would improve this perception because users would be better informed about what to expect and how to benefit from the services available (Cronin & Taylor, 1992). Therefore, the implementation of effective diffusion and communication strategies is crucial to improve the perception of the quality of care, thus ensuring user satisfaction and loyalty (Ezell *et al.*, 20-22; German & Hartnett, 2018).

In terms of specific findings, the information accessibility dimension showed a moderate positive correlation with service quality (rs = .626). This finding indicates that when users have easy access to information about library services, their perception of quality improves. This is consistent with the findings of Chegwe and Anaehobi (2015), who emphasized that effective and accessible diffusion is key to meeting users' information needs and improving their experience.

Service visibility also showed a moderate positive correlation with service quality (rs = .678). This underscores the importance of actively promoting library services through promotional materials and visibility campaigns. Previous studies have shown that effective visibility would significantly increase their use and positive perception by users (Hussien & Mokhtar, 2018).

Another relevant dimension is the effectiveness of communication channels, which showed a moderate positive correlation with service quality (rs = .690). This result highlights the need to use multiple channels, such as social networks, newsletters, and in-person events, to reach different user segments and ensure that information is communicated effectively (Sánchez-Rodríguez & LoGiudice, 2018). Effective communication not only informs users about available services, but also contributes to the perception of an efficient and accessible service.

For its part, the dimension of user satisfaction with diffusion showed a moderate positive correlation with service quality (rs = .674). This indicates that when users are satisfied with the way library services are communicated and

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promoted to them, they tend to have a more favorable perception of service quality. Thus, it is emphasized that service quality is a critical indicator of the effectiveness of public libraries, which should focus on innovative strategies to maximize it and increase the level of satisfaction (Hernon & Nitecki, 2001; Manjunatha & Shivalingaiah, 2004).

The paper by Bartolacci *et al.* (2024) highlights how the use of big data and efficiency analysis has enabled better performance evaluation, which is extrapolated to public libraries to optimize the diffusion of their services. For their part, Fuah and Ganggi (2022) highlight how the elements of communication, social systems, time, and innovation play a crucial role in the adoption and diffusion of new ideas in the library field, highlighting the relevance of digital channels in the diffusion of innovations. Likewise, the work of Cepparulo & Zanfiel (2021) provides an important comparison with the diffusion of library services, as it shows how structural and social factors influence the adoption of innovations in public services in different regions. In line with international studies, these three papers confirm that successful diffusion depends on strong policy coordination at the national and local levels, as well as the availability of human capital and digital resources, showing consistency with previous findings in library environments that rely on similar supportive contexts.

Future research should explore how digitization of library services affects users' perceptions of quality and satisfaction in different socioeconomic and geographic contexts. Comparing these effects in libraries in different regions and levels of technological access would provide a broader and more generalizable view of the factors that improve service quality. Another relevant line of research is to measure the effectiveness of digital communication, especially on public library websites, and its impact on user retention. In addition, the implementation of digital reference services in academic libraries has been shown to be a beneficial innovation that increases accessibility and user satisfaction. Technology-based strategies have proven their effectiveness and urgency to improve the organization and accessibility of information, as the current user, as a digital traveler, seeks efficient services in real time (Niu, 2020; White, 2001).

CONCLUSIONS

It is concluded that there is a significant and highly positive relationship between diffusion of library services and quality of service, with a correlation value (rs = .760). This indicates that effective diffusion of services significantly improves users' perceptions of service quality. Accessibility of information about services showed a moderate positive correlation (rs = .626), suggesting that users value easy access to clear and detailed information, thus improving their experience with the library. The visibility of services through various communication channels, such as social networks and promotional events, also showed a moderate positive correlation (rs = .678). The effectiveness of these channels was critical (rs = .690) in ensuring that information effectively reached different user segments. In addition, user satisfaction with the way library services are communicated and promoted also showed a moderate positive correlation (rs = .674).

Although the results of this study offer strong conclusions about the positive relationship between library outreach and service quality, it is important to recognize the limitations inherent in the context of a specific library. Caution should be exercised in generalizing these findings to other library environments with different characteristics, such as differences in resource access and user profile.

The significant and positive relationship between diffusion of library services and quality of care underscores the importance of implementing effective communication strategies. This study highlights the need to use multiple channels to ensure that information reaches users. In particular, the responsiveness and empathy of library staff play a critical role in user satisfaction, suggesting that personalized and efficient attention is fundamental to a positive library experience. In light of these findings, it is clear that libraries should invest in improving the diffusion of their services by ensuring that information is accessible, clear, and distributed through multiple media. One of the most relevant channels is digital, with the use of interactive platforms that promote dynamic hypertexts, integrating images, layout and innovative texts to capture the interest of the

entire student community, from regular basic education to technical and university.

For future research, it would be relevant to explore how emerging technologies, such as chatbots and virtual assistants, could optimize interactions and improve perceptions of service quality in public libraries, thereby facilitating a more personalized and accessible service for users.

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Conflict of Interest

Author Contributions

Erika Alicia Santos Alata (lead author): conceptualization, data curation, formal analysis, fund raising, research, methodology, project administration, resources, validation, writing (original draft, review, and editing).