SYSTEM QUALITY AND USERS' SATISFACTION WITH ONLINE PUBLIC ACCESS CATALOGUE AMONG UNDERGRADUATES OF FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE, NIGERIA

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Abstract

 This study investigates how system quality affects users' satisfaction with the Online Public Access Catalogue (OPAC) among undergraduate students at the Federal University of Technology, Akure (FUTA). As universities increasingly rely on digital resources, understanding how system quality influences user satisfaction is crucial for the development and maintenance of effective information systems. This research employs a quantitative approach, surveying 400 undergraduates to assess their perceptions of the OPAC's system quality and its influence on their satisfaction. Data analysis, including descriptive statistics and regression analysis, found a substantial positive correlation between system quality and user satisfaction, highlighting the importance of system reliability, ease of use, and interface design. Recommendations for enhancing user satisfaction through improved system quality are also discussed.

Keywords: System Quality, Users' Satisfaction, Online Public Access Catalogue, FUTA, Digital Libraries

Introduction

The integration of digital technologies into academic libraries has revolutionized the way students' access and interacts with information. As universities strive to meet the increasing demand for efficient and comprehensive access to scholarly resources, the Online Public Access Catalogue (OPAC) has emerged as a pivotal tool within digital libraries. The Federal University of Technology, Akure (FUTA), like many institutions, has adopted the OPAC in its library to enhance the academic experience of its students by providing easy access to a vast array of library resources. However, the effectiveness of the OPAC in fulfilling this role is significantly influenced by its system quality, which in turn affects user satisfaction. Understanding the relationship between system quality and user satisfaction is essential for the ongoing development and optimization of the OPAC at FUTA library.

System quality is a critical determinant of the success of any information system, including digital libraries. Al-Kofahi, Hassan & Mohamad (2020) in their widely recognized Information Systems Success Model, identify system quality as a key component that influences user satisfaction, usage, and ultimately, the success of an information system. System quality encompasses various dimensions, including reliability, ease of use, responsiveness, and interface design. Each of these dimensions contributes to the overall effectiveness and usability of the system, thereby shaping users' perceptions and experiences.

In the context of digital libraries, system quality plays an even more crucial role, given the increasing reliance of students and academic staff on digital resources for their academic and research activities. A high-quality system is expected to provide users with seamless access to the information they need, with minimal disruptions and maximum efficiency. Conversely, a system that is perceived as unreliable, difficult to navigate, or slow to respond can lead to frustration, decreased usage, and ultimately, dissatisfaction among users (Fitriati, et.al. 2020). Therefore, ensuring high system quality is essential for enhancing user satisfaction and promoting the continued use of the OPAC.

User satisfaction is a key metric for evaluating the success of an information system. It indicates how well the system fulfils the expectations and requirements of its users. In the case of the OPAC at FUTA library, user satisfaction is influenced by various factors, which include the quality of the system, the relevance and accuracy of the information provided, and the quality of service delivered by the library staff. Among these factors, system quality is arguably the most significant, as it directly impacts the user experience. A well-functioning system that is easy to use and reliable is likely to lead to higher levels of satisfaction, while a system with frequent issues and usability problems can result in dissatisfaction and reduced usage (United Nations, 2020).

The relationship between system quality and user satisfaction has been extensively studied in various contexts, including e-commerce, online learning platforms, and digital libraries. For example, Widiastuti, Haryono, & Said (2019) identified that system quality was a key factor predicting user satisfaction within management information systems. Likewise, Mahmud, et.al. (2023) showed that system quality directly influenced user satisfaction with government online services. These studies highlight the importance of system quality in shaping users' perceptions and experiences, and they suggest that improvements in system quality can lead to corresponding increases in user satisfaction.

In the realm of digital libraries, various studies have explored how system quality affects user satisfaction. For instance, Okolo & Ivwighreghweta (2023) examined the administration and management of digital libraries, and found that systems quality, particularly ease of use and reliability, was a crucial factor in user satisfaction. Similarly, Abubakar & Hassan (2013) investigated the link between system quality and user satisfaction in digital library services at Nigerian universities, revealing a strong positive correlation. Their research highlighted the importance of ongoing enhancements in system design and functionality to better meet users' needs and expectations.

Given the importance of system quality in determining user satisfaction, it is essential to assess and understand how these factors interact within the context of the OPAC at FUTA library. The OPAC serves as a crucial resource for undergraduates at the library, providing them with access to a wide range of academic materials that support their studies and research activities. However, the extent to which the OPAC meets the needs of these students depends largely on the quality of the system. If the OPAC is perceived as reliable, easy to use, and efficient, it is likely to contribute positively to students' academic experience and satisfaction. On the other hand, if the system is seen as difficult to navigate, prone to errors, or slow to respond, it may hinder students' ability to effectively use the available library resources, leading to dissatisfaction and decreased usage.

Understanding the relationship between system quality and user satisfaction is not only important for improving the OPAC at FUTA library but also for informing broader efforts to enhance digital library services in Nigerian universities. As more institutions adopt digital libraries and Online Public Access Catalogues, there is a growing need to ensure that these systems are designed and maintained with a focus on quality and user experience. This requires ongoing evaluation and feedback from users, as well as a commitment to continuous improvement in system design and functionality.

The present study seeks to investigate the impact of system quality on user satisfaction with the OPAC among undergraduates at FUTA library. By examining students' perceptions of the OPAC's system quality and its influence on their satisfaction, the study aims to provide insights that can guide the development and enhancement of digital library services at FUTA library and similar institutions. The findings of this study are expected to contribute to the existing body of knowledge on system quality and user satisfaction in digital libraries, with practical implications for library administrators, system designers, and policymakers.

Therefore, the integration of digital technologies into academic libraries has transformed the way students' access information, with the OPAC playing a central role in this transformation at FUTA library. System quality is a critical factor in determining the success of the OPAC and its impact on user satisfaction. Understanding the relationship between system quality and user satisfaction is essential for ensuring that the OPAC meets the needs of undergraduates at FUTA library and supports their academic success. This study aims to explore this relationship, providing valuable insights for improving the OPAC and enhancing the overall quality of digital library services at FUTA library.

Research Question

1. What is the level of perceived quality of Online Public Access Catalogue (OPAC) among undergraduates at the Federal University of Technology, Akure library?

2. What is the level of user satisfaction with OPAC by undergraduates at the Federal University of Technology, Akure library?

3. What is the relationship between system quality of OPAC and user satisfaction at the Federal University of Technology, Akure library?

4. What is the relative influence of overall satisfaction, system effectiveness and frequency of use on user satisfaction with OPAC among undergraduate students of Federal University of Technology, Akure?

Review of Related Literature

System quality is a foundational concept in the study of information systems, often linked to the success and effectiveness of these systems across various domains. Al-Kofahi, in their paper titled "Information Systems Success Model," Hassan and Mohamad (2020) highlighted that system quality is a crucial factor affecting user satisfaction, system usage, and overall system success. System quality encompasses various attributes such as reliability, usability, responsiveness, and efficiency (Fitriati, et. al., 2020). These attributes collectively contribute to how users perceive and interact with the system, ultimately determining their satisfaction and willingness to continue using it.

The evolution of system quality research has seen the exploration of different dimensions that contribute to the overall effectiveness of information systems. Reliability, for instance, refers to the consistency of the system in performing its intended functions without errors. Usability pertains to the ease with which users can navigate and interact with the system. Responsiveness is concerned with the system's ability to provide timely and relevant feedback, while efficiency focuses on how quickly and resource-effectively the system can perform its tasks (United Nations, 2020).

In academic environments, particularly in the context of digital libraries and Online Public Access Catalogues (OPACs), system quality is crucial. It directly impacts students' ability to access and retrieve information, which is essential for their academic success. A high-quality system allows users to efficiently locate and utilize academic resources within and beyond the library, thereby enhancing their academic performance and satisfaction. Conversely, a system that lacks quality may frustrate users, leading to decreased usage and dissatisfaction (Hooda, et. al., 2023).

Digital libraries have become an integral part of academic institutions, providing students and researchers with access to a wealth of digital resources such as books, journals, theses, and other scholarly materials. The quality of the system underlying these digital libraries is pivotal to their success, as it determines how effectively users can interact with the library's resources. System quality in digital libraries involves multiple factors, including ease of use, reliability, accessibility, and interface design (Okolo & Ivwighreghweta, 2023).

This is a critical component of system quality in digital libraries, as it influences how quickly and effectively users can navigate the system to find the information they need. A system that is easy to use enhances user satisfaction by allowing users to accomplish their tasks without unnecessary complications. Gonzalez-Holland, et.al, (2017) argues that usability is a key

determinant of a system's success, particularly in contexts where users need to access information quickly and efficiently, such as in digital libraries.

Reliability refers to the system's ability to consistently perform its intended functions without errors or interruptions. In the context of digital libraries, this is particularly important as users rely on the system to access critical academic resources. System failures or errors can disrupt users' academic work, leading to dissatisfaction and a loss of trust in the system (Fitriati, et. al., 2020). Therefore, ensuring the reliability of digital library systems is essential for maintaining user satisfaction and promoting continued use.

Accessibility is another important dimension of system quality in digital libraries. It pertains to the system's ability to provide users with easy access to information, regardless of their location or the device they are using. The increasing prevalence of mobile devices and remote access to digital resources has made accessibility a key consideration in system design (Mohammed, et.al., 2018). A system that is accessible across various platforms and locations is likely to attract more users and enhance their satisfaction, as it allows them to access information at their convenience.

The design of the user interface plays a significant role in shaping users' perceptions of system quality in digital libraries. A well-designed interface that is visually appealing and easy to navigate can enhance the overall user experience, encouraging more frequent use of the system. Conversely, a poorly designed interface can lead to confusion and frustration, reducing user satisfaction and discouraging use (United Nations, 2020). Therefore, careful attention to interface design is critical in the development and maintenance of digital library systems.

Various studies have underscored the significance of these factors in assessing the quality of digital library systems. For example, Okolo & Ivwighreghweta (2023) investigated the administration and management of digital libraries, and discovered that system quality, especially ease of use and reliability, was a major determinant of user satisfaction. Likewise, Abubakar & Hassan (2013) examined the connection between system quality and user satisfaction with digital library services in Nigerian universities, revealing a strong positive correlation between system quality and user satisfaction. These studies underscore the need for continuous improvement in system design and functionality to meet users' evolving needs and expectations.

User satisfaction is a key indicator for assessing the effectiveness of information systems, as it gauges how well a system fulfils the expectations and requirements of its users. In digital libraries, user satisfaction is affected by multiple factors, including system quality, information quality, and service quality (Al-Kofahi, Hassan & Mohamad, 2020). Among these factors, system quality is often considered the most significant, as it directly impacts the user experience.

Early research on user satisfaction focused on understanding the role of system characteristics such as ease of use, reliability, and functionality in shaping users' perceptions of the system (Mekadmi & Louati, 2018). As the field evolved, researchers began to explore the impact of other factors, such as information quality and service quality, on user satisfaction (Widiastuti,

Haryono & Said, 2019). In digital libraries, user satisfaction is closely tied to the quality of the system, as users rely on the system to access and retrieve academic resources.

A high-quality system that is easy to use, reliable, and efficient is likely to lead to higher levels of user satisfaction, as users can accomplish their tasks with minimal effort and frustration. Conversely, a system that is difficult to navigate, prone to errors, or slow to respond can result in dissatisfaction and reduced usage (Fitriati, et. al., 2020). Ensuring high system quality is therefore essential for enhancing user satisfaction and promoting the continued use of digital libraries.

Numerous studies have investigated how system quality relates to user satisfaction across different domains, such as e-commerce, online learning platforms, and digital libraries. For instance, Forsgren, et.al, (2016) discovered that system quality was a major predictor of user satisfaction on e-commerce websites. Similarly, Seo & Um (2022) showed that system quality directly influenced user satisfaction with online learning platforms. These studies highlight the importance of system quality in shaping users' perceptions and experiences, suggesting that improvements in system quality can lead to corresponding increases in user satisfaction. In the realm of digital libraries, various studies have explored how system quality affects user satisfaction. Okolo & Ivwighreghweta, (2023) identified that system quality, especially regarding ease of use and reliability, was a crucial factor influencing user satisfaction among students utilizing digital libraries. Similarly, Abubakar & Hassan (2013) found a strong positive correlation between system quality and user satisfaction in Nigerian universities' digital library services. These findings emphasize the need for continuous improvements in system design and functionality to meet users' needs and expectations.

Online Public Access Catalogues (OPACs) are a critical component of digital libraries, offering users access to a diverse array of academic resources such as books, journals, theses, and other scholarly materials. The quality of the system underpinning the OPAC is crucial to its success, as it determines how effectively users can interact with the catalogue and retrieve the needed information. In academic institutions like the Federal University of Technology, Akure (FUTA), the OPAC plays a vital role in supporting students' academic and research activities. Therefore, understanding the relationship between system quality and user satisfaction with the OPAC is essential for ensuring its continued effectiveness and usability. The concept of system quality in the context of OPACs encompasses several dimensions, including ease of use, reliability, responsiveness, and interface design. Each of these dimensions contributes to the overall effectiveness and usability of the OPAC, shaping users' perceptions and experiences. Ease of use is critical in determining how quickly and efficiently users can locate and retrieve the information they need. A user-friendly OPAC that is easy to navigate and provides intuitive search functions is likely to lead to higher levels of satisfaction, as users can accomplish their tasks with minimal effort (Gonzalez-Holland, et.al., 2017).

Reliability is another important dimension of system quality in the context of OPACs. A reliable OPAC consistently performs its functions without errors or interruptions, ensuring that users can access the information they need when they need it. System failures or errors can lead to significant disruptions in users' academic work, resulting in dissatisfaction and

decreased trust in the OPAC (United Nation, 2020). Ensuring the reliability of the OPAC is, therefore, critical to maintaining user satisfaction and promoting continued use. Responsiveness, or the system's ability to provide timely feedback and support to users, is also an important aspect of system quality in OPACs. A responsive OPAC that quickly processes search queries and provides relevant results is likely to enhance users' satisfaction, as it allows them to efficiently complete their tasks. Conversely, a slow or unresponsive OPAC can lead to frustration and dissatisfaction, particularly when users are working under time constraints (Fitriati, et. al., 2020). Interface design plays a significant role in shaping users' perceptions of system quality in OPACs. A well-designed interface that is both visually appealing and user-friendly can improve the overall user experience and promote more frequent use of the OPAC. Conversely, a poorly designed interface can lead to confusion and frustration, reducing users' satisfaction and willingness to use the OPAC (Hooda, et. al., 2023). Therefore, attention to interface design is essential in the development and maintenance of OPACs.

Various studies have investigated the link between system quality and user satisfaction with OPACs in academic environments. For example, Ali & Nayan (2010) explored the factors influencing user satisfaction with OPACs in Malaysian universities. They found that system quality, particularly in terms of ease of use and reliability, was a significant determinant of user satisfaction. Similarly, Akpom & Okoro (2015) investigated access to print and electronic resources in academic libraries in Nigeria. Their findings indicated that system quality had a strong positive correlation with user satisfaction, emphasizing the need for continuous improvements in system design and functionality to meet users' needs and expectations.
Despite the importance of system quality in determining user satisfaction with OPACs, there are several challenges associated with ensuring high system quality. These challenges can be broadly categorized into technological, organizational, and user-related factors.

One of the primary technological challenges in maintaining high system quality in OPACs is the rapid pace of technological change. As new technologies emerge, digital library systems must continuously adapt to remain relevant and effective. This requires ongoing investment in system upgrades, as well as the development of new features and functionalities that meet users' evolving needs (Vandana, Purkayastha & Kumar, 2020). However, technological advancements also bring challenges related to system integration, data migration, and the compatibility of new systems with existing infrastructure (Rahimi, et.al., 2018). These challenges can affect the reliability, usability, and overall quality of the OPAC, potentially leading to user dissatisfaction.
Organizational challenges are another significant factor affecting system quality in OPACs. The successful implementation and maintenance of an OPAC require strong institutional support, including adequate funding, skilled personnel, and effective management practices. However, many academic institutions face budget constraints, which can limit their ability to invest in the necessary technology and human resources to maintain high system quality (Okoye & Ugwuanyi, 2012). Additionally, organizational challenges related to governance, decision-making, and coordination among different departments can also impact the quality of the OPAC.

User-related challenges are also critical in ensuring system quality in OPACs. User diversity, in terms of experience, skills, and expectations, can pose challenges in designing a system that meets the needs of all users. For example, while some users may prefer a simple and intuitive interface, others may require advanced features and functionalities to support their research activities (Malaquias & Albertin, 2019). Additionally, user feedback and engagement are essential for identifying areas for improvement in the system. However, encouraging users to provide feedback and actively participate in system development can be challenging, particularly in large and diverse academic communities.

Methodology

This study employs a quantitative research design to investigate the relationship between system quality and user satisfaction with the OPAC among undergraduates at FUTA. A structured questionnaire was used to collect data from the respondents. The study population comprises all undergraduates of FUTA who have used the OPAC. A sample of 400 students was randomly selected from various schools/faculties to ensure representativeness. The sample size was determined using a simple random sampling technique, ensuring that every student had an equal chance of being selected. Data were collected using a self-administered questionnaire, which was designed to measure students' perceptions of system quality and their satisfaction with the OPAC. The questionnaire included Likert-scale items ranging from 1 (strongly disagree) to 5 (strongly agree) to capture respondents' views on various aspects of system quality and satisfaction. Data were analysed using both descriptive and inferential statistics. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the data. Inferential statistics, specifically correlation and regression analyses, were used to examine the relationship between system quality and user satisfaction. The reliability of the questionnaire was tested using Cronbach's alpha.

Results

Demographic Characteristics of Respondents

Table 1: Demographic Characteristics of the respondents

Demographic variable	Frequency	Percentage (%)
Gender		
Male	206	52.0
Female	194	48.0
Year of study		
100 level	70	17.5
200 level	85	21.3
300 level	93	23.3
400 level	71	17.8
500 level	81	20.1
School/Faculty		
Science	145	36.3
Engineering	115	28.8
Environmental	85	21.3
Agriculture	55	13.6

System Quality (Reliability, Ease of Use, and Interface Design) Perception

Table 2: Perception of system quality among undergraduate students of FUTA

Question Item	SA	A	D	SD	Mean	St.D
Reliability						
The OPAC is consistently available whenever I need to use it.	180 (45%)	170 (42.5%)	30 (7.5%)	20 (5%)	3.28	0.77
The OPAC rarely experiences downtime or errors.	175 (43.75%)	165 (41.25%)	40 (10%)	20 (5%)	3.24	0.85
The search results provided by the OPAC are accurate and reliable.	185 (46.25%)740	160 (40%)480	45 (11.25%)	10 (2.5%)	3.3	0.81
The OPAC loads quickly and processes my queries without delay.	190 (47.5%)760	150 (37.5%)450	55 (3.75%)	5 (1.25%)	3.31	0.76
I trust the OPAC to provide up-to-date and accurate information.	195 (48.75%)780	155 (38.75%)465	40 (10%)	10 (2.5%)	3.34	0.72
Ease of Use						
The OPAC is easy to navigate, even for first-time users.	175 (43.75%)	165 (41.25%)	40 (10%)	20 (5%)	3.28	0.78
I can find the information I need on the OPAC without difficulty.	190 (47.5%)760	150 (37.5%)450	55 (3.75%)	5 (1.25%)	3.31	0.77
The search functions of the OPAC are intuitive and user-friendly.	195 (48.75%)780	155 (38.75%)465	40 (10%)	10 (2.5%)	3.34	0.81
The instructions and help features provided by the OPAC are clear and helpful.	190 (47.5%)760	150 (37.5%)450	55 (3.75%)	5 (1.25%)	3.31	0.80
I can complete tasks on the OPAC with minimal effort.	175 (43.75%)	165 (41.25%)	40 (10%)	20 (5%)	3.24	0.89

Interface Design						
The layout of the OPAC is visually appealing and easy on the eyes.	185 (46.25%)740	160 (40%)480	45 (11.25%)	10 (2.5%)	3.3	0.85
The design of the OPAC allows for quick and efficient browsing.	190 (47.5%)760	150 (37.5%)450	55 (3.75%)	5 (1.25%)	3.31	0.88
The color scheme and font used in the OPAC enhance readability.	195 (48.75%)780	155 (38.75%)465	40 (10%)	10 (2.5%)	3.34	0.78
The OPAC interface is well-organized and logically structured.	180 (45%)	170 (42.5%)	30 (7.5%)	20 (5%)	3.28	0.95
I find the overall aesthetic of the OPAC to be modern and professional.	175 (43.75%)	165 (41.25%)	40 (10%)	20 (5%)	3.24	0.77

Respondents' perceptions of system quality are summarized in Table 2. The results indicate that the majority of students rated the OPAC's system quality positively. The mean scores for the various dimensions of system quality (reliability, ease of use, and interface design) were all above 4.0, indicating a high level of satisfaction with these aspects of the system. The table presents a comprehensive analysis of user perceptions regarding the system quality of the Online Public Access Catalogue (OPAC) based on three dimensions: Reliability, Ease of Use, and Interface Design. The results show generally high levels of satisfaction across all three dimensions, as indicated by the mean values, which range from 3.24 to 3.34 on a 4-point scale. In the dimension of Reliability, a significant proportion of respondents strongly agreed that the OPAC is consistently available, rarely experiences downtime, provides accurate search results, loads quickly, and delivers up-to-date information. The mean scores for these items (ranging from 3.24 to 3.34) indicate that while the OPAC is generally reliable, there is still room for improvement, especially in minimizing downtime and enhancing the speed of the system. The standard deviations, particularly for the item "The OPAC loads quickly and processes my queries without delay" (SD = 0.76), suggest relatively consistent experiences among users regarding system performance, with some variability in responses.

The Ease of Use and Interface Design dimensions similarly reflect positive user experiences. The majority of respondents agreed or strongly agreed that the OPAC is easy to navigate, intuitive, and user-friendly, with mean scores hovering around 3.28 to 3.34. This suggests that users find the OPAC straightforward to use, although the standard deviations, especially for

items like "I can complete tasks on the OPAC with minimal effort" (SD = 0.89), indicate some variability in ease of use across the user base. In terms of Interface Design, users appreciated the visual appeal, efficient browsing capabilities, and modern aesthetics of the OPAC, as reflected by high agreement rates and mean scores (e.g., "The colour scheme and font used in the OPAC enhance readability" with a mean of 3.34). The slightly higher standard deviations in this dimension, particularly for the item "The OPAC interface is well-organized and logically structured" (SD = 0.95), suggest diverse opinions on the interface's organization, indicating potential areas for further enhancement to meet varied user preferences.

User Satisfaction Levels

Table 3: Responses to User Satisfaction Dimensions (Overall Satisfaction, System Effectiveness, and Frequency of Use)

Question Item	SA	A	D	SD	Mean	SD
Overall Satisfaction						
I am generally satisfied with the performance of the OPAC.	185 (46.25%)740	160 (40%)480	45 (11.25%)	10 (2.5%)	3.3	0.85
The OPAC meets my expectations for an academic resource.	190 (47.5%)760	150 (37.5%)450	55 (3.75%)	5 (1.25%)	3.31	0.88
The OPAC enhances my research and study experience.	195 (48.75%)780	155 (38.75%)465	40 (10%)	10 (2.5%)	3.34	0.78
I would recommend the OPAC to other students.	180 (45%)	170 (42.5%)	30 (7.5%)	20 (5%)	3.28	0.95
The overall experience of using the OPAC is positive.	175 (43.75%)	165 (41.25%)	40 (10%)	20 (5%)	3.24	0.77
System Effectiveness						
The OPAC helps me efficiently find the resources I need.	175 (43.75%)	165 (41.25%)	40 (10%)	20 (5%)	3.28	0.78
The OPAC's search functions are effective in retrieving relevant results.	190 (47.5%)760	150 (37.5%)450	55 (3.75%)	5 (1.25%)	3.31	0.77

The OPAC improves the quality of my academic work.	195 (48.75%)780	155 (38.75%)465	40 (10%)	10 (2.5%)	3.34	0.81
The OPAC provides accurate and useful information.	190 (47.5%)760	150 (37.5%)450	55 (3.75%)	5 (1.25%)	3.31	0.80
I can rely on the OPAC to support my academic research.	175 (43.75%)	165 (41.25%)	40 (10%)	20 (5%)	3.24	0.89
Frequency of Use						
I use the OPAC regularly for my academic needs.	180 (45%)	170 (42.5%)	30 (7.5%)	20 (5%)	3.28	0.77
I often rely on the OPAC for my coursework and research.	175 (43.75%)	165 (41.25%)	40 (10%)	20 (5%)	3.24	0.85
The OPAC is one of my primary sources of academic information.	185 (46.25%)740	160 (40%)480	45 (11.25%)	10 (2.5%)	3.3	0.81
I frequently access the OPAC to stay updated on new resources.	190 (47.5%)760	150 (37.5%)450	55 (3.75%)	5 (1.25%)	3.31	0.76
I use the OPAC more often than other academic resources.	195 (48.75%)780	155 (38.75%)465	40 (10%)	10 (2.5%)	3.34	0.72

Table 3 presents the descriptive statistics for user satisfaction with the OPAC. The mean user satisfaction score was 4.20, indicating that most respondents were satisfied with the OPAC. The standard deviation was relatively low, suggesting that there was little variation in satisfaction levels among the respondents. The table provides insights into user satisfaction with the Online Public Access Catalogue (OPAC) across three dimensions: Overall Satisfaction, System Effectiveness, and Frequency of Use. The data reveals a generally positive user experience, as indicated by the mean scores, which range from 3.24 to 3.34 on a 4-point scale. In terms of overall satisfaction, a substantial portion of respondents either strongly agreed or agreed that the OPAC meets their expectations as an academic resource, enhances their research and study experience, and that they would recommend it to others. The high levels of satisfaction are particularly evident in items such as "The OPAC enhances

my research and study experience" (mean = 3.34) and "I would recommend the OPAC to other students" (mean = 3.28), though the standard deviations suggest some variability in user experiences, especially in the recommendation aspect (SD = 0.95).

Similarly, the dimension of system effectiveness shows that users generally perceive the OPAC as efficient and reliable in helping them find the resources they need, with the mean scores indicating a strong overall belief in the system's effectiveness. The item "The OPAC improves the quality of my academic work" received a particularly high mean score of 3.34, reflecting confidence in the OPAC's contribution to academic performance. However, some variability in responses is noted, as indicated by standard deviations like 0.81 for the same item. Regarding frequency of use, the data suggests that users frequently rely on the OPAC for academic purposes, with items like "I use the OPAC more often than other academic resources" and "I frequently access the OPAC to stay updated on new resources" scoring high means of 3.34 and 3.31, respectively. These findings collectively demonstrate that while the OPAC is widely appreciated and utilized, there are nuanced differences in user experiences that could be addressed to further enhance satisfaction.

Relationship between system quality and user satisfaction of OPAC among undergraduate students of FUTA

Table 4: Correlation Between System Quality and User Satisfaction

Variables	User Satisfaction	P Value
System Quality	0.65**	0.000

Correlation is significant at the 0.05 level (2-tailed).

The correlation analysis results, presented in Table 4, show a significant positive relationship between system quality and user satisfaction (r = 0.65, p < 0.01). This suggests that higher system quality is associated with higher user satisfaction.

Relative influence of reliability, ease of use and interface design on users' satisfaction of OPAC

Table 5: Regression Analysis

Predictor Variables	Standardized Beta (β)	t-value	p-value
R² = 0.52			
Reliability	0.35	5.20	0.001
Ease of Use	0.45	6.75	0.001
Interface Design	0.30	4.10	0.015

Note: Dependent Variable: User Satisfaction

A regression analysis was conducted to examine the impact of system quality dimensions on user satisfaction. The results, shown in Table 5, indicate that system quality dimensions (reliability, ease of use, and interface design) collectively explain 52% of the variance in user satisfaction (R² = 0.52). Among the dimensions, ease of use was the strongest predictor of user satisfaction (β = 0.45, p < 0.05), followed by reliability (β = 0.35, p < 0.05) and interface design (β = 0.30, p < 0.05).

Discussion

The findings of this study reveal significant insights into the system quality and user satisfaction with the Online Public Access Catalogue (OPAC) among undergraduates at the Federal University of Technology, Akure. The high mean scores across the dimensions of reliability, ease of use, and interface design suggest that users generally perceive the OPAC as a reliable and user-friendly tool, consistent with findings from similar studies on digital library systems (Islam & Tsuji, 2016; Kaur & Rani, 2018). The positive correlations between system quality dimensions and user satisfaction align with the work of DeLone and McLean (2003 in Sarasi, Chaerudin and Sundoro, 2023), which emphasizes the critical role of system quality in influencing user satisfaction.

Furthermore, the data indicates that the OPAC is not only effective in meeting academic needs but also plays a significant role in enhancing the research and study experiences of students, echoing the conclusions of Tella & Popoola (2007) and Ali & Nadir (2020). However, the variability in responses, as reflected by the standard deviations, suggests that while the majority of users are satisfied, there are areas for improvement, particularly in system reliability and user support, similar to observations by Al-Shboul, et al. (2017). This underscores the need for continuous evaluation and enhancement of the OPAC to ensure it meets diverse user expectations and maintains high satisfaction levels.

Conclusion

The study concludes that system quality plays a crucial role in shaping user satisfaction with the Online Public Access Catalogue among undergraduates at the Federal University of Technology, Akure. The strong positive correlation between system quality and user satisfaction highlights the importance of ongoing assessment and enhancement of the OPAC.

Recommendations

1. The management of FUTA library should regularly assess the OPAC system quality to identify areas for improvement. This could involve conducting periodic user surveys to gather feedback on the system's performance.

2. Providing training sessions for students on how to effectively use the OPAC could enhance ease of use and satisfaction. These sessions could be integrated into the university's orientation program for new students. Therefore, the management of the library at FUTA should leverage on this.

3. Periodic updates to the OPAC's interface and functionality should be implemented based on user feedback to ensure it remains user-friendly and reliable. These updates should prioritize ease of use and reliability, as these factors have the most significant impact on user satisfaction.

4. Providing readily available technical support can help resolve any issues students encountered while using the OPAC, thereby enhancing their overall experience and satisfaction.

5. The OPAC should be designed and updated with the users in mind. Involving students in the design and testing phases of system updates can help ensure that the system meets their needs and expectations.

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