

E-Book Utilization among Library and Information Science Students at Universitas Negeri Padang through the iPusnas Application

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Abstract

The increasing adoption of digital libraries has expanded access to electronic learning resources in higher education; however, university students' utilization of e-books through Indonesia's National Digital Library application, iPusnas, remains underexplored. This study aimed to analyze the utilization of e-books through iPusnas among undergraduate students in the Library and Information Science Program at Universitas Negeri Padang. A descriptive quantitative approach was employed, involving 56 students selected through simple random sampling. Data were collected using a questionnaire based on the five dimensions of the Technology Acceptance Model and analyzed using descriptive statistics. The findings revealed that students demonstrated positive perceptions across all dimensions, indicating that iPusnas facilitates information retrieval and supports academic activities. Nevertheless, several practical limitations continued to affect its actual utilization. The study concludes that iPusnas has substantial potential as a digital learning resource in higher education. These findings contribute empirical evidence regarding students' acceptance and utilization of a national digital library platform and provide practical implications

for improving digital collections, system usability, and user-oriented library services.

Keywords: Digital Library; E-Book Utilization; Higher Education; iPusnas; Technology Acceptance Model

INTRODUCTION

The rapid advancement of digital technology has fundamentally transformed the provision of information services in higher education, shifting library collections from conventional printed materials toward digital resources that are accessible regardless of time and location. This transformation has strengthened the strategic role of digital libraries in supporting learning, research, and knowledge dissemination through technology-driven information services (Yunita & Zahra, 2025). As digital information ecosystems continue to expand, university students are increasingly expected to develop the ability to access, evaluate, and utilize electronic resources effectively to support academic success (Hasanah et al., 2025).

Among various forms of digital resources, electronic books (e-books) have become one of the most widely adopted learning materials because they offer flexibility, portability, and immediate access to scholarly information. Compared with printed books, e-books enable users to retrieve academic references more efficiently while minimizing geographical and financial barriers that often limit access to quality learning resources (Agustian & Vlora, 2023). Furthermore, digital collections contribute to more flexible learning environments by allowing students to access information through multiple digital devices whenever academic needs arise (Meena, 2024). These advantages have positioned e-books as an integral component of contemporary higher education and an essential medium for promoting independent learning.

The implementation of digital library services in Indonesia has been significantly strengthened through iPusnas, the National Library of Indonesia's digital library platform, which provides free access to thousands of electronic books across diverse disciplines. The platform expands opportunities for students to obtain credible academic references without being constrained by the availability of physical collections in conventional libraries (Rizkyantha et al., 2024). The continuous development of digital library services also reflects

national efforts to modernize library management and improve equitable access to information through technological innovation (Marzuki et al., 2025). Consequently, digital libraries are increasingly recognized not merely as repositories of electronic documents but as interactive learning environments that facilitate efficient information retrieval and lifelong learning (Nafsi & Octavia, 2024).

For undergraduate students in Library and Information Science, utilizing digital library platforms extends beyond fulfilling academic requirements. As prospective information professionals, they are expected to master digital information resources, understand information retrieval systems, and effectively exploit electronic collections within their academic activities (Mukhtarullah & Agniya, 2025). The ability to maximize digital library services is therefore closely associated with professional competencies in information organization, retrieval, and management. Previous studies indicate that the effective utilization of electronic resources enhances students' information-seeking behavior, improves academic productivity, and supports evidence-based learning practices (Giriwarna et al., 2023). Similarly, research has demonstrated that electronic learning resources positively influence students' learning effectiveness by providing broader and more flexible access to reliable information sources (Prajawinanti & Khoirunnisa, 2023).

Despite these recognized advantages, maximizing e-book utilization remains a considerable challenge in higher education. Previous investigations have revealed that students' continued use of digital libraries is influenced not only by the availability of electronic collections but also by system quality, usability, and perceived benefits derived from the technology itself (Chopra et al., 2024). Technical limitations, incomplete collections, interface complexity, and user experience continue to affect students' willingness to utilize digital library services consistently (Iqbal et al., 2023). Moreover, the rapid emergence of artificial intelligence–based information services has gradually shifted students toward instant information retrieval, potentially reducing sustained engagement with comprehensive digital reading materials (Belhida et al., 2025). These developments indicate that understanding students' utilization of e-books requires a broader perspective that encompasses technological, behavioral, and educational dimensions simultaneously.

Previous studies have consistently confirmed that digital library utilization positively contributes to students' learning experiences, information accessibility, and academic performance. Research on academic digital libraries demonstrates that users are more likely

to adopt electronic resources when digital platforms provide reliable information, convenient access, and satisfactory service quality (Francis, 2023). Likewise, studies on electronic library systems emphasize that perceived service quality and user satisfaction significantly determine users' continuance intention to utilize digital library services (Chopra et al., 2024). Other investigations further indicate that integrating digital learning resources into higher education enhances students' engagement in independent learning and facilitates more efficient academic information retrieval (Hasanah et al., 2025). These findings collectively suggest that digital libraries have become indispensable components of contemporary learning environments.

Technology acceptance has therefore become an important perspective for understanding users' interactions with digital information systems. Numerous empirical studies have validated that users' acceptance of educational technologies is largely influenced by their perceptions of usefulness, ease of use, and overall learning experience (Ashrafi et al., 2022). Similar findings have been reported in mobile learning environments, where students' behavioral intention is significantly associated with positive perceptions toward system functionality and usability (Chao, 2019). Moreover, studies examining electronic commerce and online information systems consistently demonstrate that technologies perceived as useful and user-friendly are more likely to be accepted and continuously utilized by their users (Gefen & Straub, 2000). These empirical findings indicate that technology acceptance provides a relevant theoretical lens for evaluating students' utilization of digital library services.

Although previous studies have substantially enriched the literature on digital libraries and educational technologies, several important limitations remain. Most existing research has investigated digital library adoption in general educational contexts or evaluated electronic resources without focusing specifically on iPusnas as Indonesia's national digital library platform (Anjar Wati et al., 2025). Furthermore, many studies emphasize users' satisfaction, digital literacy, or continuance intention separately, while relatively few comprehensively examine technology utilization through the five interconnected dimensions of the Technology Acceptance Model (Alamsyah et al., 2025). Consequently, empirical evidence explaining how Library and Information Science students perceive, accept, and actually utilize e-books available through iPusnas remains limited, particularly within Indonesian higher education.

Accordingly, the present study addresses this research gap by comprehensively investigating e-book utilization among undergraduate students of the Library and Information Science Program at Universitas Negeri Padang using the complete Technology Acceptance Model (TAM). The novelty of this study lies in two aspects. First, it specifically examines Library and Information Science students, who represent prospective information professionals expected to possess advanced competencies in digital information management. Second, the study evaluates e-book utilization through all five TAM constructs—Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using, Behavioral Intention to Use, and Actual System Usage—thereby providing a more comprehensive understanding of technology acceptance than studies focusing on isolated behavioral variables.

The Technology Acceptance Model developed by Davis (1989) provides the principal theoretical foundation for this study because it explains how users' cognitive perceptions influence attitudes, behavioral intentions, and actual technology utilization. The robustness of TAM has been repeatedly confirmed across various educational and information system contexts, demonstrating its strong explanatory power in predicting users' acceptance of digital technologies (Burton-Jones & Hubona, 2006). In addition, information system success is closely associated with the interaction between system quality, user perceptions, and actual system usage, highlighting the importance of evaluating technological adoption from both cognitive and behavioral perspectives (DeLone & McLean, 2003). From the perspective of task–technology alignment, information technologies produce meaningful academic benefits only when technological capabilities effectively support users' learning activities and information needs (Goodhue & Thompson, 1995). Furthermore, interface usability remains a critical determinant of technology acceptance because intuitive navigation and operational simplicity directly shape users' experiences with mobile applications (Harrison et al., 2013).

Based on these considerations, this study aims to analyze the utilization of e-books through the iPusnas application among undergraduate students of the Library and Information Science Program at Universitas Negeri Padang by employing the Technology Acceptance Model as its analytical framework. The findings are expected to contribute to the growing body of literature on digital library utilization, strengthen empirical evidence concerning technology acceptance in higher education, and provide practical

recommendations for improving digital library services to better support students' academic information needs.

METHODS

This study employed a quantitative research approach using a descriptive research design to examine the utilization of e-books through the iPusnas application among undergraduate students in the Library and Information Science Program at Universitas Negeri Padang. The descriptive quantitative approach was selected because it enables the objective measurement and systematic description of students' perceptions and utilization of digital library services based on numerical data. The study focused on a single research variable, namely e-book utilization, which was operationalized using the Technology Acceptance Model (TAM) developed by Davis. Five constructs were adopted as the analytical framework: Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using, Behavioral Intention to Use, and Actual System Usage. These constructs were translated into measurable indicators to evaluate students' perceptions of the usefulness, ease of operation, attitudes, behavioral intentions, and actual utilization of e-books available through the iPusnas platform. The research was conducted between May and June 2026, covering the stages of instrument distribution, data collection, and statistical analysis.

The study population consisted of 125 undergraduate students from the 2022 cohort of the Library and Information Science Program at Universitas Negeri Padang. A sample of 56 respondents was determined using the Slovin formula with a 10% margin of error, while the participants were selected through simple random sampling to provide every member of the population with an equal probability of participation. This sampling technique was considered appropriate because the population possessed relatively homogeneous academic characteristics and shared similar experiences in utilizing digital information resources. Primary data were collected using a structured questionnaire comprising 75 statement items measured on a four-point Likert scale ranging from *strongly disagree* to *strongly agree*. The questionnaire was developed according to the five TAM constructs and distributed online through Google Forms, with the survey link disseminated via WhatsApp to facilitate efficient participation. Secondary data were obtained from books, scholarly journals, and other scientific publications relevant to the research topic. Prior to data collection, the research

instrument underwent validity and reliability testing to ensure that each questionnaire item accurately measured the intended constructs and produced consistent results.

The collected data were analyzed using descriptive statistical techniques to provide a comprehensive overview of students' e-book utilization through the iPusnas application. Responses from completed questionnaires were first coded and tabulated before being processed using statistical software. Descriptive statistics, including frequency distributions, percentages, mean scores, and categorical interval interpretations, were employed to describe respondents' perceptions across the five TAM constructs. The findings were subsequently interpreted by comparing the average scores of each indicator to determine the extent to which students perceived iPusnas as useful, easy to use, and supportive of their academic activities. This analytical procedure enabled the study to achieve its objective of systematically describing the utilization of e-books among Library and Information Science students while maintaining consistency between the research objectives, methodological approach, and theoretical framework.

RESULTS

E-Book Utilization

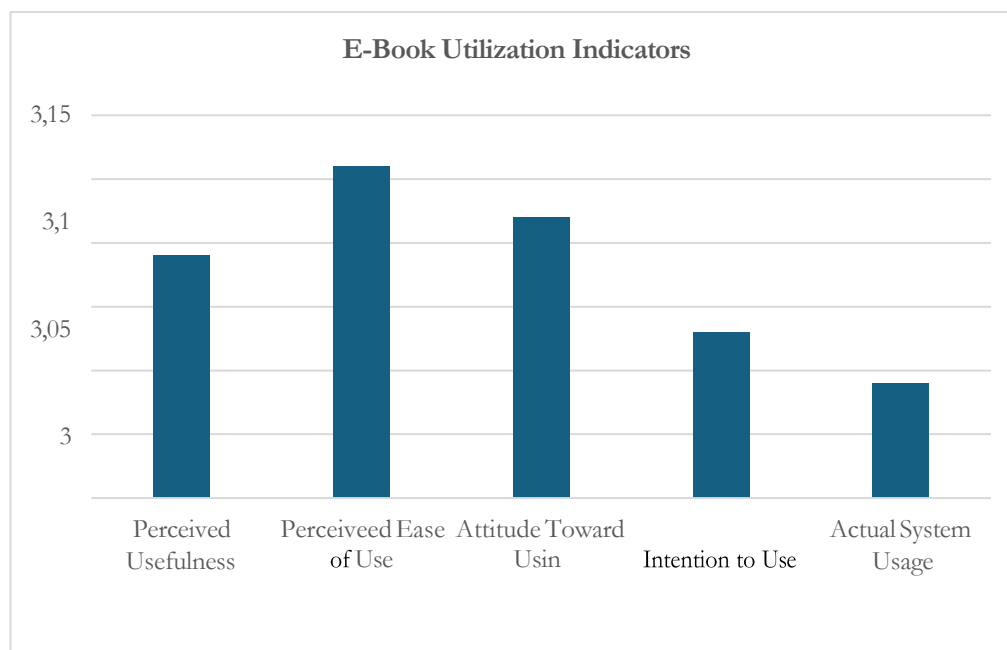


Figure 1. E-Book Utilization Indicators

Figure 1. E-Book Utilization Indicators presents the mean scores of each indicator. Perceived Ease of Use obtained the highest mean score ($M = 3.11$), followed by Attitude Toward Using ($M = 3.07$) and Perceived Usefulness ($M = 3.04$). Behavioral Intention to Use ($M = 2.98$) and Actual System Usage ($M = 2.94$) recorded the lowest mean scores. These findings indicate that although students perceived the iPusnas e-book application as easy to use and useful, these positive perceptions were not fully reflected in their actual usage behavior.

DISCUSSION

The findings demonstrate that the utilization of e-books through the iPusnas application among undergraduate students in the Library and Information Science Program at Universitas Negeri Padang was generally classified as good across all five dimensions of the Technology Acceptance Model (TAM). Rather than merely indicating frequent use of a digital library platform, these results suggest that students have developed positive cognitive and behavioral responses toward iPusnas as an academic information resource. This finding implies that students perceive digital libraries not only as alternative repositories of electronic books but also as learning environments capable of supporting information retrieval, independent learning, and academic task completion. The consistently favorable performance across the five TAM constructs further indicates that technology acceptance extends beyond initial adoption and has become integrated into students' routine academic activities, although the degree of utilization varies across specific dimensions.

Among the five dimensions, Perceived Usefulness emerged as one of the strongest aspects of e-book utilization. Students acknowledged that iPusnas contributed substantially to improving academic productivity by facilitating access to learning resources, accelerating literature searches, and supporting coursework completion. These findings indicate that students primarily evaluate digital library services according to their ability to enhance academic performance rather than merely providing digital access to information. According to the Technology Acceptance Model, users are more likely to accept and continuously utilize information technology when they perceive that the system enhances task effectiveness and productivity (Davis, 1989). Nevertheless, the comparatively lower score related to the optimization of learning outcomes suggests that although iPusnas effectively supports information retrieval, its contribution to achieving deeper learning objectives has not yet

reached its full potential. This discrepancy may reflect limitations in collection relevance, content availability, or students' reading habits, indicating that technological accessibility alone does not automatically translate into meaningful learning outcomes.

Similarly, the Perceived Ease of Use dimension revealed that students generally considered iPusnas easy to learn and operate, particularly regarding the borrowing process and search functionality. Ease of navigation and operational simplicity reduce cognitive effort during information retrieval, enabling students to allocate more attention to learning activities rather than system operation. This finding reinforces previous arguments that user-friendly interfaces play a decisive role in promoting technology acceptance because intuitive systems encourage repeated usage and reduce resistance to technological innovation (Gefen & Straub, 2000). However, several respondents still perceived the application's navigation structure as less intuitive, suggesting that interface usability remains an important area for further improvement. This observation is consistent with usability research emphasizing that navigation simplicity substantially influences users' experiences with mobile applications (Harrison et al., 2013). Therefore, improving interface design may strengthen students' perceptions of convenience and encourage more intensive utilization of digital library services.

The positive results observed in Attitude Toward Using, Behavioral Intention to Use, and Actual System Usage further demonstrate that students not only appreciate the benefits of iPusnas but also exhibit favorable attitudes and intentions toward its continued use. Positive attitudes were reflected in students' willingness to explore application features, recommend the platform to peers, and maintain future utilization. Nevertheless, the actual usage dimension revealed relatively lower performance than cognitive perception dimensions, indicating that favorable attitudes do not necessarily guarantee intensive or sustained use. This finding suggests the presence of external factors beyond technology acceptance, such as limited digital collections, borrowing restrictions, screen-reading fatigue, and competition from artificial intelligence-based information services. Consequently, technology acceptance should be interpreted as a multidimensional process in which positive perceptions represent necessary but insufficient conditions for maximizing actual system utilization.

These findings generally support previous research concerning digital libraries and electronic learning resources. Studies have consistently reported that digital library services

improve students' access to scholarly information while enhancing learning flexibility and independent information seeking (Francis, 2023; Hasanah et al., 2025). Likewise, research on digital library quality indicates that perceived usefulness and user satisfaction significantly influence users' continuance intention toward digital information systems (Chopra et al., 2024). The present findings also align with investigations demonstrating that electronic resources facilitate more efficient academic information retrieval and contribute positively to students' information-seeking behavior (Giriwarna et al., 2023). However, this study extends previous literature by demonstrating that positive perceptions of usefulness and ease of use alone are insufficient to ensure high levels of actual utilization. Instead, actual usage appears to remain dependent upon contextual factors related to collection availability, interface quality, and students' evolving digital information preferences. This broader interpretation enriches the application of TAM within digital library research by highlighting the importance of contextual educational environments in shaping technology acceptance among future information professionals.

The findings of this study provide several important implications for both theory and practice in the field of digital library services. From a theoretical perspective, the results reinforce the explanatory power of the Technology Acceptance Model (TAM) by demonstrating that students' perceptions of usefulness and ease of use are positively associated with favorable attitudes, stronger behavioral intentions, and continued utilization of digital library services. The generally positive responses across the five TAM constructs indicate that technology acceptance remains a relevant framework for understanding users' interactions with digital library platforms in higher education (Davis, 1989). However, the present findings also suggest that technology acceptance should not be interpreted as a purely technological phenomenon. Although students perceived iPusnas as beneficial and relatively easy to use, the comparatively lower level of Actual System Usage indicates that continuous utilization is simultaneously influenced by contextual conditions, including collection adequacy, system functionality, and users' academic information needs. This finding is consistent with studies emphasizing that technology acceptance is strengthened when information systems successfully align technological capabilities with users' task requirements and learning objectives (Goodhue & Thompson, 1995). Likewise, the relationship between cognitive perceptions and actual technology use supports previous evidence that external variables continue to influence behavioral outcomes after technology adoption (Burton-Jones & Hubona, 2006).

From a practical perspective, the study highlights several aspects that should be considered to improve the effectiveness of iPusnas as a national digital library service. Although students generally expressed positive perceptions of the platform, the findings indicate opportunities to enhance both collection quality and user experience. Expanding the availability of academic references, particularly discipline-specific textbooks and frequently requested learning materials, would likely increase the platform's relevance to university students. Improving interface usability, simplifying navigation, and optimizing search functionality could further reduce users' cognitive effort and encourage more intensive utilization. In addition, strengthening personalized features, such as recommendation systems, bookmarking, reading history, and note-taking functions, may improve students' engagement with digital collections and promote sustained reading behavior. These improvements are consistent with previous studies demonstrating that digital library quality, usability, and user satisfaction substantially influence the continuous use of electronic information systems (Chopra et al., 2024). Furthermore, integrating digital library services with university learning environments may encourage students to utilize credible scholarly resources more consistently rather than relying predominantly on general internet searches or artificial intelligence-based information tools (Hasanah et al., 2025). Consequently, the findings provide practical evidence for library managers, higher education institutions, and policymakers seeking to optimize digital library services as strategic infrastructures supporting academic learning.

The study also contributes methodologically by applying the complete Technology Acceptance Model, comprising Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using, Behavioral Intention to Use, and Actual System Usage, to evaluate students' utilization of a national digital library platform. While many previous studies have focused primarily on selected dimensions of technology acceptance or users' continuance intention, the present research provides a more comprehensive description of students' acceptance processes by examining the interrelated cognitive, attitudinal, intentional, and behavioral dimensions within a single analytical framework. This comprehensive approach offers richer empirical evidence regarding how future information professionals interact with digital library technologies and may serve as a useful methodological reference for subsequent investigations evaluating digital information services in higher education.

Despite these contributions, several limitations should be acknowledged. First, the study involved only 56 undergraduate students from a single cohort within one study

program at Universitas Negeri Padang; therefore, the findings cannot be generalized to students from other academic disciplines or higher education institutions with different technological environments. Second, the study employed a descriptive quantitative design, which effectively describes students' perceptions but does not explain causal relationships among the TAM constructs or identify the magnitude of influence between variables. Third, the data were collected exclusively through self-reported questionnaires, making the findings dependent on respondents' subjective perceptions and potentially susceptible to response bias. Finally, the investigation focused specifically on the utilization of iPusnas, meaning that the results may not fully represent students' experiences with other digital library platforms that differ in interface design, collection characteristics, or service quality. Future studies are therefore encouraged to employ larger and more diverse samples, incorporate inferential analytical approaches, and compare multiple digital library platforms to obtain a broader understanding of technology acceptance and digital information behavior in higher education. Through these improvements, subsequent research can further refine the application of the Technology Acceptance Model and generate stronger evidence to support the continuous development of digital library services.

CONCLUSION

This study examined the utilization of e-books through the iPusnas application among undergraduate students in the Library and Information Science Program at Universitas Negeri Padang using the Technology Acceptance Model (TAM). The findings indicate that students generally demonstrated positive perceptions across all five TAM dimensions, namely Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using, Behavioral Intention to Use, and Actual System Usage. These results suggest that iPusnas has been effectively utilized as a digital learning resource that supports information retrieval, facilitates academic activities, and encourages independent learning. Nevertheless, the findings also reveal that positive perceptions and behavioral intentions do not necessarily translate into intensive actual usage, indicating the influence of contextual factors such as collection availability, interface usability, and students' evolving information-seeking preferences.

The study successfully addressed its research objectives by providing a comprehensive description of students' e-book utilization through the five dimensions of the

Technology Acceptance Model. This research contributes to the existing body of knowledge by extending the application of TAM within the context of Indonesia's national digital library and by offering empirical evidence from Library and Information Science students as prospective information professionals. From a practical perspective, the findings provide valuable insights for digital library managers and higher education institutions in improving collection development, system usability, and user-oriented digital services to better support students' academic needs.

The findings further imply that the effectiveness of digital library services depends not only on technological accessibility but also on the quality of user experience and the relevance of available digital collections. Future studies are recommended to involve larger and more diverse samples, compare multiple digital library platforms, and employ inferential analytical approaches to provide a broader understanding of technology acceptance and digital library utilization across different higher education contexts.

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