



**EFEKTIVITAS APLIKASI BUKU ELEKTRONIK DALAM MEMENUHI KEBUTUHAN
INFORMASI MAHASISWA UIN SULTAN MAULANA
HASANUDDIN BANTEN**

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ABSTRAK

Penelitian ini bertujuan untuk mengkaji tingkat efektivitas aplikasi buku elektronik di kalangan mahasiswa UIN SMH Banten dalam memenuhi kebutuhan informasi akademik mereka. Kehadiran aplikasi buku elektronik dari Perpustakaan UIN SMH Banten memungkinkan mahasiswa memperoleh informasi secara lebih cepat dan fleksibel tanpa harus datang ke lokasi perpustakaan. Dengan demikian, aplikasi ini berpotensi meningkatkan efisiensi dalam proses belajar dan penyusunan tugas akademik. Pendekatan yang digunakan adalah kuantitatif dengan metode survei, melibatkan 30 sampel penelitian yang dipilih menggunakan teknik purposive sampling, yaitu mahasiswa yang telah menggunakan aplikasi buku elektronik. Jumlah sampel ini ditentukan berdasarkan keterbatasan pengguna aktif serta pertimbangan efisiensi penelitian. Data dikumpulkan melalui kuesioner daring dan dianalisis menggunakan statistik deskriptif serta analisis korelasi dengan bantuan program SPSS untuk mengetahui hubungan antara efektivitas aplikasi dan pemanfaatan informasi. Hasil penelitian menunjukkan adanya hubungan positif yang signifikan antara efektivitas aplikasi buku elektronik dengan pemenuhan kebutuhan informasi mahasiswa ($r = 0,803$; $sig < 0,05$), yang menunjukkan kategori hubungan yang kuat. Dalam konteks ini, penelitian ini memberikan kontribusi dengan mengkaji efektivitas aplikasi buku elektronik menggunakan pendekatan Uses and Gratification dalam konteks perguruan tinggi keagamaan Islam (PTKI), yang masih terbatas dibahas pada penelitian sebelumnya. Temuan ini menunjukkan bahwa penggunaan aplikasi buku elektronik mampu meningkatkan efisiensi akses informasi, mendukung proses belajar, serta memperkuat pembelajaran digital di lingkungan perguruan tinggi.

Kata Kunci: Kebutuhan Informasi: User and Gratification: Mahasiswa

***EFFECTIVENESS OF THE ELECTRONIC BOOK APPLICATION IN ADDRESSING INFORMATION
NEEDS OF STUDENTS UIN SULTAN MAULANA
HASANUDDIN BANTEN***

ABSTRACT

This study aims to examine the level of effectiveness of electronic book applications among students of UIN SMH Banten in meeting their academic information needs. The presence of e-book applications from the UIN SMH Banten Library enables students to access information more quickly and flexibly, eliminating the need to visit the library. Thus, this application has the potential to increase efficiency in the learning process and the preparation of academic assignments. The approach employed was quantitative, utilizing a survey method that involved 30 research samples selected through a purposive sampling technique, specifically, students who had used e-book applications. This sample size was determined based on the limited number of active users and considerations of research efficiency. Data were collected through an online questionnaire and analyzed using descriptive statistics and correlation analysis with the help of the SPSS program to determine the relationship between application effectiveness and information utilization. The results showed a significant positive relationship between the effectiveness of e-book applications and the fulfillment of students' information needs ($r = 0.803$; $p < 0.05$), indicating a strong relationship category. In this context, this study contributes to the literature by examining the effectiveness of e-book applications using the Uses and Gratification approach in the context of Islamic religious higher education (PTKI), a topic that has been previously discussed in research. These findings suggest that the use of e-book applications can enhance the efficiency of information access, support the learning process, and promote digital learning in higher education environments.

Keywords: Information Needs: User and Gratification: Students



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A. INTRODUCTION

The rapid development of information and communication technology (ICT) has brought significant changes across many areas of life, including higher education. The application of ICT as part of the Industrial Revolution 4.0 requires academic libraries to shift from their traditional role as providers of physical collections to flexible digital information resource centers (e-libraries) that can be accessed anytime and anywhere (Choirunisa & Nauval, 2025). This change makes it easier for users to find, download, and use information without constraints on space or time. Consequently, libraries must adapt to technological developments by providing digital services that support effective information retrieval. One concrete form of information technology implementation in libraries is the development of the Online Public Access Catalog (OPAC). This information retrieval system allows users to browse collections independently, quickly, and efficiently without being limited by space or time. Through this system, libraries not only improve service quality and user satisfaction but also strengthen their role as institutions responsive to the information needs of modern society (Ardyawin & Afrina, 2023). Digital transformation is encouraging libraries to build a more inclusive, interactive, and sustainable information ecosystem to meet user needs better.

In the context of Islamic Higher Education Institutions (PTKI), such as UIN SMH Banten, e-book applications play a crucial role in supporting academic activities. These applications provide students with easy access to various literature sources, including those in religious studies, social sciences, and science, particularly for the preparation of final assignments and theses. Based on Law Number 43 of 2007 concerning Libraries, libraries function as institutions that professionally manage written, printed, and recorded works using a standardized system to meet the educational, research, preservation, information, and recreational needs of users (Yuliani, 2015). In line with these provisions, the UIN SMH Banten Library has adapted to developments in information technology to meet the information needs of its academic community. One example of this innovation is the development of the "UIN SMH Banten Electronic Book" application, available on the Play Store, similar to the Ipusnas application. The UIN SMH Banten Library launched its library in February 2019 and received an update in June 2024. The e-book application serves as a connecting tool between students and thousands of digital collections (Saputra et al., 2024). It has been downloaded more than 1,000 times on the Play Store, indicating a reasonably good adoption rate within the campus environment. However, this number does not necessarily reflect the level of actual utilization by students, as downloads do not always indicate active and effective use. This condition raises an important question regarding whether the application has functioned optimally in meeting students' information needs.

The effectiveness of e-book applications depends on various factors that can either support or hinder students' experiences in using them. These factors include the availability of relevant e-book collections, the quality of the application's interface, ease of access, system reliability, and technical support. In this study, these aspects are positioned as indicators of the effectiveness variable (X), which is assumed to influence the fulfillment of students' information needs (Y). According to Kurniawan, the availability of relevant electronic collections is a key requirement for successful e-book utilization in higher education (Kurniawan, 2020). Furthermore, research by Wijaksana and Herlina shows that ease of access and digital literacy also determine the extent to which students can use e-library applications effectively (Wijaksana & Herlina, 2025). In addition, the quality of the application display and interactive features can also strengthen or hinder the effectiveness of e-book use. Student preferences in accessing and reading academic materials further determine how effectively these applications meet their needs.

While various studies have highlighted the effectiveness of e-libraries, most of them tend to focus on general aspects such as system usability, user satisfaction, and information access, without specifically examining the relationship between application effectiveness and the fulfillment of students' information needs. In addition, the application of Uses and Gratification (U&G) Theory in analyzing e-book application usage, particularly within Islamic higher education institutions (PTKI), is still relatively limited. This indicates that previous studies have not comprehensively explained how users actively utilize e-book applications to meet their academic information needs from a behavioral perspective. Therefore, there is a need for a more specific and contextual study that not only examines the effectiveness of e-book applications but also analyzes how this effectiveness relates to the fulfillment of students' information needs using the Uses and Gratification (U&G) Theory. This study offers a novelty by integrating the analysis of application effectiveness with the U&G theoretical framework within the context of PTKI, particularly at UIN SMH Banten, which has not been widely explored in previous research.

Based on this background, this study aims to analyze the effectiveness of e-book applications in meeting students' academic information needs at UIN SMH Banten. The focus of this research includes the level of information needs, frequency of application use, available features, and user satisfaction in accessing and utilizing the application. This research is expected to provide practical contributions to the UIN SMH Banten Library in developing strategies to improve the quality of digital service systems, as well as theoretical contributions

to the development of Uses and Gratification (U&G) Theory in the context of digital library services within Islamic higher education institutions.

B. PREVIOUS STUDY

The previous study aimed to examine theories and prior research on the effectiveness of using electronic applications (e-books) in meeting students' information needs. This study examined the Uses and Gratification (U&G) theory as a conceptual foundation and analyzed several empirical studies on the use of digital applications in academic settings. This section also highlights, through comparative analysis, research gaps and novelties that form the basis for this study.

Uses and Gratification Theory

Uses and Gratification (U&G) theory was first introduced by Herbert Blumer and Elihu Katz in 1974 as an approach to mass communication studies that emphasizes the active role of audiences in selecting and using media to fulfill their needs (Setiyani et al., 2023). This theory assumes that individuals are active actors who consciously choose media based on specific goals and expected gratifications, rather than passive recipients of messages. From this perspective, media is viewed as a tool used to achieve user objectives, not as a dominant force that unilaterally shapes behavior.

Furthermore, U&G theory highlights that media use is driven by various needs, including psychological, social, and intellectual needs. These needs encourage individuals to actively determine which media best supports their purposes. Thus, the focus of this theory lies on “what users do with media,” emphasizing that audiences are selective, goal-oriented, and have control over their media choice (Annisa Eka Syafrina, 2022). This makes U&G theory particularly relevant for analyzing the use of digital media and internet-based applications, where users have greater flexibility and autonomy.

In an academic context, particularly within Islamic Religious Colleges (PTKI) such as UIN SMH Banten, this theory can be used to understand student behavior in using e-book applications. The use of these applications is generally driven by cognitive needs, namely the need to obtain information and knowledge to support the learning process and prepare final assignments. Cognitive needs are understood as an individual's drive to broaden and deepen knowledge to understand better their environment (Alimin in Julianti et al., 2022). This drive arises when someone recognizes a lack of information and seeks to fulfill it through specific media. For students, cognitive needs are a dominant factor in the use of e-book applications to search for references, update academic insights, and support learning activities. Furthermore,

ease of access, flexibility of Time, and reading comfort also contribute to the gratification users derive from these applications.

Therefore, the U&G theory is highly relevant for examining the effectiveness of e-book applications among students at UIN SMH Banten. This theory helps explain the extent to which students use these applications according to their needs, both cognitively and affectively, and measures the level of perceived satisfaction. Thus, the effectiveness of e-book applications is not only determined by technological aspects but also by their ability to meet user needs and provide satisfaction.

Effectiveness and Student Information Needs

Information is a fundamental need for every individual, as everyone has the right to access accurate, correct, and accountable information. In this context, libraries play a significant role as institutions that bridge the information needs of the community, including students, ensuring they are optimally met. Through their collections and services, libraries serve as the primary means of providing access to a variety of relevant information sources and supporting both academic activities and student self-development.

Student information needs encompass various types of data, knowledge, and information sources necessary to support learning activities, social interactions, and the development of personal potential. These needs are dynamic, influenced by each student's primary, educational level, individual interests, and academic and career goals. Therefore, meeting information needs requires systems and services that are efficient, adaptive, and able to adapt to the diverse characteristics of users. In this regard, the application of information technology is a crucial factor in facilitating students' access to and the dissemination of information.

Ariadanang & Chusumastuti state that application effectiveness (as measured by the success of the information system) is determined by the dimensions of Application System Quality and Information Quality, which directly influence User Satisfaction. This user satisfaction then serves as a measure of the system's success in achieving its stated goals. In the context of digital libraries, the effectiveness of e-book applications is a crucial indicator of how well library services support students' academic activities. Practical applications not only facilitate access to information sources but also increase the efficiency of searching, managing, and using the information students need (Ariadanang & Chusumastuti, 2022). In this regard, information-seeking behavior is closely related to the use of e-book applications, as these applications function as primary tools that support students in identifying, accessing, and utilizing academic information. Students who have specific information needs will actively use

e-book applications to search for relevant references, evaluate available sources, and fulfill their academic tasks. Therefore, the effectiveness of e-book applications can be reflected in how well these applications accommodate students' information-seeking processes, from searching to obtaining and using information efficiently.

Furthermore, information-seeking behavior is a crucial aspect in understanding how students interact with information systems. Wilson in (Nurfadillah & Ardiansah, 2021) explains that information-seeking behavior is an individual's effort to find and obtain information when confronted with an information system. This process occurs through awareness of the information needs that must be met to support daily activities. Each individual has different information needs, so the strategies and methods used to search and utilize information vary. Kuhlthau in (Ningsih et al., 2023) noted that the gap between available and needed information is a driving factor in the growing need for information. Therefore, the information-seeking behavior described by Wilson can be understood as a response to the information gap, as proposed by Kuhlthau.

Meeting information needs ultimately refers to users' success in obtaining relevant, accurate, timely, and easily accessible information. Within the Uses and Gratifications Theory (U&G) framework, this condition describes the forms of satisfaction or gratification sought by students, particularly the cognitive needs they meet through effective information systems and services. Thus, the effectiveness of information systems, information-seeking behavior, and the fulfillment of information needs are closely related and form a unified whole. All three support the library's primary goal as an information provider that plays a role in students' academic and personal development.

This research differs from previous studies by combining an analysis of the effectiveness of e-book applications with the application of Uses and Gratifications (U&G) theory in the context of Islamic higher education. Focusing on the UIN SMH Banten e-Book application, this study uses a contextual approach to empirically examine the relationship between application effectiveness and the level of student information needs fulfillment. The findings of this study are expected not only to strengthen previous results but also to enrich the development of an evaluation model for the effectiveness of digital information services within PTKI.

Previous Research Analysis

Research on the effectiveness of electronic book (e-book) applications in meeting students' information needs has been a focus of extensive research in the field of library and information science. Various previous studies have shown that the use of digital applications,

including e-books, plays a strategic role in improving ease of access, retrieval speed, and the quality of the user experience when obtaining information (Budianti, 2017). In line with this, many studies have also focused on evaluating the effectiveness, usability, and impact of academic information service applications on user satisfaction and behavior. However, most of these studies tend to be descriptive and emphasize technical aspects, with limited critical analysis of the relationships between system effectiveness, user behavior, and information needs fulfillment.

Several previous studies used as references indicate that digital applications have become a primary focus in academic services. Evie Budianti, in her study on the Effectiveness of E-Library Use by Students at the STIESIA Library, focused on measuring e-library effectiveness across four aspects: needs, objectives, inputs, and activities. These results indicate that the e-library system can meet users' basic information needs. Nevertheless, this study mainly evaluates operational performance and does not explore how system effectiveness influences user satisfaction or information-seeking behavior. This indicates a limitation in linking system performance with user-centered outcomes.

Other, more specific research links effectiveness to the fulfillment of information needs, such as a study by Eka Rachmawati et al., entitled "The Effectiveness of the IPB Mobile for Student Application in Meeting Students' Campus Information Needs." This study utilized the Uses and Gratification Theory, and the results showed a positive relationship between application effectiveness and the fulfillment of students' information needs. Although this study successfully incorporates a theoretical framework, its scope is still limited to general academic applications, and it does not specifically address digital library contexts or explore behavioral processes in depth. (Rachmawati et al., 2022).

Furthermore, Alfina Fajriani Marfuah and Athanasia Octaviani Puspita Dewi, in their study "Utilization of the HATI Application in Meeting Students' Information Needs," emphasized the role of usability. The results of this study indicate that the higher the system's usability, the greater the level of user satisfaction. However, this study focuses more on system design and usability aspects, without sufficiently examining how users actively search for, evaluate, and utilize information within the application. (Marfuah & Dewi, 2024). Addition, the study by Kurnia & Nabila (2024) on the implementation of digital library applications at Padang State University highlights several weaknesses in system implementation (Kurnia & Nabila, 2024). Although integration aspects function relatively well, technical constraints such as device limitations and system complexity hinder optimal service delivery. Similarly, Ridwan & Fajarini (2023) emphasize that innovation in digital services and collections can improve

access and user satisfaction. Despite these contributions, both studies tend to focus on technical and infrastructural factors and do not comprehensively analyze the relationship between system effectiveness, user behavior, and the fulfillment of information needs (Ridwan & Fajarini, 2023).

Based on the analysis above, it can be observed that previous studies tend to examine application effectiveness, usability, and user satisfaction separately. There is still a lack of integrative analysis that connects system effectiveness with users' information-seeking behavior and the fulfillment of information needs within a unified theoretical framework, particularly using the Uses and Gratification (U&G) perspective.

C. RESEARCH METHODS

This study employed a descriptive quantitative research method to systematically assess the effectiveness of the UIN SMH Banten e-book application in meeting students' information needs. Quantitative research methods are structured, objective approaches to data collection and analysis that use numerical data to obtain accurate and reliable information about a specific phenomenon or problem (Waruwu et al., 2025). The descriptive approach was used to objectively describe the actual conditions of application use, levels of satisfaction, and the utilization of application features by students.

In this study, the Uses and Gratification (U&G) Theory served as the theoretical basis for analyzing student behavior in using e-book applications. The U&G Theory was first introduced in 1974 by Herbert Blumer and Elihu Katz (Setiyani et al., 2023) and focuses on how individuals actively select and use media to meet needs and achieve specific gratifications. This theory emphasizes that audiences are not passive recipients of media messages but actively seek, select, and use media to meet their goals or needs (Meri et al., 2020). In the context of this research, U&G theory is used as the basis for developing measurement indicators, which encompass information needs, application use behavior, application features, and user satisfaction.

The research population included all students at UIN SMH Banten who had or were currently using e-book applications, from semester 1 to semester 8. The sampling technique used was purposive sampling, which involves selecting respondents based on specific criteria relevant to the research objectives. This approach was chosen to ensure that the selected respondents were appropriate and able to represent the characteristics of the population (Subhaktiyasa, 2024). The criteria for selecting respondents included students who had used the UIN SMH Banten e-book application, were active in utilizing digital information sources for

academic purposes, and represented various semesters to reflect different levels of academic needs.

The sample in this study consisted of 30 respondents. This number refers to the minimum sample size commonly used in descriptive quantitative research, where at least 30 respondents are considered sufficient for basic statistical analysis and to represent population tendencies (Sugiyono, 2019) In addition, this study considers practical aspects such as time and accessibility while still maintaining the feasibility of conducting validity and reliability testing using SPSS.

The research instrument was a 4-point Likert-scale questionnaire (1 = strongly disagree, 4 = strongly agree) to measure students' perceptions of application satisfaction and usability. The four-point scale was chosen to avoid a central-tendency effect or the tendency for respondents to choose neutral answers, which is common on a five-point scale. The presence of a neutral option often makes data less accurate. Therefore, by eliminating the middle option, a four-point scale encourages respondents to take a more decisive stance, resulting in more meaningful and concise data (Agniya & Salim, 2023). The questionnaire consisted of respondent characteristics (such as semester, gender, and frequency of application use) and statements measuring the effectiveness of the application and the fulfillment of information needs based on U&G indicators.

The collected data were then analyzed using SPSS software, which facilitated the researcher's validity and reliability testing. Validity testing aims to ensure that each questionnaire question aligns with the indicators being measured and captures the intended phenomenon (Janna & Herianto, 2021). Meanwhile, reliability testing assesses the extent to which the instrument produces consistent data when used repeatedly under the same conditions, thereby ensuring the reliability of the research results.

The combination of purposive sampling, a Likert-scale questionnaire, and validity and reliability analyses using SPSS enabled this study to produce representative, academically sound data. This approach not only ensured the instrument's quality but also provided a clear picture of students' perceptions of the effectiveness and satisfaction with using e-book applications at UIN SMH Banten.

This research method is expected to provide a comprehensive picture of the effectiveness of the UIN SMH Banten e-book application and the factors influencing its use. This study also expands on previous research by focusing on quantitative analysis of application satisfaction and usability, thus providing a more specific contribution to the development of digital information services in higher education.

D. RESULTS AND DISCUSSION

Respondent Characteristics

Based on the questionnaire results, the majority of respondents were female. Of the 30 respondents, 23 (76.7%) were female, while the remaining 7 (23.3%) were male. This data indicates that female respondents participated more than male respondents in this study, indicating a higher level of interest or involvement in the research topic among this group.

In addition to gender, this study also collected data on the respondents' majors. The questionnaire results indicated that Islamic Library and Information Science (IPII) was the most popular, with 19 respondents (63.3%). This dominance of IPII is understandable, given the close relationship this research has with the field of library and information science.

Meanwhile, respondents from other majors were fewer in number. The departments of Elementary Madrasah Teacher Education (PGMI), History of Islamic Civilization (SPI), Hadith Studies (IH), Sharia Economic Law (HES), Quranic Studies and Interpretation (IAT), and Management each had one respondent. Two respondents participated in the Informatics Department, while three respondents participated in the Islamic Religious Education (PAI). Overall, nine departments participated in the questionnaire, reflecting the diversity of the respondents' academic backgrounds.

Regarding semesters, this study also examined the distribution of respondents by current semester. The results showed that the majority of respondents were fifth-semester students, with 17 respondents representing 56.7% of the total. This finding indicates that fifth-semester students had the highest participation rate in this study, likely due to their considerable academic experience and familiarity with relevant information sources.

Respondents from other semesters were relatively fewer. There were two first-semester students, eight third-semester students, and three seventh-semester students. Thus, the total number of respondents came from four different semester levels. The diversity of this semester provides a broader picture of students' participation patterns across various academic levels in the research being conducted. The detailed distribution of respondent characteristics can be seen in Table 1 below:

Table 1. Respondent Characteristics

Variabel	Category	Percentage (%)
Gender	Male	23,3%
	Female	76,7 %
Major	IPII	63.3%
	Others	36.7%
Semester	1-3 Semester	33.4%
	5-7 Semester	66.6%

Validity Test

Before interpreting the questionnaire results, a validity test should be conducted to determine whether the instrument is valid for respondents. Validity testing aims to assess the extent to which a measuring instrument accurately measures what it is intended to measure (Rosita et al., 2021). There are two ways to determine the validity of an instrument: 1) Comparing the calculated r value with the r Table, and 2) Comparing the significance value (sig.) <0.05. Based on the questionnaire results, validity can be tested using SPSS 23, with the following results:

Table 2. results of the validity test of variable X

Item Pertanyaan	r value (Pearson Correlation)	r tabel	Keterangan
X1	0,735	0,349	Valid
X2	0,729	0,349	Valid
X3	0,735	0,349	Valid
X4	0,472	0,349	Valid
X5	0,698	0,349	Valid
X6	0,766	0,349	Valid
X7	0,789	0,349	Valid
X8	0,669	0,349	Valid
X9	0,767	0,349	Valid
X10	0,773	0,349	Valid
X11	0,650	0,349	Valid

Based on the results presented in the Table above, it can be interpreted that all 11 items representing variable X, namely the Effectiveness of E-Book Applications, are valid. This is demonstrated by comparing the calculated r value with the Table r value used as the basis for the validity test, where the formula used is calculated $r > \text{Table } r$.

The Table r value was obtained based on the number of research samples, which in this case was 0.349. After the calculation, the results showed that the calculated r value for each statement was greater than the Table r value. Thus, it can be concluded that all items in variable X meet the validity requirements, making the instrument suitable for measuring the

effectiveness of e-book applications. These results indicate that each statement item is able to accurately represent the concept of e-book application effectiveness as perceived by students. The high correlation between each item and the total score reflects the consistency of the instrument in capturing aspects such as system quality, usability, and user satisfaction. This condition strengthens the measurement of variable X and ensures that the data obtained can be used for further analysis related to the effectiveness of e-book applications in supporting students' academic activities.

In addition to the correlation test comparing the calculated r and the Table r , validity can also be strengthened by comparing the significance value (sig.) with the predetermined significance level of 0.05. Based on the test results, the sig. The Value listed in the Table is below 0.05, indicating that each statement in variable X is statistically valid. In other words, all instrument items are capable of measuring the aspects they are supposed to measure with a high degree of confidence.

Furthermore, to test the validity of variable Y, namely Fulfillment of Student Information Needs, SPSS version 23 software was used. The testing procedure was carried out with the same steps as for variable X, namely by comparing the calculated r value to the r Table and ensuring the significance. Value is smaller than 0.05. The following Table results from SPSS:

Table 3. Results of the validity test of variable Y

Item Pertanyaan	r value (Pearson Correlation)	r tabel	Keterangan
X1	0,807	0,349	Valid
X2	0,818	0,349	Valid
X3	0,725	0,349	Valid
X4	0,819	0,349	Valid
X5	0,861	0,349	Valid
X6	0,833	0,349	Valid
X7	0,848	0,349	Valid
X8	0,883	0,349	Valid
X9	0,797	0,349	Valid

Based on the Table above, all statements about variable Y are valid. This indicates that the nine statements or instruments used in the study can consistently and accurately measure this variable. For statements Y1 to Y9, the calculated r value (referred to in the Table as Pearson Correlation) is greater than the Table r value, which is 0.349. This comparison demonstrates that each item has a strong relationship with the total score of variable Y, making each item worthy of retention in the research instrument. Furthermore, the results of the significance test indicate that all items have a significance value of 0.000. This value is lower

than the established tolerance limit of 0.05. Therefore, all statements meet the criteria for statistical significance, indicating that the relationship between each item and the overall variable is not due to chance. This condition indicates that all instruments used have met the required validity standards. This means that each statement item in variable Y accurately represents the concept intended to be measured in the study.

Based on these results, it can be concluded that the nine statement items (Y1–Y9) in variable Y are valid and can be used in the next stage of analysis. This validity indicates that the research instrument can produce accurate and reliable data. These findings suggest that the instrument used to measure the fulfillment of students' information needs has strong construct validity. Each item is capable of reflecting students' cognitive needs in accessing and utilizing academic information. In the context of the Uses and Gratification (U&G) theory, this validity indicates that the instrument successfully captures how students actively seek and use information to achieve specific gratifications. Therefore, the data obtained from variable Y can be considered reliable for analyzing the relationship between information needs fulfillment and the effectiveness of e-book applications.

Reliability Testing

Reliability is a crucial aspect of testing research instruments because it refers to the extent to which a measuring instrument produces consistent results. According to (Ono, 2020), reliability is the consistency of a series of measurements or of the measuring instruments used to collect data. This means that if an instrument is repeatedly tested under the same conditions, the results should not show significant differences.

In this study, reliability testing was conducted using Cronbach's alpha. This method is one of the most frequently used statistical techniques for measuring the internal consistency of an instrument, namely, how well the items in a questionnaire correlate with each other in measuring the same construct. The higher the Cronbach's Alpha value, the higher the instrument's reliability.

Generally, the criterion used to assess reliability is that if the Cronbach's Alpha (α) value is ≥ 0.6 , then the instrument is considered reliable. This value indicates that the measurement instrument has acceptable consistency and is suitable for research. The following Table interprets the Cronbach's Alpha values used as a reference in assessing the reliability of research instruments:

Table 4. interpretation of Cronbach's Alpha values

Cronbach's Alpha	Interprestasi
0,81-1,00	Sangat Tinggi
0,61-0,80	Tinggi
0,41-0,60	Sedang
0,21-0,40	Rendah
0,00-0,20	Sangat Rendah

The reliability results for variable X are as follows:

Table 5. Reliable results on variable X

Cronbach's Alpha	Interpretation
0,892	Very High

Based on the test results, the Cronbach's Alpha value for the X variable instrument was 0.892. This value is considered very high, meaning that each item in the X variable has a good level of internal consistency. Therefore, this instrument has strong reliability and can be used in further research. This finding indicates that the items used to measure the effectiveness of e-book applications are consistent in capturing key aspects such as system quality, usability, and user satisfaction. The high level of consistency suggests that respondents provided stable responses across items, reflecting a clear perception of the application's effectiveness.

A high Cronbach's Alpha value indicates that if the instrument is retested at different times and under different conditions, the results obtained will remain relatively similar. This indicates that the instrument is capable of providing stable measurement results and is not easily influenced by external factors. This consistency is one of the leading indicators that the measuring instrument used has met the reliability standards expected in scientific research. Meanwhile, the reliability calculation results for the Y variable showed a Cronbach's Alpha value of 0.938, as shown in the following Table:

Table 6. Results of reliability calculations on variable Y

Cronbach's Alpha	Interpretation
0,938	Very High

This demonstrates that the Y-variable instrument has excellent reliability and consistently measures the research constructs. This high value indicates that the relationship between the items in the Y variable is powerful, making this instrument reliable for use as a

data collection tool. This means that the respondents' responses to each statement item tended to be stable and showed no significant inconsistencies. Furthermore, this result suggests that the instrument successfully represents students' information needs, particularly cognitive needs related to accessing and utilizing academic information. In the context of Uses and Gratification (U&G) theory, this strong consistency reflects that students' responses are aligned in describing how they actively seek information to fulfill their needs through e-book applications.

Therefore, both variables, X and Y, have reliable instruments and meet very high criteria based on the Cronbach's Alpha test results. This analysis also aligns with the output from SPSS version 23, which consistently shows high alpha values for each variable, indicating that the research instrument is suitable for use in the next stage of analysis. Overall, the high reliability of both variables strengthens the credibility of the research findings and supports further analysis examining the relationship between e-book application effectiveness and the fulfillment of students' information needs.

Descriptive Statistical Tests

Descriptive statistics, often referred to as inductive statistics, is a branch of statistics that focuses on collecting, organizing, and presenting data to make the resulting information easier to understand. These statistics are used to provide a clear picture of data without the intention of drawing general or inferential conclusions (Nasution, 2017).

The primary function of descriptive statistics is to present data systematically so that specific patterns, trends, or characteristics can be clearly seen. In practice, these statistics help researchers understand the situation or phenomenon being observed by presenting data in informative tables, graphs, or diagrams. Therefore, the focus of descriptive statistics is not on hypothesis testing, but instead on describing the data itself.

Through descriptive statistical tests, researchers can determine the general characteristics of the collected data, such as the average value, distribution, frequency of occurrence, and emerging trends. The results of these tests serve as a basis for understanding the initial conditions of the research variables before further analysis. The results of the descriptive statistical tests in this study can be seen in the Table below:

Table 7. Descriptive statistical test results

Variabel	N	Minimum	maximum	mean	Std, deviation
Information Needs	30	12.00	24.00	17.63	3,468
Application Usage	30	8.00	16.00	11.43	2.299
Application Features	30	10.00	20.00	14.73	2.664
Satisfaction	30	9.00	20.00	14.66	3.204

The Table above can be interpreted in more depth as follows.

Information Needs

Students' information needs can be understood as the drive or necessity to obtain data, knowledge, and relevant sources to support their learning, research, and personal development. Students constantly need accurate, up-to-date information to understand course material, complete academic assignments, and hone their competencies in their field. Therefore, information needs are a crucial component in supporting the success of higher education.

Based on a questionnaire distributed to 30 respondents, the average level of students' information needs was 17.63, ranging from 12.00 to 24.00. These data indicate that students have a relatively high level of information needs, reflecting the crucial role of information as a key supporting factor in their academic activities and intellectual development. These results demonstrate that students have high information needs, aligning with the U&G theory, which explains that digital media users actively seek information to meet academic needs.

This finding indicates that information plays a central role in supporting students' academic activities, particularly in accessing references and completing assignments. The relatively high average score suggests that students are highly dependent on information sources, including digital platforms such as e-book applications.

This result is consistent with previous research by Rachmawati et al. (2022), which found that students' information needs significantly influence their use of digital applications. One possible reason for this high level of need is the increasing academic demands that require students to access diverse and up-to-date information sources. This implies that the availability of effective digital platforms, such as e-book applications, is essential in supporting students' learning processes and academic performance.

Application Usage

Usage of the UIN SMH Banten E-Book application was measured through students' direct experience accessing, exploring, and utilizing the various features within the system. This approach provides an empirical overview of the extent to which users utilize the application's primary functions, such as searching digital collections, reading e-books online, and the electronic borrowing process. Based on questionnaire data analysis, an average usage

score of 11.43 was obtained, ranging from 8.00 to 16.00, from a total of 30 respondents. This figure reflects a relatively good level of user participation and interaction in utilizing the application as a digital learning tool.

These findings indicate that students have been actively using the UIN SMH Banten E-Book application to support their academic activities. The application not only serves as a tool for searching references and reading teaching materials, but also helps students find literature relevant to their study needs. Ease of access, a simple interface, and a diverse digital collection are supporting factors that enhance user experience. This indicates strong motivation to use, as the application is considered helpful for supporting online learning (Meri et al., 2020).

This finding suggests that students are not only passive users but actively engage with the application to fulfill their academic needs, which is in line with the Uses and Gratification (U&G) theory. The relatively high usage score reflects that the application has become an integral part of students' learning activities.

Compared to previous studies, this result strengthens the argument that digital applications play a significant role in facilitating access to academic information. One possible reason for this active usage is the flexibility and accessibility offered by the e-book application, which allows students to access learning materials anytime and anywhere. This implies that increasing the usability and accessibility of the application can further enhance students' engagement and learning effectiveness.

Application Features

UIN SMH Banten's E-Book Application. The UIN SMH Banten E-Book Application has various features specifically designed to facilitate user access to information and digital reading materials. These features are expected to support user needs across academic activities and the search for relevant literature. Researchers conducted an assessment to determine the extent to which these features provide convenience, comfort, and benefits to students, the application's primary users.

Based on a questionnaire, the average rating for the application's features was 14.73 (range: 10.00-20.00) among 30 respondents. These results indicate that the majority of users considered the provided features to function optimally and provide a positive user experience. Therefore, the presence of features in the UIN SMH Banten E-Book application significantly enhances the application's effectiveness as a digital information source. This finding supports the concept of information system effectiveness, where usability is a crucial factor in user satisfaction.

This result indicates that the features provided by the application successfully meet user expectations, particularly in terms of ease of access, navigation, and functionality. In the context of U&G theory, these features serve as tools that enable users to achieve their specific goals in accessing information.

This finding is consistent with the study by Marfuah and Dewi (2024), which highlights that better system usability leads to higher user satisfaction. One possible explanation for this result is that well-designed features reduce user effort in searching and accessing information, thereby improving the overall user experience. This implies that continuous development and improvement of application features are necessary to maintain and enhance the effectiveness of digital library services.

Satisfaction

User satisfaction is a key indicator of an application's quality and effectiveness in meeting user needs. A high level of satisfaction indicates that the application provides an experience that meets user expectations, including ease of use, system reliability, and perceived benefits. Therefore, user satisfaction is often used as a benchmark for success in the development and implementation of information systems.

Based on the analysis of 30 respondents, the average user satisfaction rating for the UIN SMH Banten E-Book application was 14.67, with a minimum score of 9.00 and a maximum score of 20.00. This finding indicates that the majority of users are satisfied with the application's performance. Therefore, the UIN SMH Banten E-Book application is functioning effectively and optimally, meeting the information needs of its users. These results align with the user satisfaction theory in U&G, which states that effective media will provide satisfaction through ease of use, relevance, and usefulness of information.

This finding indicates that the e-book application has successfully met students' expectations in terms of functionality and usefulness. The high satisfaction level reflects that students perceive the application as beneficial in supporting their academic activities. This result also supports previous research showing that system quality and information quality significantly influence user satisfaction (Ariadanang & Chusumastuti, 2022). One possible reason for this high satisfaction is the combination of accessible features, relevant content, and ease of use provided by the application.

This implies that maintaining system performance and continuously improving content quality are essential to sustain user satisfaction and ensure the long-term effectiveness of the application.

The Effectiveness of the UIN SMH Banten Electronic Textbook Application in Meeting Students' Information Needs

To analyze the relationship between variable X, namely the Effectiveness of the Electronic Textbook Application, and variable Y, namely the Meeting of Students' Information Needs, researchers used SPSS (Statistical Package for the Social Sciences). This application aims to simplify the data analysis process, particularly in accurately and efficiently calculating the level of relationship or correlation between the two research variables.

SPSS allows researchers to systematically process data, from correlation tests to significance tests relevant to the research objectives. In general, if the p-value is less than 0.05, it can be concluded that the two variables are significantly related or correlated. Conversely, if the significance value is greater than 0.05, the relationship between the variables is considered insignificant, or there is no meaningful correlation. This principle serves as an important guideline in drawing statistical conclusions regarding the relationship between the independent and dependent variables.

With this software, the results are more objective and measurable. The results of the analysis of the relationship between variables X and Y can be seen in detail in the following Table:

Tabel 8 results of the analysis of the relationship between variables X and Y

Variabel	Pearson Correlation	N	Interpretation
Variabel X -> variabel Y	0.803	30	Strong & Significant

Based on the results in the Table above, a correlation test was conducted to determine whether the two variables are related. In this test, the significance value is the primary indicator of the strength or weakness of the relationship between variables. The significance value, or sig. (2-tailed), It is used as the basis for decision-making in inferential statistical analysis.

The Table shows that the significance value is 0.000. This value is clearly below the significance threshold of 0.05, so it can be concluded that there is a significant relationship between variables X (E-Book Application Effectiveness) and Y (Student Information Needs). In other words, changes in variable X will affect variable Y in a specific direction.

This finding indicates that the more the UIN SMH Banten E-Book application is used, the greater the likelihood that it will meet students' information needs. These results align with the theory of information system effectiveness, which holds that a well-performing system directly affects user satisfaction and utilization levels.

To provide a clearer understanding of the level of strength of the relationship between variables, the analysis is continued by referring to the guidelines for the degree of relationship or level of correlation as stated in the following Table:

Tabel 9 Guidelines for the degree of relationship or level of correlation

Nilai Pearson Correlation	Interprestasi
0,00-0,20	Tidak Ada Korelasi
0,21-0,40	Korelasi Lemah
0,41-0,60	Korelasi Sedang
0,61-0,80	Korelasi Kuat
0,81-1,00	Korelasi Sempurna

This Table provides a classification of relationship strength categories, ranging from very weak to very strong, which serves as the basis for assessing the closeness of the relationship between the two variables being tested.

Based on the analysis of the research questionnaire, it was found that variables X (Effectiveness of E-Book Applications) and Y (Meeting Students' Information Needs) have a correlation coefficient of 0.803. This value indicates a strong relationship between the two variables. Statistically, this value falls into the high correlation category and indicates a positive, significant relationship.

This means that the higher the effectiveness of the E-Book application, the greater its ability to meet students' information needs. This positive correlation indicates that an increase will follow a rise in the application's effectiveness variable in users' perceived information needs. Thus, application effectiveness plays a direct role in determining how optimally students obtain the information they need.

This finding can be explained through the Uses and Gratification (U&G) theory, which emphasizes that users actively choose and use media that are able to fulfill their specific needs. The strong correlation indicates that students perceive the e-book application as an effective medium to achieve their cognitive goals, particularly in accessing academic information. This suggests that the application has successfully functioned as a tool that aligns with users' expectations and motivations.

This result is consistent with previous research by Ariadanang & Chusumastuti (2022), which state that system quality and information quality influence user satisfaction and system success. However, the relatively high correlation value (0.803) in this study indicates that the relationship is stronger in the context of the UIN SMH Banten e-book application, suggesting a higher level of dependency among students on this digital platform.

One possible reason for this strong relationship is the increasing reliance on digital learning resources in higher education. The accessibility, flexibility, and availability of digital collections allow students to efficiently search for and utilize information. Moreover, the application's features, such as search tools and ease of navigation, may significantly reduce the time and effort needed to obtain relevant academic sources.

Conversely, if application effectiveness decreases for example, due to technical difficulties, limited features, or poor user experience the level of information needs students meet will also decrease. These results indicate that the success of an e-book application in providing informative benefits depends significantly on the extent to which the system operates effectively and efficiently in line with its users' expectations.

From an academic perspective, this finding implies that improving the quality of digital library systems is essential to support students' learning processes. Universities should continuously enhance application features, system performance, and content quality to ensure that students' information needs are optimally fulfilled. This also highlights the strategic role of digital libraries in supporting academic success in the era of digital learning.

E. CONCLUSION

Based on quantitative data from a survey of UIN SMH Banten Electronic Book application users, this study uncovered several important findings. Descriptive analysis indicates that the application's effectiveness is generally outstanding. This achievement is supported by students' positive appreciation for two main aspects: the completeness of the digital collection and the relevance of the information available in the application. These two factors demonstrate that the application can substantially meet user needs, particularly by providing cognitive gratification, which contributes to students' academic progress. Ease of access to fast, relevant resources enables students to derive tangible benefits in their learning, research, and academic development. These findings support the Uses and Gratification theory's assumption that the effectiveness of digital media is influenced by its ability to provide informational and cognitive gratification to users.

Furthermore, the correlation analysis revealed a strong, significant positive relationship between the effectiveness of application use and the degree of fulfillment of students' information needs. The correlation coefficient of 0.803 indicates that an increase in application effectiveness will be associated with an increase in the system's ability to provide the required information. This means that the better the application's performance and quality, the more optimally students can utilize information efficiently to support their academic activities and

self-development. This relationship is linear, meaning that any change in application effectiveness is directly related to changes in the level of user information needs fulfillment. These results emphasize that the effectiveness of digital information systems not only affects user satisfaction but also strengthens students' active and independent information-seeking behavior.

This study not only presents empirical evidence of the effectiveness of the UIN SMH Banten e-Book application in meeting student information needs but also strengthens the application of the Uses and Gratification (U&G) Theory within the Islamic Religious Higher Education (PTKI) environment. Students, as active users, utilize this digital media to fulfill their academic and cognitive needs independently. Thus, this study successfully addresses the research gap identified in previous studies by presenting empirical data demonstrating that campus digital applications can effectively fulfill relevant, efficient, and user-satisfying information needs. Unlike previous research that focused on user satisfaction or application design, this study emphasizes the empirical relationship between system effectiveness and the fulfillment of information needs within the context of PTKI.

Theoretically, this study extends the Uses and Gratifications theory to explain user behavior regarding digital information in Islamic higher education settings. The findings indicate that digital media, such as e-book applications, function not only as learning aids but also as interactive tools that strengthen students' independent information-seeking behavior. Thus, this study contributes to strengthening the conceptual model of the effectiveness of digital information services oriented towards user satisfaction. In practice, these findings provide a basis for library managers and system developers to continuously improve application quality by adding digital collections and updating the system to create a more convenient, practical user experience. Therefore, the UIN SMH Banten E-Book application is expected to continue to develop into an inclusive, innovative, and highly usable digital literacy platform to support the transformation of information services in the digital era.

In line with this study's findings, several recommendations can serve as a reference for library managers and system developers. Managers should continue to develop interactive features such as bookmarks, text highlighting, and automatic recommendation systems to enhance a more personalized and efficient reading experience. It is also necessary to expand digital collections, particularly the latest literature across various scientific fields, to better meet students' information needs across all study programs. Improving the quality of technological infrastructure, such as server capacity and access speed, is also crucial for maintaining system stability, especially during peak application usage hours.

Furthermore, regular digital literacy training is needed so that students can effectively browse, evaluate, and use digital information sources. This activity can be packaged as workshops, webinars or integrated into information literacy courses. Furthermore, libraries are expected to conduct user satisfaction surveys and regular evaluations to ensure application development remains aligned with the actual needs of the academic community.

For further research, it is recommended to conduct a comparative analysis across Islamic universities or to include additional variables, such as emotional satisfaction and perceived ease of use, to gain a more comprehensive understanding of the effectiveness of digital applications. In the long term, collaboration between libraries within Islamic Higher Education Institutions (PTKI) is highly recommended to establish a shared digital repository, thereby expanding access to information sources across institutions and enriching available digital resources. Institutional policy support from universities is also needed to ensure the sustainability of e-book application management as an integral part of technology-based learning systems. With these strategic steps, the UIN SMH Banten Electronic Book application not only serves as an academic support tool but also has the potential to become an innovative digital information service model that can strengthen literacy culture and enhance learning effectiveness in Islamic higher education environments.

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