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Library Users' Intention to Continue Using USULib Mobile Post the COVID-19 Pandemic

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ABSTRACT

The use of mobile phones has increased in various areas during the COVID-19 pandemic, including the adoption of mobile libraries. This research aims to understand users' intentions to continue using USULib Mobile after the pandemic. Using a quantitative descriptive approach, the study focused on the entire population of USU Library users who utilize USULib Mobile, with a research sample of 250 respondents. Data collection involved questionnaires, observations, and documentation studies covering eight UTAUT2 indicators, twenty-six variables, and forty-six questions. Descriptive methods were used for data analysis, and data validity was assessed using a rating scale. The results showed a generally strong inclination among users to persist in using USULib Mobile after the COVID-19 pandemic. The most influential factor was habit, particularly linked to the experience variable, indicating that the use of USULib Mobile had become a deeply ingrained habit during the pandemic. On the contrary, the least influential factor was hedonic motivation, specifically the variable related to fun or pleasure, which requires further investigation.

Keywords: Library services; mobile library; library users

1. INTRODUCTION

Research on cellular technology is not a new phenomenon, but it is still interesting to study (Parasuraman et al., 2017). Research findings regarding the use of mobile devices Ahmad (2020) showed that most respondents use cell phones every day for more than three hours to create documents. Most respondents accessed the library website to access e-books. Currently, people are reading e-documents and the latest forms of e-books, electronic journals, e-mail, and online databases (Siregar & Dewiyana, 2018)

The coronavirus (COVID-19) pandemic is impacting the use of resources and services provided by libraries. Libraries continued to provide services during the outbreak, but physical service was limited. A study found that the majority of libraries have seen a significant reduction in the use of physical resources and an increase in the use of digital resources (M. et al., 2021; Zareef & Ahmad, 2021) utilization of remote access facilities such as e-book, online

journals, online databases, e-learning platforms, and other research support tools are used extensively by library users to access relevant literature for teaching, learning, and research activities and thus to meet their information needs (Andersson, 2022; Joseph et al., 2022; Mashiyane, 2022).

Research on user intention to use M-library is largely based on different theoretical frameworks. The results of research using the TTF theory show that the four dimensions of characteristics of technology, namely autonomy, multifunctionality, reactivity, and adaptation, significantly influence the user's intention to use the smart library (Liu et al., 2021). Another study used a model built using information ecology theory to determine the attitudes and behavioural intentions of mobile library users with three external variables. Most of the M-library user intention studies also use the technology acceptance model (TAM). This shows the importance of applying other theories to close potential research gaps. In addition, they suggest that future research should employ the updated theory of acceptance and use of integrated technology 2 (UTAUT2) (Momani, 2020; Venkatesh et al., 2012).

The COVID-19 pandemic is shaking the world (Sangsawang, 2020). The COVID-19 pandemic poses several challenges for academia (Obiano & Ph, 2021). Library services had always been rendered to users ease and satisfactorily before the advent of COVID-19. The pandemic forced librarian to ensure work methods within a fast time frame to maintain their performance. Therefore, to overcome this annoying challenge for the benefit of Library users, turn to digital platforms (Farida et al., 2021).

Universitas Sumatera Utara Library has developed the USULib Mobile. Initially, USULib Mobile was a solution to overcome the limitations of visits during the COVID-19 pandemic (Rakha, 2022), but though the pandemic was over, the number of users who downloaded the USULib Mobile continued to increase on the Playstore. Nevertheless, it is essential to recognize the favorable influence that technology has exerted during this era, serving as the academic savior during lockdowns. Conferences and lectures are now accessible through webinars using platforms such as Zoom and G-Meet. The COVID-19 pandemic has instigated a revolution in the academic realm, particularly in the utilization of libraries. Presently, a majority of students, lecturers, and librarians have become proficient in information technology, aligning with the demands of the times and ensuring their continued relevance in their respective professions. (Obiano & Ph, 2021).

Hence, this study aimed to assess users' inclination to persist in utilizing USULib Mobile beyond the COVID-19 pandemic, employing the UTAUT2 theory (Venkatesh et al., 2012) and expanding it with the trialability construct (Farzin et al., 2021). The research contributes to librarians' understanding of user behaviors and perceptions regarding M-library user intent, potentially expanding library outreach. The more precise application and extension of UTAUT2 in this study enhance its capability to predict user behavioral intentions.

Recognizing users' intentions is crucial, as it serves as the key to attracting and maintaining customers, ensuring their loyalty to continue using USULib Mobile, and anticipating their desires for the improvement and development of the application. Understanding user intent is vital for achieving superiority, maintaining and enhancing the library's usage ranking.

2. METHODS

The study conducted at the USU Library employed a quantitative approach, targeting the entire population of USU Library users utilizing USULib Mobile. Users presumed to be included in this population are those who have downloaded the USULib Mobile application through the Playstore application on their smartphones. As of the commencement of data collection for this research, the number of users who have downloaded the USULib mobile application from the Playstore exceeds 1,000 people. This data highlights the substantial size of the population,

making it impractical to express quantitatively in its entirety (Amin et al., 2023; Conroy, 2014). In this situation, researchers create parameters by taking 25% of 1000, so the total research sample is 250 respondents. With the consideration of helping to overcome the limitations of a heterogeneous and geographically dispersed population, researchers used convenience sampling (Firmansyah & Dede, 2022; Golzar et al., 2022), that is what happened to have downloaded the USULib-mobile application on their smartphones and found by chance in the USU Library environment.

The data collection used a questionnaire, observations, documentation studies, and interviews. The questionnaire includes eight Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) indicators, twenty-six variables, and forty-six questions, as seen in the Table 1. The questionnaire was designed based on a five-point Likert scale. The research instrument used in this study was a closed-method questionnaire. The questionnaire grid made based on the acceptance model of the Unified Theory of Acceptance and Use Technology 2 (UTAUT 2) (Farzin et al., 2021; Momani, 2020; Venkatesh et al., 2012). All questionnaire items had tested for validity and reliability. The reliability and validity test based on the order of the variables indicates that all questionnaire items are valid and reliable. Data analysis used descriptive methods and data.

Table 1. Research variables

No	Indicators	Variables	Amount Questions
1	Performance Expectancy	- Perceived Usefulness - Extrinsic Motivation - Job-fit - Relative Advantage - Outcome Expectation	10
2	Effort Expectancy	- Perceived ease of use - Complexity - Ease of use	6
3	Social Influence	- Subjective Norm - Social Factors - Image	6
4	Facilitating Conditions	- Perceived Behavior - Facilitating Conditions - Complatibility	6
5	Hedonic Motivation	- Fun or Pleasure Devired - Enjoyable - Very Entertaining	3
6	Price Value	- Quality - Price - Value	6
7	Habit	- Prior Behavior - Automacity - Experiences	6
8	Trialability	- Properly try it out - Trial long enough to see what it could do - Deal of opportunity to try various capabilities	3

3. RESULTS AND DISCUSSION

USULIB Mobile provides a variety of features that make it easy for users (Figure 1). Through the application, users can namely: Do a search and create favourites list of books. Users can view membership profiles, including loan history, payment history (fine), amount of fine, notices or

notifications regarding borrowing collections. Users can also make transactions such as book reservations, proposing new books, free libraries, and changing passwords.

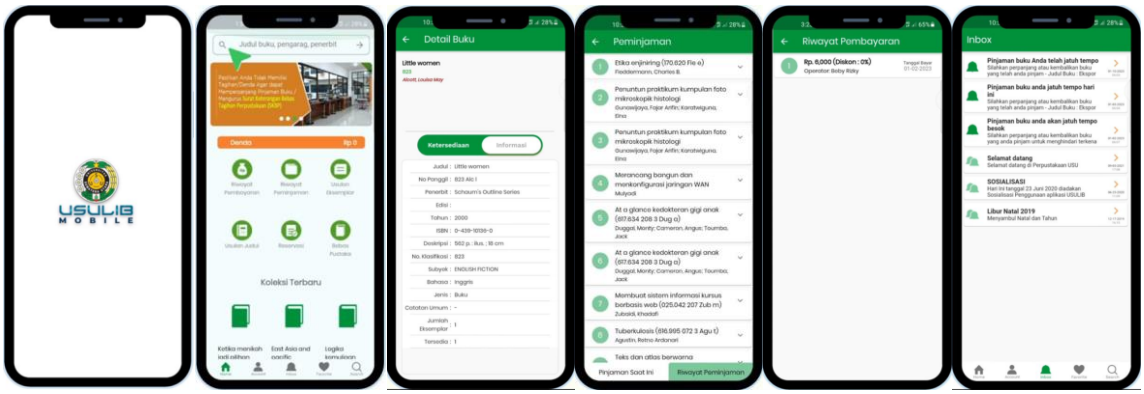

Figure 1. USULib mobile features

Descriptive Analysis

Descriptive analysis of the eight indicators consisting of twenty-six variables and forty-six questions is described as follows.

Performance Expectancy

Performance expectation is the extent to which a person believes that using the system will help that person gain performance benefits at work (Akinnuwesi et al., 2022; Momani, 2020; Perera & Abeysekera, 2022). Respondents' responses to performance expectations on USULib Mobile can be seen from the answers to the questionnaire statements up to numbers 1 to 10 with the variables: Perceived Usefulness, Extrinsic Motivation, Job-fit, Relative Advantage, and Outcome Expectation (Figure 2). In general (80%) of respondents stated that the USULib Mobile application can be used and improve their performance during a pandemic, so continuing to use USULib Mobile can their productivity will still increase (González-Pérez et al., 2022).

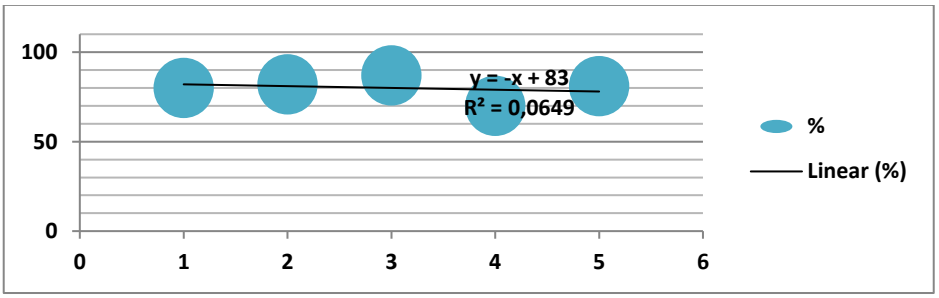

Figure 2. Respondents' responses to performance expectations

USULib Mobile provides a variety of services that can make it easier for users to access library services remotely, such as a search engine to find required collections, payment history, fines, borrowing history, proposed copies, proposed titles, reservations, free libraries, and a list of the latest collections that are available owned by the USU library.

Effort Expectancy

Effort Expectancy is the easiness of the system that will affect individual efforts in doing their work (Momani, 2020; Venkatesh et al., 2012). Participants' feedback regarding effort expectancy in USULib Mobile is reflected in their responses to questionnaire statements numbered 11 to 16, incorporating variables such as Perceived ease of use, Complexity, and Ease of use (see Figure 3). Overall, a majority (77%) of respondents indicated that the USULib Mobile application is straightforward, easy to comprehend, and efficient in terms of both energy and time. (Andersson, 2022; Ming et al., 2021; Rakha, 2022; Shi et al., 2022).

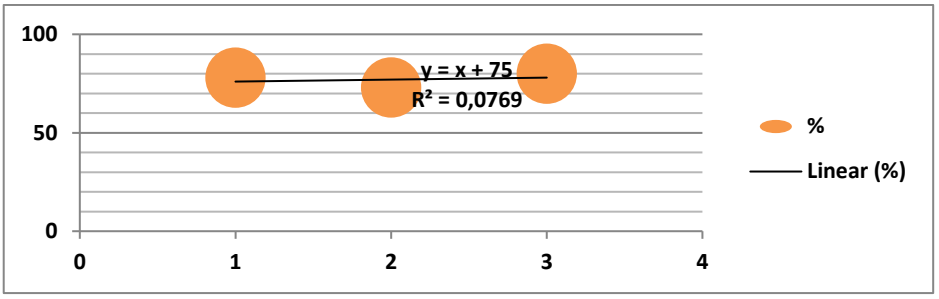

Figure 3. Respondents' responses to effort expectacy

Effort Expectancy is the user's perceived ease of use of the system (Belcher et al., 2022; González-Pérez et al., 2022). This convenience will lead to a person's belief that the system has benefits, thus creating a sense of comfort when using it at work. Using USULib mobile is very efficient and practical because users can access the service by simply pressing the "home" menu once in the USULib Mobile application.

Social Influence

Social influence refers to the degree to which an individual perceives that significant others believe that they should use the new system (Akinnuwesi et al., 2022; Chan et al., 2022; Mashiyane, 2022; Ming et al., 2021; Perera & Abeysekera, 2022). Respondents' responses to social influences on their intention to use the USULib Mobile application can have through the answers to questionnaire statements 17 to 22 with variables: Subjective Norm, Social Factors, and Image (Figure 4). Most (70%) of respondents stated that they used the USULib Mobile application due to the influence of USU's library policies, the influences of colleagues or friends, and other parties (Andersson, 2022). In general, respondents stated that the library strongly supports the use of the USULib Mobile application.

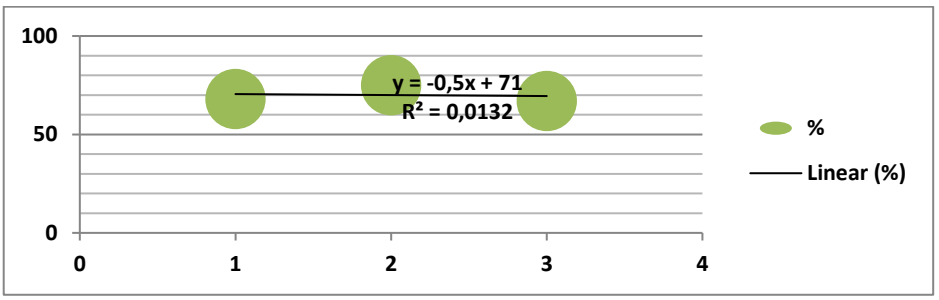

Figure 4. Respondents' responses to social influence

Social influence is the influence that refers to how other people influence one's behavioural decisions. This social influence is related to external pressure (friends). With the USULib Mobile application, users can share information about the application with other users who do not know about USULib Mobile. Thus USULib Mobile is more effective and optimal in improving library services.

Facilitating Conditions

Facilitating Conditions are the degree to which a person believes that the organizational and technical infrastructure exists to support the use of the system (Alami & El Idrissi, 2022; Momani, 2020; Venkatesh et al., 2012; Zareef & Ahmad, 2021). To find out respondents' responses to facilitating conditions on the use of USULib Mobile can be seen through the distribution of answers to questionnaire statements numbered 23 to 28 with variables: Perceived Behavior, Facilitating Conditions, and Compatibility (Figure 5). In general (60%) of respondents stated that they have compatible resources to access the USULib Mobile application. Most respondents also state have sufficient skills and knowledge to access the USULib Mobile application. Most respondents stated get help when they had problems using USULib Mobile.

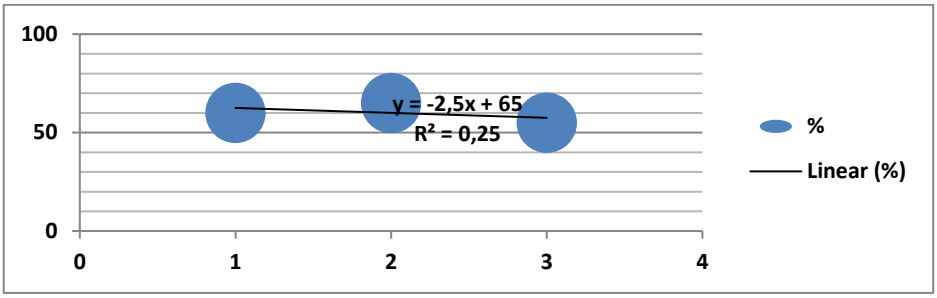

Figure 5. Respondents' responses to facilitating conditions

Facilitating Condition is the comfort level of an individual using a system supported by technical and organizational infrastructure. Facilitating conditions have a positive effect on the behavioural intention to use USULib mobile but is not significant.

Hedonic Motivation

Hedonic motivation is the pleasure and comfort felt by technology users. Hedonic motivation is also related to the psychological and emotional experiences of technology users and can be triggered by the characteristics and cognitive aspects of technology users (Momani, 2020; Venkatesh et al., 2012). To find out the respondents' responses to hedonic motivation in using the USULib Mobile application can be seen through the distribution of answers to questionnaire statement number 29 to 31 with variables: Fun or Pleasure Devired, Enjoyable, and Very Entertaining (Figure 6). Some (50%) of respondents stated that using the USULib Mobile application could increase prestige. Several respondents stated that they were more comfortable visiting the library directly. During the COVID-19 pandemic, the Libraries were closed, and only a few services were open for half a day, so they didn't want to use USULib Mobile.

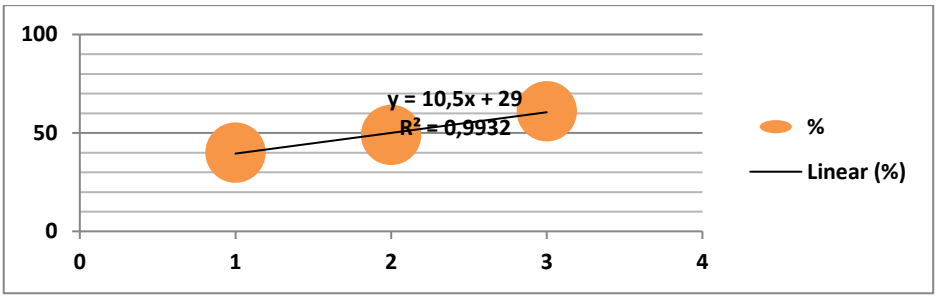

Figure 6. Respondents' responses to hedonic motivation

The facilities at USULib Mobile are beneficial for users. For example, if a user wants to borrow books or wants to see fines in the library, or wants to see collections borrowed, the user can only access USULib Mobile. Therefore, students use USULib Mobile.

Price Value

The price value is the extent to which consumers have to bear the costs associated with using technology. A consumer's trade-off between the perceived benefits of the application and the monetary cost of using them (Momani, 2020; Venkatesh et al., 2012). If the benefits felt by someone in using technology are greater than the costs incurred, it will have a positive impact on the technology (Elammari & Cavus, 2019; Stejskal et al., 2021). To find out the respondents' responses to the price value in the USULib Mobile application can be seen through the distribution table for the answers to the questionnaire statements numbered 32 to 37 with variables: Quality, Price, and Value (Figure 7). Most (61%) of the respondents stated that the costs incurred to access the USULib Mobile application were cheap in accordance with the benefits provided to users.

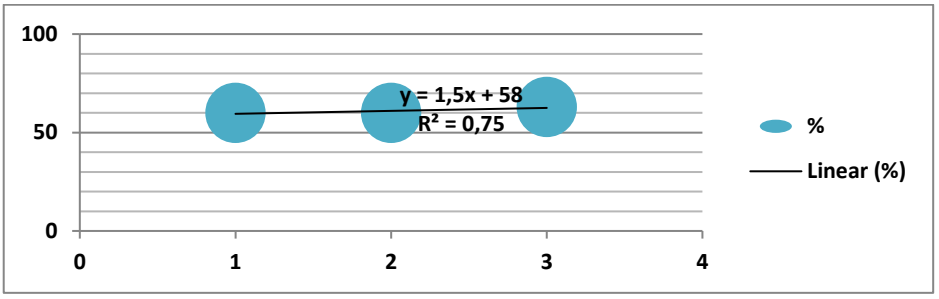

Figure 7. Respondents' responses to price value

The trade-off between the costs incurred by the user and the benefits obtained with this application is much greater than the costs incurred by the user (if viewed from the standpoint of the user's side), because in this case, the user is sufficient with capital one application, they can already access the information owned by USU Libraries wherever and whenever they want.

Habit

Habit is the extent to which a person tends to perform behaviour repeatedly (Akinnuwesi et al., 2022; Farzin et al., 2021). To gauge respondents' reactions to user habits in utilizing USULib Mobile, one can examine the distribution of answers to questionnaire statements numbered 38 to 43, involving variables like Prior Behavior, Automacity, and Experiences (Figure 8). Overall,

the majority (85%) of respondents expressed that they incorporate USULib Mobile into their daily routines and have a habit of using it before visiting the library.

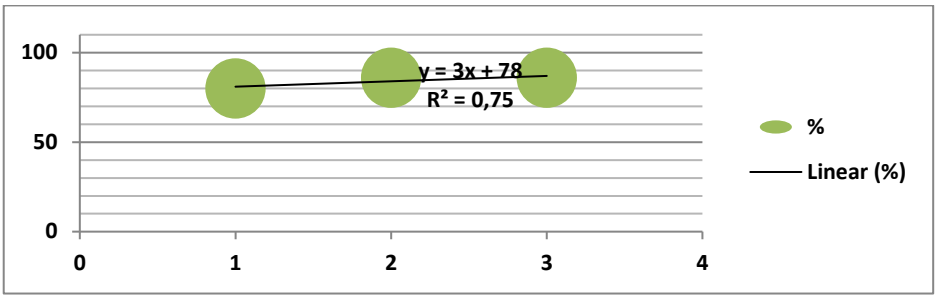

Figure 8. Respondents' responses on habit-related aspect

The use of USULib Mobile has become a habit for students, allowing them to swiftly check the availability of books and other facilities without the need to physically visit the library. This habit enables them to save valuable time.

Trialability

Trialability is an innovation that can be used on a limited basis (Rogers, 2006) prior to making a full-blown commitment. It is often assumed that trialability affects a person's willingness to adopt a technology. Trialability reduces risk for potential adopters and increases their confidence (Farzin et al., 2021). To understand how respondents perceive trialability in using the USULib Mobile application, one can examine their responses to questionnaire statements numbered 44 to 46, which encompass variables like Properly try it out, Trial long enough to see what it could do, and Deal of opportunity to try various capabilities (Figure 9). Most (70%) respondents stated that USULib Mobile technology could convince them to continue using USULib Mobile.

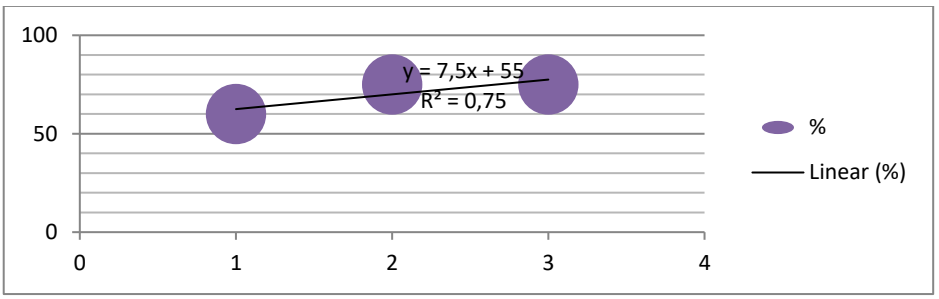

Figure 9. Respondents' responses to trialability

The results of the distribution of respondents' answers to the eight UTAUT2 indicators can be seen in Figure 10.

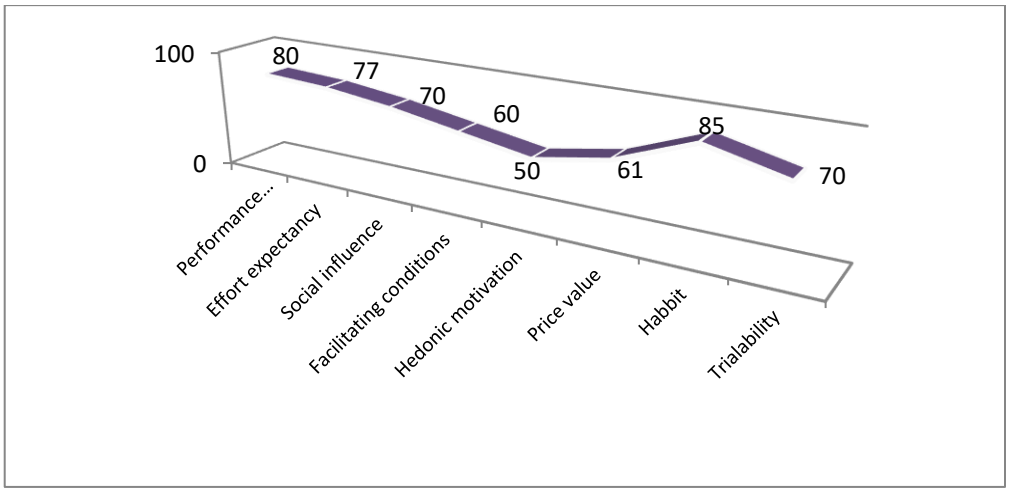

Figure 10. The distribution of respondents' answer

Discussion

The findings of this study align with the results of the USULIB Mobile usability level analysis based on the ISO/IEC 9126 indicator research instrument. Specifically, the results indicate that understandability achieved an average score of 70.1%, categorizing it as very good. Learnability obtained an average score of 63.7%, placing it in the good category. Operability scored an average of 55.3%, falling into the sufficient category. The attractiveness indicator had an average score of 51.1%, classifying it as unfavorable. Overall, the usability level of USULIB Mobile is considered good, with an average comprehensive score of 60.1% (Siregar & Dewiyana, 2018).

The application of online technology in the library has been studied thoroughly (Siregar & Dewiyana, 2018). All academic libraries of the 100 top online services accredited states are at the university level (Liu et al., 2021). The most common cellular services offered by libraries are cellular sites, text message services, e-books, and cellular access to databases and catalogues. Online application of the library aims to provide effective and efficient services to library users, as well as appropriate access for necessary access and fast access to relevant information, so implementation of the cellular application of the library is an important step (Sharma & Madhusudhan, 2017). The integration of online applications in libraries serves as a valuable tool to enhance and expand library services within educational environments. This implementation not only facilitates the improvement of existing services but also enables libraries to create innovative offerings. The use of online applications ensures faster access to library collections, contributing to an enhanced user experience. However, along with these advantages, the adoption of online applications in academic libraries presents both opportunities and challenges that institutions need to navigate (Ajibade, 2022; Madhusudhan & Dar, 2017). The application of mobile technology and its development provides the latest, user-friendly, personal, and dynamic information services to the newest information to library users. The application of a moving communication system helps (Dewiyana & Siregar, 2017; Haq et al., 2022; Shi et al., 2022).

The investigation into the utilization of mobile phones among students and their perceptions regarding mobile phones in libraries and information services reveals that offering telecommunications services in the library facilitates effective use and access to information services through mobile phones. The primary approach employed by the library involves delivering services through mobile devices (Elammari & Cavus, 2019). An examination of mobile trends and their applications for libraries encompasses various aspects such as Cellular Internet, Cellular Multimedia, Short Messages, etc. These technologies support a range of activities within libraries. Librarians and libraries respond to this shift by tailoring services to

align with the capabilities of these devices. Looking forward, there is potential for further enhancements and adaptations in library services in the context of mobile technology.

Mobile technology provide the most flexibel, fastest and easiest way to communicate, access and share information to anyone from anywhere and anytime. Mobile technology in libraries can adopt include: SMS notification, acess library website, allow accessing online public access catalogue (OPAC), providing mobile library instruction, free access of library e-resources/mobile library databaes, and SMS reference service (Dewiyana & Siregar, 2017; Siregar & Dewiyana, 2018).

he research findings indicate that the factors influencing users' intention to continue using USULib Mobile after the COVID-19 pandemic are grounded in the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) theory (Venkatesh et al., 2012) and constructs that can be tested (Farzin et al., 2021) are as follows: Performance Expectancy, USULib mobile was very helpful in improving user's performance from home without spending time traveling to the USU Library during the COVID-19 pandemic (Ajibade, 2022; Akinnuwesi et al., 2022; Rakha, 2022). Effort Expectancy, USULib Mobile is a solution to the problem of restrictions and working from home during the COVID-19 pandemic (Baticulon et al., 2021; Farida et al., 2021; Obiano & Ph, 2021). Social Influence, Universitas Sumatera Utara Library policies, the influences of colleagues or friends, and other parties (Andersson, 2022) strongly support the use of the USULib Mobile application. Hedonic Motivation, USULib Mobile could increase prestige but more comfortable visiting the library directly. During the COVID-19 pandemic, the Libraries were closed, and only a few services were open for half a day, so they didn't want to use USULib Mobile (Venkatesh et al., 2012). PriceValue, the costs incurred to access the USULib Mobile application were cheap in accordance with the benefits provided to users (Elammari & Cavus, 2019; Venkatesh et al., 2012). Habits, A small number stated that before the COVID-19 pandemic, they did not use it and preferred to come directly (Sangsawang, 2020) to the USU Library. However, with the imposition of restrictions and policies on working from home during the COVID-19 pandemic (Perera & Abeysekera, 2022), they were forced to learn how to use USULib mobile and eventually became accustomed to using it. Trialability, USULib Mobile technology could convince them to continue using USULib Mobile (Farzin et al., 2021).

The above results are supported by data that Universitas Sumatera Utara Library has developed the USULib Mobile Application to reach all USU academics, especially overcoming limited visits during the COVID-19 pandemic (Chan et al., 2022; González-Pérez et al., 2022). Users can search the collection of books in the OPAC database, place an order for books, extend the loan period, check for late fees for returning books, and issue a Certificate of Free from Library Bills and repositories. The book return due notification feature can overcome late book returns which result in fines; Users can return books on time. The use of USULib Mobile for the extension of book lending by users during 2021 is 40,280 items with a distribution as shown in Figure 11.

A study findings reveal similarities with previous research utilizing the Technology Acceptance Model (TAM) and Technology-Organization-Environment (TOE) models. Common factors influencing the adoption of mobile technology in the library context include ease of use, compatibility, relative advantage, and organizational competence. Additionally, participants, who spend 3-7 hours per day working from home, exhibit a high level of familiarity with smartphone usage (Asemi et al., 2020; Rivera, 2021) in chatting, downloading and uploading e-materials/e-documents.

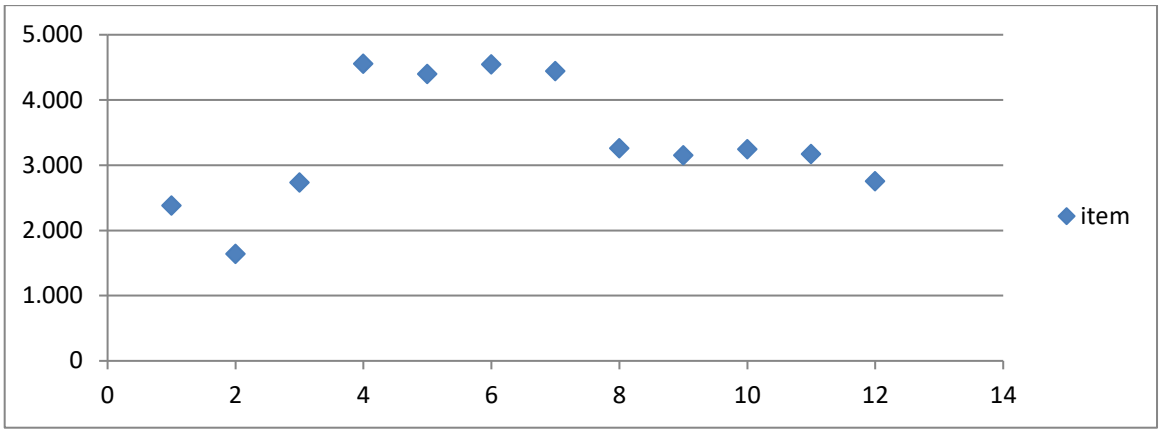

Figure 11. The use of USULib Mobile for the extension of book lending by users

Many readers often invest considerable time searching for the location of desired books in libraries with diverse collections (Andersson, 2022). To streamline this process, some libraries have adopted positioning technologies like RFID (Abcouwer & van Loon, 2020) or WiFi, offering online services to assist readers in locating books more efficiently. However, it is important to note that implementing such technologies can pose significant financial challenges for most libraries. Moreover, maintaining these systems may require substantial human and budgetary resources, potentially posing a hurdle for some libraries to ensure the effective and continuous operation of such systems.

Understanding users' intentions is crucial for libraries as it enables them to attract more customers, foster customer loyalty, and anticipate customer preferences for the development and improvement of services such as USULib Mobile. Additionally, user intentions play a pivotal role in achieving superiority and in maintaining or increasing the library's overall usage ranking. By comprehending and responding to user intentions, libraries can better align their services with the needs and expectations of their user base, enhancing overall user satisfaction and engagement.

4. CONCLUSION

Based on the calculated results, the average acceptance and usage rate of USULib Mobile is 69.12%. Notably, the highest level of acceptance is associated with the habit indicator at 85%, specifically linked with the Experiences variable. On the other hand, the lowest level is observed in Hedonic Motivation, standing at 50% with the Fun or Pleasure Derived variable. This particular factor presents an intriguing area for further investigation.

The study's findings suggest that user acceptance and the intention to persist in using USULib Mobile post-COVID-19 pandemic are primarily influenced by habit. Despite the initial adoption of USULib Mobile during the pandemic being a necessity, the establishment of a habitual pattern among users indicates a continued intention to use the application. This insight emphasizes the significance of habitual behavior in shaping user preferences and highlights the potential long-term impact of habit formation on technology adoption.

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