

## **ANALYSIS OF E-LIBRARY BASED ON LEVEL OF USER SATISFACTION USING EUCS AND IPA METHODS**

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### **ABSTRACT**

*IAIN Bukittinggi library is one of the libraries that implements the development of information technology, namely the use of e-Library as an online catalog facility to directly access collections of books, theses or other collections contained in the library. This research is based on the fact that users feel dissatisfied with the services provided by the e-Library, such as collections and collection information that do not meet user needs. The purpose of this study was to measure the level of satisfaction of e-Library users using the End User Computing Satisfaction method with five perspectives namely Content, Accuracy, Format, Ease of Use, and Timeliness. The Importance Performance Analysis (IPA) method is used to determine which attributes are important to be improved and which need to be reduced to be interpreted in the form of a matrix. This study also calculates the value of Customer Satisfaction Index (CSI) to determine the overall level of user satisfaction. The results of this study show that all attributes in terms of Importance are in a very important category, while the Performance attributes are in the satisfied category, namely the Content and Format variables. Variables with quite satisfied categories on Accuracy, Ease of Use and Timeliness variables. The results of the IPA matrix obtained 6 attributes with the most improvement in the Accuracy variable, the attribute with the most good performance in the Content variable. Overall, the CSI value is 60.34%, which means that users are quite satisfied with the performance provided by the e-Library.*

**Keywords:** *User Satisfaction, E-Library, EUCS, CSI.*

### **1. Introduction**

Libraries according to Law on libraries No.43 Year 2007 is a professional organization for managing collections of written, printed or recorded works to meet the needs of education, research, preservation, information and recreation for users using a standardized system. In today's global era, the world of libraries is increasingly modernizing, so libraries must be able to adapt to their goals to balance the information needs of users. The level of progress of a library can be measured from the application of information technology to the library (Fraser-Arnott, 2022; Murphy et al., 2022; Afriansyah et al., 2022).

In its development, the library has developed a library administration management system and library services, namely a library information system. The library information system can be interpreted as a system that includes hardware, software, procedures, and has integrated data that is used for library automation management so that it can make it easier for users to get the information they need (Rahmat et al., 2022). The use of information technology certainly makes it easy for librarians and users. According to Shastri & Chudasma, (2022) the benefits obtained in using the library information system are that there is an increase in the work productivity of users, and information search can be done more quickly (Wulansari et al., 2022; Nazaruddin, 2022).

In using the library information system, of course there are features that are used to assist activities that were previously done manually (conventionally). This can be seen from the point of view of collections and documents stored, developments began with traditional libraries that

only store books without using catalogs, to digital libraries that involve the internet and information technology in their use. The information technology in question is a computerized catalog called the Online Public Access Catalog (OPAC) (Wells, 2022). According to the ALA Glossary of Library and Information Science, it explains that OPAC is a bibliographical listing stored by a computer so that users can access information continuously with the approach of author, title, subject, ISBN, or a combination of the components mentioned (Begum & Elahi, 2022). It can be concluded that OPAC is one of the features offered in a library information system in the form of a catalog to facilitate users in searching for collection information available in the library.

IAIN Bukittinggi Library is one of the libraries that implements the development of information technology. One of the technological developments in the IAIN Bukittinggi library is the use of an online catalog called a library information system or often referred to as an e-Library which has been implemented since 2015. The IAIN Bukittinggi library has 26,638 book titles and 75,549 copies. Due to the large number of collections and copies of books, the library implemented a library information system (e-Library) at IAIN Bukittinggi which is an Online Public Access Catalog (OPAC) system that is used as an online catalog so that users can quickly search for the books and information needed.

The library information system (e-library) of IAIN Bukittinggi can be accessed via <http://katalog-pustaka.iainbukittinggi.ac.id>. Through this e-Library, users can directly access the collection of books, and thesis/final project contained in the library. This system aims to provide flexibility to users to search for information effectively and efficiently. The information contained in this online catalog is in the form of book identities and book availability because IAIN Bukittinggi has two library buildings located in two different locations. In addition, users can also find out whether the collections they are going to borrow are being borrowed by other users or not.

Based on the results of observations and interviews with the library and pre-survey data on IAIN Bukittinggi students that have been carried out, there are several problems that occur including. first, users are dissatisfied with the complete collection of books and book information contained in the e-library. Second, users are dissatisfied because the collections that have been searched for using the library information system cannot be found in the library. Apart from that, this e-library also contains a book catalog from Google, so that users sometimes cannot know whether the collection they are looking for is a Google catalog or a catalog from the library. This makes it difficult for users to choose to go directly to the library to look for books.

Third, users are dissatisfied with the appearance of the IAIN Bukittinggi e-Library because it has displays and menus that are not understandable, so it confuses users when searching for collections. In addition, there are duplicate menus and sub menus that don't have content yet. The next problem is that the data displayed is not up to date so that the availability of books listed on the system does not match the actual ones. The system will still display the availability of books even though the book is being borrowed by another user. This causes difficulties for library staff and students.

It is necessary to note that whether the implementation of an information system is in accordance with user needs or not. Based on the results of interviews since the IAIN Bukittinggi library has provided collection tracking facilities using the e-Library, the library has never measured the level of user satisfaction. So far, the library has never directly known the response of users regarding the e-library in meeting the needs of users. The use of technology in meeting the needs of users is important to study because it is not only related to the technology used, but also related to the end user of the information technology used (Ariano et al., 2022). The level of user satisfaction of an information system is the most important thing to assess the level of success of an information system (Ibrahim et al., 2022). Satisfaction is a comparison between expectations and reality that occurs. If expectations and reality are in line, then the level of user satisfaction of an information system also increases. Knowing the level of satisfaction of information system users can make it easier for related parties to be able to find out the strengths and weaknesses of the information system that has been implemented so that it can be

used as a reference in the process of developing the information system in the future (Çelik, K., & Ayaz, A. 2022). Therefore, in this final project, researchers will analyze user satisfaction library information system (e-Library) IAIN Bukittinggi to be able to find out whether the information system can meet the needs of users in obtaining information on library collections.

In measuring the level of user satisfaction, there are several methods that can be used. The method used in this study is the End-User Computing Satisfaction (EUCS) method. The EUCS method is a suitable method for measuring end-user satisfaction levels. Other researchers have tested this model a lot and the results showed no significant differences even though this instrument was translated into different languages (Frisina et al., 2022). According to Doll and Torkzadeh in Mauricette et al., (2022) the EUCS method is designed to evaluate the success of information systems by focusing on satisfaction using five components namely content, accuracy, format, ease of use, and timeliness. In addition, this study also uses an importance performance analysis (IPA), which is an analysis generated through user perceptions of the performance of an information system that is implemented in the form of a matrix (Putra & Bernarto, 2022). The matrix resulting from the importance performance analysis can map the attributes that allow for improvement so that the performance of a system can be better. Then an analysis is carried out using the customer satisfaction index (CSI) which is used to determine the level of user satisfaction in the use of an information system as a whole by taking into account the level of importance of product or service items (Novendra, 2020; Rizki et al., 2021; Novendra et al., 2022; Basil et al., 2021).

## **2. Research Methods**

### **Identifying Research Problems**

This stage will be carried out by formulating the problems to be discussed and determining the boundaries of the problems, describing the objectives and benefits of the research to be carried out. As for identifying the problems in this study, interviews were conducted with the library staff of IAIN Bukittinggi, as well as distributing pre-survey questionnaires to 30 students of IAIN Bukittinggi

### **Data Collection Technique**

To facilitate the research process, some data is needed. The data can be in the form of primary data and secondary data. The details of the data are as follows:

#### **1. Primary Data.**

Primary data is data obtained directly from the object/place of research. This data can be sourced from observation, distribution of questionnaires, and interviews with library staff, TIPD admins and students.

#### **2. Secondary Data.**

This data is data that can be obtained from internal research object data such as profiles from organizations. This secondary data can also be in the form of literature studies or references to the theories that support this research.

### **Population and Sample**

In this study, researchers used a questionnaire as a research instrument and then distributed it to e-Library users, namely active students of IAIN Bukittinggi. The active student population in 2020 uses the Bukittinggi IAIN library information system, which is 11,277 students.

Samples were taken using the Accidental Sampling technique and determining the number of samples (respondents) which were calculated using the Slovin formula with an error limit of 0.1 or 10% and Based on the results of calculations using the Slovin formula, the number of samples obtained in this study was 99 students.

### **Validity and Reliability Test**

After all the questionnaire data has been collected, the next step is to test the validity and reliability using SPSS tools. Validity test was carried out to find out whether the questionnaire used was valid or not. Questions in a questionnaire are declared valid if the correlation value is greater than the r-table. If there is an invalid statement, the statement must be corrected or deleted.

Meanwhile, the reliability test was carried out to determine whether the question items in the questionnaire were truly consistent in measuring the satisfaction level of IAIN Bukittinggi IAIN e-Library users. This test uses the Cronbach Alpha method. A statement can be categorized as reliable if the Cronbach Alpha is more than 0.60.

### **Analysis Using Importance Performance Analysis (IPA) and Customer Satisfaction Index (CSI)**

The next step is to analyze the results using Importance Performance Analysis (IPA). In analyzing the IAIN Bukittinggi e-Library by categorizing the results obtained in a cartersius diagram. This technique can analyze the performance of the IAIN e-Library Bukittinggi in fulfilling user satisfaction at the Bukittinggi IAIN library based on the level of expectation/importance and Performance of the system.

The stages in the Importance Performance Analysis (IPA) method are determining the level of conformity between the level of expectation/importance and the level of performance. This is done by categorizing the EUCS attribute as good or not good to determine the level of user satisfaction.

## **3. Results and Discussions**

### **Library Information System Analysis (E-Library)**

The Library Information System (e-Library) is an information system that is used as an Online Public Access Catalog (OPAC) which is a search tool to provide flexibility to users to search library collection information effectively and efficiently. This system has been implemented since 2015 and can be accessed via <http://katalog-library.iainbukittinggi.ac.id>. With the existence of this e-Library it is very helpful for users in searching for collections and can find out what library collections they need are being borrowed by other users or not. The business process flow that occurs when using the IAIN Bukittinggi e-Library is as follows:

1. On the main page, users determine the category of library collections by selecting the collection menu or directly typing search keywords in the form of title, author in the search feature that has been provided.
2. Next, a list of books related to the keywords that were previously typed will be displayed, then the user selects the desired book by clicking on the book title.
3. After clicking on the title of the book, detailed information about the book and information about the availability of the book will be displayed. Then the user can search for books on the library shelves based on book classification information

### **Respondent Analysis**

Respondent analysis was obtained after distributing research questionnaires. Respondents in this study were active students of IAIN Bukittinggi, totaling 99 people. With the identity of the respondent namely name, N-IM, Faculty, semester, gender and frequency of use of the IAIN Bukittinggi e-Library. Respondents were then asked to checklist the questions that had been presented, the items of the questions consisted of importance questions and performance questions.

### **Validity Test & Reliability Test**

Before calculating the level of performance and interest in the EUCS variable, a validity test will be carried out first. This test uses SPSS V.25 tools. The test is carried out by making a comparison between the r table (Product Moment) and the r count, with the condition that the r count must have a value greater than the r table value so that an instrument can be said to be valid. Based on the number of respondents, namely 99 people. Next, we will look for the value of  $d-f = 99-2$ , namely 97. It can be seen that the value of r table (Product Moment) is 0.1975 with a significant level of 5%.

This can be proven by the calculated r value for each EUCS variable having a value greater than 0.1975. Thus, it can be concluded that the 20 items of importance statements and 20 performance statements can be used as instruments to measure the level of satisfaction of IAIN Bukittinggi IAIN e-Library users.

The reliability test is determined by the Cronbach's Alpha coefficient with the provision that an instrument can be said to be reliable if the Cronbach's Alpha is above 0.60. Based on the

calculation results above, it is known that the alpha coefficient value in the importance statement is 0.891 out of 20 existing items. Meanwhile, the alpha coefficient value in the performance statement is 0.794 out of 20 items. Furthermore, according to the provisions of an instrument it can be said to be reliable if it has an alpha value > 0.60 and it is known that both are above 0.60 so that it can be concluded that each item of importance and performance statements can be used as a data collection tool.

**IPA Diagram Analysis**

Importance Performance Matrix consists of 4 quadrants, and each of these quadrants will be occupied by the attributes studied. Attributes that are in quadrant I mean that the attributes in this quadrant have a top priority level that deserves to be improved because they have high importance and low performance. Attributes that are in quadrant II mean that attributes need to be maintained because they have high importance and high performance. Attributes in the third quadrant mean that the attribute has a low priority for improvement because it has low importance and low performance. Then the attributes in quadrant IV mean that the attributes in this quadrant are felt to be excessive in their application because they are considered less important by the users where in this quadrant they have low importance and high performance.

The results of the importance performance analysis matrix on the quality of the Bukittinggi IAIN e-Library are shown in the figure below:

**Importance Performance Matrix**

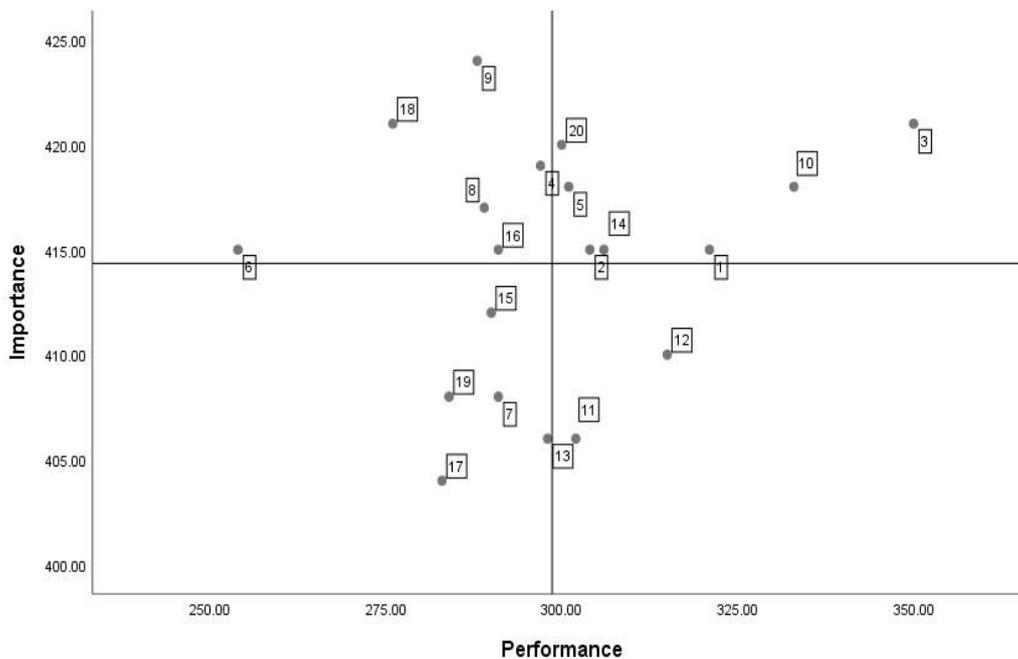


Fig. 1. Mapping Results on the Importance Performance Matrix

a. Quadrant I (Contentrate Here)

This quadrant has attributes with a high level of expectation/importance but has low performance. Quadrant I has a priority level the main and important performance improvements by e-Library users, so that this quadrant can also be called concentrate here / concentration here. The attributes included in quadrant I are as follows.

1. Fill in the collection information provided by the e-Library library information system IAIN Bukittinggi is complete (C4)
2. The information displayed by the IAIN Bukittinggi e-Library is correct and accurate (A2)
3. IAIN Bukittinggi E-Library provides results/output in accordance with the collections that can be found on bookshelves in the library (A4)

4. E-Library IAIN Bukittinggi has an attractive design (F1)
5. IAIN Bukittinggi E-Library has a hint/help feature to help navigate properly (E4)
6. IAIN Bukittinggi's e-library always displays the latest information (T2).

It can be seen that quadrant I consists of 6 attribute statements. This statement is a top priority for the IAIN Bukittinggi e-library which needs to be repaired, because these attributes have a low level of performance while users have high expectations for these attributes. The statement that needs to be improved on the content dimension is "The contents of the collection information provided by the IAIN Bukittinggi library information system are complete (C4)". Users consider this statement to be very important, but in fact this attribute is considered less satisfying for users because there is still information on search results and collection information that is displayed incompletely because the e-library should be able to provide complete information.

Furthermore, statements that need to be corrected on the accuracy dimension are "The information displayed by the IAIN Bukittinggi e-Library is correct and accurate (A2)" and "IAIN Bukittinggi's E-Library provides results/Output in accordance with the collections that can be found on the shelf books in the library (A4)". Both statements are considered very important but have not gone well. E-library users assess that there is a discrepancy between the collection and its actual existence. This can happen because according to librarians, collections are often not placed in their original places and inaccuracies in the preparation of collections according to their classification.

Furthermore, the statement that needs to be corrected on the format dimension is "IAIN Bukittinggi E-Library has an attractive design (F1)" this statement has low performance, which means that the e-library does not yet have designs that are considered attractive by users, therefore the library is expected to make improvements to the e-library design section.

Then the statement on the dimensions of ease of use that needs to be improved is "E-Library IAIN Bukittinggi has a guide/assistance feature to help navigate properly (E4)". This attribute is of course considered important in order to provide a description of the system being used. After observing the e-library, there was no help menu found at the IAIN Bukittinggi e-library, therefore there are still users who do not understand the use and how to use the IAIN Bukittinggi e-library. Then the last statement that needs to be improved on the timeliness dimension is "IAIN Bukittinggi's e-library always displays the latest information (T2)". This attribute has low performance. Librarians hope that the library can provide the latest information both regarding information on the availability of books and the latest collection of books on the e-library.

b. Quadrant II (Keep Up the Good Work)

This quadrant has attributes with a high level of expectation/importance and high performance. In quadrant II, the performance is in accordance with the expectations of users, meaning that the library can maintain performance that is already going well. The attributes included in quadrant II are as follows:

1. The contents of the information on the Bukittinggi IAIN e-Library are easy to understand (C1)
2. Fill in the reference information on the IAIN Bukittinggi e-Library that meets the requirements (C2)
3. The contents of the information provided by the IAIN Bukittinggi e-Library are very helpful in tracing library collections (C3)
4. Every IAIN Bukittinggi e-Library link that you click always displays the appropriate web page (A1)
5. E-Library IAIN Bukittinggi has an easy-to-understand menu structure (F2)
6. The features in the IAIN Bukittinggi e-Library are easy to use (E2)
7. The old collection displayed by the IAIN Bukittinggi e-Library is still important/useful (T4).

Based on Figure 1 it can be seen that the attributes in quadrant II consist of 7 attributes. These attributes are considered to have met the expectations of e-Library users, so the IAIN

Bukittinggi library can maintain and maintain the quality of e-Library performance based on user expectations.

c. Quadrant III (Low Priority)

This quadrant has attributes with low importance and performance. Statements in quadrant III are considered not so important according to users, so that the IAIN Bukittinggi library does not need to make the attributes in this quadrant a top priority in making improvements in the future. The attributes included in quadrant III are as follows:

1. E-Library IAIN Bukittinggi is error-free (A3)
2. IAIN Bukittinggi E-Library can interact clearly and understandably (E1)
3. IAIN Bukittinggi E-Library makes it easy for me to get the library collection I want (E3)
4. Get the books you need faster using the e-Library IAIN Bukittinggi (T1)
5. E-Library IAIN Bukittinggi responds to commands quickly and does not take a long time (T3).

In quadrant III there are 5 attributes that are in the low priority category, meaning that all statements in this quadrant are considered to have low performance and low importance. The library can prioritize other items for improvement.

d. Quadrant IV (Possible Overkill)

Quadrant IV has attributes with a high level of performance and a low level of expectation/interest, so that in this quadrant it is considered as excessive performance or often called possible overkill and users assess the attributes in this quadrant as not so important. The attributes included in quadrant III are as follows:

1. The layout of the information description in the e-Library collection is easy to understand (F3)
2. The output/result presented by the e-Library has an effective format/form (F4)

It is known that in quadrant IV there are 2 attributes that have a low expectation value and a high performance value. Therefore, the Bukittinggi IAIN library does not need to improve the performance of this attribute because it has performance that has exceeded the expectations of users.

### Customer Satisfaction Index(CSI)

Based on the results of the CSI calculation, it is known that the CSI value is 60.31%, which means that the user is quite satisfied. If the CSI value is 66% or more, it means that the user is satisfied with the services provided by the IAIN Bukittinggi e-Library. With a value of 60.31%, it can be interpreted that users are quite satisfied with the services provided at the IAIN Bukittinggi e-Library because the perceived performance is not optimal. Therefore, to be able to increase the value of user satisfaction in using the IAIN Bukittinggi e-Library, one of the efforts that can be made is to improve service performance in quadrant I IPA which was discussed earlier. According to Hamzah et al., (2022) CSI can be improved by making improvements to the performance attribute results from IPA. The value of the CSI is directly proportional to the average value of importance and performance scores, so that if the average score of importance/expectation and performance score is increased, it can affect the increase in the value of CSI. Improvement of the attributes obtained through IPA is expected to increase the value of CSI in e-Library services by up to 100%.

### Discussion

This section will discuss the extent to which the respondent's assessment of the IAIN Bukittinggi e-Library is based on the EUCS variables, which consist of important statements and performance statements. The results of the Bukittinggi IAIN e-Library analysis are described as follows:

a. Analysis of E-library User Satisfaction Based on Content Variables

Obtaining respondents' responses to the quality of the IAIN Bukittinggi e-Library based on the level of importance is in the "Very Important" category and the performance level is in the "Satisfied" category.

The level of satisfaction of respondents to the content variable based on the level of suitability has a value that is still below 100%, meaning that the services provided are still below the user's expectations, so that it can be said that the user is not satisfied based on the

content variable. When viewed from the priority order of each attribute in the content variable, it is known that statement C4 has the lowest suitability value, namely the incomplete information content provided by the IAIN Bukittinggi e-Library. While the attribute that has the highest suitability value is statement C3, namely the information content provided by the e-Library is very helpful in tracing collections.

Based on the average value that has been obtained, the location of the IPA quadrant matrix can be determined. Of the 4 statements on the content variable, they are spread to quadrants I and quadrants II. The IPA quadrant is shown in Figure 4.9 which was discussed earlier. The statement is included in quadrant I which is an attribute that is a top priority for improvement, including the complete collection of information provided by the e-Library. It is imperative that any information displayed has complete content and meets user needs. This is in line with the opinion that an information system should be able to meet user needs and have the latest information, because the more complete the information contained in the information system, the level of user satisfaction will increase. In addition, quality information also affects user satisfaction, the information content in a system should have a high level of relevance and be concise (Hamzah et al., 2022). For attributes that are in quadrant I-I, namely the content of available information is very helpful in browsing library collections. So that the attributes in this quadrant deserve to be maintained because they are in accordance with the expectations of users.

Because the content attribute relates to the data that has been inputted by the library, the completeness and appropriateness of the information is very important because it will be felt directly by the end-user as stated by Doll and Torkzadeh (1988) measuring the content of an information (content) based on 4 indicators, namely the accuracy of information, appropriate information, information search results, information - Sufficient information and complete information. After obtaining the library assessment on the attributes that represent the content variable, an overview of the priority improvements to the e-Library is obtained as material for consideration for the IAIN Bukittinggi library in order to increase user satisfaction.

#### b. Analysis of E-library User Satisfaction Based on Accuracy Variables

Obtaining respondents' responses to the quality of the IAIN Bukittinggi e-Library based on the level of importance and performance on the accuracy variable is in the "Very Important" category and the performance level is in the "Quite Satisfied" category. Assessment of the satisfaction level of respondents on the accuracy variable based on the value of the suitability level has a value that is still below 100% meaning that the services provided are still below the expectations of the user, so that it can be said that the user is not satisfied. When viewed from the order of priority on each attribute of the accuracy variable, it is known that attribute A2 has the lowest suitability value of all attributes, namely the information displayed by the e-library is correct and accurate. Meanwhile, the attribute that has the highest suitability value is attribute A1, that is, every e-Library link that is clicked always displays the appropriate web page.

Based on the average value previously obtained, it is known that the attributes of the accuracy variable are spread over 3 quadrants, namely quadrant I, quadrant II, quadrant III. Statements included in quadrant I which are attributes that are a top priority for improvement, namely the information displayed by the e-Library is true and accurate and the e-Library provides results/output that are in accordance with the collections that can be found in the library. Therefore, improvements can be made by making adjustments to the collection both from the classification number, and the location and availability of the collection. According to Hamzah et al.,(2022) the accuracy of the system can be assessed based on the frequency with which the system produces incorrect outputs as well as the number of errors that appear when processing inputs.

Attributes located in quadrant II consist of only one attribute, that is, every e-Library link that is clicked always displays the appropriate web page. The attributes contained in this quadrant should be maintained because they are in accordance with the expectations of the users. While the attributes that are in quadrant III, namely e-Library are free from error. attributes that are in this quadrant are not significant

It must be ignored, but improvements can also be made to provide maximum results. After obtaining an overview of the repair of the e-Library, it is hoped that it will make it easier for the IAIN Bukittinggi library to make improvements based on the attributes of the accuracy variable so that the e-Library can be used by users without any problems. This is very important because it is in line with the opinion of Barokhah et al., (2017) that a person will make his choice to use an application if he sees that the application has a good level of accuracy whether the menu is available, free of errors, the input generated appropriate, and reliable and up to date information

#### c. Analysis of E-library User Satisfaction Based on Format Variables

Obtaining respondents' responses to the quality of the IAIN Bukittinggi e-Library based on the level of importance on the format variable is in the "Very Important" category and performance is in the "Satisfied" category. Assessment of the level of satisfaction of respondents on the format variable based on the value at the level of conformity also has a value that is still below 100% meaning that the services provided are still below the user's expectations so that it can be said that the user is not satisfied. When viewed from the priority order of improvement on each format attribute, it is known that attribute F1 has a low suitability value. The e-library has an attractive design. While the attribute that has the highest suitability value is attribute F2, namely the e-Library has an easy-to-understand menu structure.

Based on the average value that has been obtained previously, it is known that the attributes of the format variable are spread into 3 quadrants, namely quadrants I, II, IV. Statements that are included in quadrant I contain the main attributes that need to be improved, namely the e-Library has an attractive design. According to Hutami and Camilia (2016) end-user satisfaction can be increased by paying attention to an attractive appearance and user ease in using the interface, this is considered to have an effect on user effectiveness.

Based on this, the library can make improvements to the appearance so that the e-Library has an attractive and clear appearance.

Attributes located in quadrant II consist of one attribute, namely the F2 e-library has an easy-to-understand menu structure. This means that the e-Library has a menu structure that is easy for users to understand so that this attribute can be maintained. Attributes located in quadrant IV consist of 2 attributes namely

F3 the layout of the information description of the information is easy to understand and F4 the output display is presented in an effective format. The attributes in this section are considered redundant for improvement, but that does not mean that the attributes in this section are ignored and ignored. After obtaining an overview of the repair of the e-Library on the format variable, it is hoped that it can become a reference for the library in making improvements so that it can increase the effectiveness of using the e-Library in the future

#### d. Analysis of E-library User Satisfaction Based on Ease of Variables

Acquisition of respondents' responses to the quality of the e-Library IAIN Bukittinggi based on the level of expectation (importance) on the variable ease of use is in the "Very Important" category and performance is in the "Quite Satisfied" category. Assessment of the satisfaction level of respondents on the ease of use variable based on the level of suitability also has a value that is still below 100% meaning that the services provided are still below the user's expectations so that it can be said that the user is not satisfied. When viewed from the priority order of improvement on each ease of use attribute, it is known that attribute E4 has a low suitability value. The e-Library has an auxiliary feature to help navigate properly. While the attribute that has the highest suitability value is attribute E2, namely the features contained in the e-Library are easy to use.

Based on the average value that has been obtained previously, it is known that the attributes on the ease of use variable are divided into 3 quadrants, namely quadrants I, II, III. The statement of quadrant I attributes consists of 1 statement, namely the e-Library has a help feature to help navigate properly. Users consider that the guide feature is very important to make it easier for users if they feel confused in using the e-Library. According to Purwati et al., (2022) user satisfaction can be obtained if an information system does not cause confusion

when used, the information system can provide tool tips for user convenience and provide error messages when an error occurs.

Attributes that are in quadrant II are features that have an easy-to-use e-library. This attribute means that the features in the e-Library are easy for users to use in searching library collections, so the attributes in this quadrant should be maintained. Attributes that are located in quadrant III, namely e-Library can interact clearly and understandably; e-Library makes it easier for me to get the collection I want. Both of these attributes have a low priority for improvement, but improvements can also be made to provide maximum satisfaction to users.

After obtaining an overview of the repair of the e-Library, it is hoped that it will make it easier for the IAIN Bukittinggi library to make improvements based on the attributes of the ease of use variable, so that users can use the e-Library facility without any problems. Due to the ease of use of an information system it is very important which includes all processes from data input processes, data processing, data search and display of final data that will be used by end users.

#### e. Analysis of E-library User Satisfaction Based on the Timeliness Variable

Obtaining respondents' responses to the quality of the IAIN Bukittinggi e-Library based on the level of importance on the timeliness variable is in the "Very Important" category and performance is in the "Quite Satisfied" category. The assessment of the level of satisfaction of respondents on the timeliness variable based on the level of suitability also has a value that is still below 100% meaning that the services provided are still below the user's expectations so that it can be said that the user is not satisfied. When viewed from the priority order of improvement on each attribute, it is known that attribute T2 has a low suitability value. The e-Library displays the latest information. While the attribute that has the highest suitability value is attribute T4, namely the old collection displayed by the e-Library is still important and useful.

Based on the average value previously obtained, it is known that the attributes of the timeliness variable are spread over 3 quadrants, namely quadrant I, quadrant II, and quadrant III. Attribute statements that are the top priority in quadrant I, namely the e-Library displays the latest information. Users feel dissatisfied with the up-to-date information and collections contained in the e-Library. Therefore, this attribute deserves improvement, one of which is by completing information and collections in the e-Library. Attributes that are in quadrant II, namely the old collections displayed by the e-Library are still important and useful. This attribute deserves to be maintained, the library does not have to remove old collections from the library because these collections are still needed by users. While the attributes in quadrant III, namely e-Library, respond quickly and do not take a long time.

It should be noted that the timeliness of an information system is very important to note. According to (Purwati et al., 2021) a timely information system can be assessed from the fast response time and according to user needs, the availability of up to date information, and the availability of shortcuts to support fast work processes. After knowing this, it can be an illustration for the library in making improvements to the IAIN Bukittinggi e-Library so that users can be more satisfied in using it without any problems.

#### 4. Conclusion

From the results of the analysis of the research on the analysis of the library information system (E-Library) of IAIN Bukittinggi based on the level of user satisfaction using the EUCS and IPA methods, the following conclusions are obtained: 60.31 %. With this value it can be interpreted that users are quite satisfied with the performance of the IAIN Bukittinggi e-Library. From the IPA analysis, it shows that there are attributes that are in quadrant I which are priority improvements where these attributes have high expectations and performance is rated low. The results of the IPA analysis also show that there are attributes that are in quadrant II which is an achievement that deserves to be maintained because it has high expectations then it is balanced with high performance as well.

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