



EVALUATION OF USER SATISFACTION OF IBI LIBRARY APPLICATION USING PIECES MODEL

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Abstract

This research discusses the use of the IBI library application using the PIECES model. PIECES is a framework consisting of six components: Performance (Reliability), Information (Information), Economy (Economy), Control (Control), Efficiency (Efficiency), and Service (Service). This study aims to evaluate the user satisfaction of the IBI library application by using quantitative descriptive research methods. The author investigates this application by taking a random sample of 15 users of the IBI library application. The sampling technique used was random sampling. Data was collected using a Likert scale with 5 scale criteria. The results of this study Based on the results of the data collection process and data analysis, the average value calculated for each reference is taken from the PIECES framework method. Calculating the data in the performance domain gives a score of 2.80. This shows that the assessment has received a POOR predicate. Calculating data in the information and data domain gets a result of 2.96 which indicates that the assessment has received a SUCCESSFUL predicate. Calculation of data on the economics domain gets a result of 3, meaning that the domain will get the predicate SUCCESSFUL. Calculation of data in the control and security domain gets a score of 2.73 which indicates that the domain has received a SUCCESSFUL predicate. Data calculation in the efficiency domain gives a score of 2.73. This shows that the domain has received a POOR predicate. Calculating data for the service domain produces a result of 2.82, meaning that the domain will get the predicate ENOUGH SATISFIED. Based on the results obtained from each domain, the calculation of user satisfaction of IBI applications on average gets an overall user satisfaction rating of 2.84. This means that the user satisfaction of the IBI LIBRARY application is quite Satisfied.

Keywords: IBI Library; Evaluation; pieces model

INTRODUCTION

The encouragement of a quality of service in the company is very influential in providing a service to users. This can be used to maintain users in the long term and users can increase or remain with good service quality.¹

According to Yuli Asbar, service quality is said to be one of the requirements of a company in maintaining users, the high quality of service provided by the company will be displayed on the aspect of customer satisfaction. The role of service quality is included in a very important part in the framework of the glory of an agency. It can be concluded that the company can improve the quality of user satisfaction with the company.²

The word bank comes from the Italian language, Banco, which means a piece of board used as a place to put books, namely a kind of table Mohammad Muslehuiddin, 1998, said that this function then changed more widely, namely as a table where to exchange money. This activity can be carried out by lenders (creditors) and money changers in continental Europe to show / show off their money to traders and people who sail.

Activities like this began to occur in medieval times and this is where the term "bank" came from. In relation to the sentence above, if the banker failed to do his business and obligations to the customer or customer, the customer or customer would be disappointed and the banco would be vandalized and destroyed. It was from this event of destruction and destruction of banco that the term "bankrap" arose.³

Ahmad Salaby in 1982 defined the history of the emergence of this bank with a version that is slightly different from the others. According to Salaby in that year, in ancient times there were money changers waiting behind their respective tables on the beaches of the Mediterranean (South Coast of Italy). This table was called a Banco in Italian and on it were placed the various types of currency needed by people sailing to the East. Traders and sailors would exchange their money in this area so that it could be used at the destination of the trade. Apart from the money-changing activities carried out by people in those years in such a way, sometimes the money-changers could also provide loans to those who were in need. This activity arguably grew over the years so that foundations emerged that ran these financial activities. These foundations are known in the modern era as 'banks'.⁴

¹Nurhalisa Sakir et al., "Penerapan Metode Pieces Framework Sebagai Evaluasi Tingkat Kepuasan Pengguna Aplikasi Seabank Di Balikpapan" 9, no. 2 (2022): 344–51, <https://doi.org/10.30865/jurikom.v9i2.4047>.

²Y. Asbar and M. A. Saptari, "Analisa Dalam Mengukur Kualitas Pelayanan Terhadap Kepuasan Konsumen Menggunakan Metode PIECES" 6 (2017): 39–47.

³LUBIS IRSYAD, *BANK DAN LEMBAGA KEUANGAN LAIN*, 1st ed. (MEDAN: USU press, 2010).

⁴Ibid.

Bank Indonesia is the independent Central Bank of the Republic of Indonesia as stipulated in Article 4 of Law No. 23 of 1999 as amended by Law No. 3 of 2004. The independence of Bank Indonesia since the enactment of the Act also follows the trend of Central Banks in other countries (UK in 1997), Japan (in 1998) Germany (in 1949). Bank Indonesia only has a single objective, which is to achieve and maintain the stability of the rupiah, while its duties are 3 (three) namely (i) Determine and implement monetary policy, (ii) Regulate and maintain a smooth payment system and (iii) Regulate and supervise banks. The task of bank supervision will be carried out by an independent institution established by law. In addition to following the trend of central banks in other countries, the birth of Bank Indonesia's independence cannot be separated from the impact of the 1997 economic crisis where in the previous law (Law No. 13 of 1968).⁵

By using PIECES as a system analysis tool, a detailed and comprehensive system will receive special attention, so that the strengths and weaknesses of the system can be known to be used as a reference for the company's further progress.⁶

In this research paper, using the PIECES analysis method, it is hoped that it can provide a comprehensive assessment of the application of the system used, and the results obtained from this analysis are expected to be a reference for continuing to develop the system for even better progress. The hope of the results of this study is that it can provide knowledge, especially research in the field of evaluating application-based Bank Indonesia information systems with PIECES and provide input to BANK INDONESIA to find out whether the use of application-based Information Systems has made users satisfied with the system. In this study using the PIECES method analysis, it can be seen how the evaluation of the application-based Bank Indonesia information system is based on indicators of Performance, Information, Economy, Control, Efficiency and Service.

THEORY BASIS

The research entitled "EVALUATION OF USER SATISFACTION OF THE IBI LIBRARY APPLICATION USING THE PIECES MODEL", which was conducted in 2023. The purpose of this study is to evaluate the utilization of the ibi library application and find out what causes and also the reasons users rarely use and access the ibi library application, this study

⁵Murdadi Bambang, "INDEPENDENSI BANK INDONESIA DI PERSIMPANGAN JALAN" 9, no. 1 (2014): 1–15.

⁶Adi Supriyatna and Jurusan Manajemen Informatika, "PERPUSTAKAAN DENGAN MENGGUNAKAN PIECES FRAMEWORK" XI, no. 1 (2015): 43–52.

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uses quantitative research. This research was conducted online at the BANK INDONESIA Library application in December 2023.

2.1 Evaluation

Etymologically "evaluation" comes from English, namely evaluation from the root word value which means value or price. Value in Arabic is called al-qiamah or al- taqdir which means assessment (evaluation). Several experts give opinions about the meaning of evaluation in terminology including: Edwind in Ramayulis states that evaluation is an action or process in determining the value of something. Meanwhile, according to M.Chabib Thoha, evaluation is a planned activity to find out the state of the object by using instruments and the results are compared with benchmarks to obtain conclusions. The definition of evaluation in general can be interpreted as a systematic process to determine the value of something (provisions, activities, decisions, performance, processes, people, objects and others) based on certain criteria through assessment. To determine the value of something by comparing with criteria, the evaluator can directly compare with general criteria, can also take measurements of something that is evaluated and then compare with certain criteria. According to the Big Indonesian Dictionary or KBBI, evaluation means assessment, the process of finding the value of information services or products according to the needs of consumers or users or the collection and observation of various kinds of evidence to measure the impact and effectiveness of an object, program, or process in relation to predetermined specifications and user requirements.⁷

According to the Big Indonesian Dictionary or KBBI, the process of discovering the value of an information service or product according to the needs of consumers or users, the collection and observation of various kinds of evidence to measure the impact and effectiveness of an object, program, or process in relation to predetermined specifications and user requirements is called evaluation.

2.2 Digital Library

According to Ismail Fahmi in Winata, a digital library is a system consisting of hardware and software using various information technologies, electronic collections, management staff, users, organizations, and work mechanisms, as well as services..⁸

⁷Idrus L, "EVALUASI DALAM PROSES PEMBELAJARAN", vol.9. no.2 (2019). *Jurnal manajemen pendidikan islam*.

⁸ dan Kurnia Muludi Andri Winata, Ketut Artaye, "RANCANG BANGUN PERPUSTAKAAN DIGITAL" 13 (2019): 75–85.

According to the Indonesian Library dictionary, a digital library is a library system that includes various services and information objects through digital devices. These libraries do not operate independently but are connected to a variety of other resources.⁹

2.3 Definition of Satisfaction

Library satisfaction comes from two words: satisfaction and library. The library must be satisfied. It is in line with Schnars' opinion in Wijaya that the goal of a company is to create satisfaction for its customers. Kotler expressed an opinion about satisfaction, namely "satisfaction is a person's feeling of pleasure or disappointment that comes from a comparison between his impression of the perceived performance of a product and his expectations" users.¹⁰ According to Irawan, satisfaction can be defined as people's perceptions of products or services that have met their expectations ". Satisfaction can also be interpreted as a condition in a person or group of people who have succeeded in getting something they need and want in a service.¹¹

2.4 Users

According to Law No.43 of 2007 concerning libraries, library users are individuals, groups of people in the community who utilize library service facilities. Library users can also be defined as people who come to the library with certain intentions, goals, expectations so that they can obtain the information they want in an easy and enjoyable way. There are various types of users such as students, lecturers, teachers, employees, and the general public depending on the type of library.¹²

2.5 Library Satisfaction

According to Lasa, library satisfaction is the level of feeling of a person who has compared the perceived performance or results in accordance with his expectations.¹³ Meanwhile, Yuniarti argues, "library satisfaction is the perceived result of using products and services, equal to or exceeding the desired expectations."¹⁴

⁹ RAFIAH, "ANALISIS PEMANFAATAN APLIKASI IBI LIBRARY OLEH PEMUSTAKA DI PERPUSTAKAAN BANK INDONESIA (BI ACEH)," no. 8.5.2017 (2022): 2003–5, <https://www.who.int/news-room/fact-sheets/detail/autism-spectrum-disorders>.

¹⁰ FRANSISCA RAHAYUNINGSI, "Mengukur Kepuasan Pemustaka: Menggunakan METODE LIBQUAL," 2019, 75–85.

¹¹ Muhammad Abdillah Islamy Dkk, "Analisis Kepuasan Pemustaka Tentang Kualitas Layanan Perpustakaan Menggunakan Metode Libqual," *Jurnal, (Jakarta: Fakultas Ilmu Pendidikan Univertas Pendidikan Indonesia*, 1 (2016).

¹² RAHAYUNINGSI, "Mengukur Kepuasan Pemustaka: Menggunakan METODE LIBQUAL."

¹³ Lasa, *KAMUS KEPUSTAKAWANAN INDONESIA* (Pustaka Book Publisher, 2009).

¹⁴ Pandita Andi, "Pengaruh Kualitas Pelayanan Terhadap Kepuasan Pemustaka Di Upt Perpustakaan Universitas Negeri Makassar" (Fakultas Adab dan Humaniora Universitas Islam Negeri Alauddin Makassar, 2017).

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2.6 The importance of library satisfaction

One of the actions that libraries must take to make users feel satisfied with library services is to maintain a harmonious relationship between library users. Tjiptono conveyed that there are several benefits that will be obtained by a company for customer satisfaction, namely:¹⁵

- a) The relationship between the company and its customers becomes harmonious.
- b) Provide a good basis for repeat purchases.
- c) Encourage the creation of customer loyalty.
- d) Forming an informal word of mouth recommendation which will be very profitable for the company.
- e) The company's reputation becomes good in the eyes of customers.
- f) The profit earned can increase.

RESEARCH METHODS

In this study the authors used a quantitative descriptive research method which aims to describe, summarize, share conditions, various situations or various variables that arise in the community which is the object of research.¹⁶ Descriptive research means research that converts numbers into statements. Quantitative research is designed when preparing a research proposal. Explanatory factors in quantitative research called variables or parameters are determined in advance simultaneously with the hypothesis to be tested. In another perspective, the concept of rationality which is a description of behavioral determinants has a fundamental difference. Quantitative has the nature of rationality in the concept of homo economicus where the best is the largest or most. Quantitative methods consider science to be characterized by empirical research, phenomena can be reduced to empirical indicators that represent truth, while from an ontological aspect (reality) there is only one truth where objective reality in humans is independent (Sale, Lohfeld and Brazil, 2002). Furthermore, Sale, Lohfeld and Brazil (2002) said that epistemologically the investigator and the investigated are independent entities, so that researchers are only able to study phenomena without influencing or being influenced by these phenomena. In the context of the number of informants or respondents. Quantitative research refers to number and size. In interpreting

¹⁵ RAHAYUNINGSI, "Mengukur Kepuasan Pemustaka: Menggunakan METODE LIBQUAL."

¹⁶ and A. Widayaka N. H. Assobarry, F. N. Sabila, R. Hadiwiyanti, "Analisis Tingkat Kepuasan Pengguna Aplikasi Sikda Menggunakan Framework Pieces Di Dinkes Sidoarjo," 2021.

the results, quantitative research tries to parse the breadth of the study results and generalize as truth or empirical facts in general, while qualitative research examines the depth of facts or events, so that they are local and not in the context of generalizing empirical findings as general events. Quantitative methods assume knowledge is "out there" so knowledge is to be found, there is a reality that can be physically known by researchers. Therefore, in interpreting decisions and behaviors that develop, intuition needs to play a role there. For example, the word "yes" or "no" from an informant is not necessarily the real answer from the informant. This means that the answer "yes" can also be interpreted as "no".¹⁷

2.7 Tahapan penelitian

- a) Problem identification is the initial stage of a study by identifying problems. Problem identification is used to find out the problem to be analyzed. Thus, the final results that can be obtained will be in accordance with the research objectives. This research was raised because the author wanted to evaluate the information system at Bank Indonesia which was already application-based with PIECES and wanted to find out whether the use of the application-based Information System had made users satisfied with the system.
- b) Literature study in this research is useful for deepening the knowledge that is the basis for this research. Literature sources can be obtained from national and international journals, accessing the public web, and previous research found on the internet. Pengurutan kuesioner digunakan untuk menampung dan mengelola semua pertanyaan-pertanyaan yang sudah menjadi data untuk mengetahui tingkat kepuasan pengguna aplikasi IBI LIBRARY. Jumlah responden yang dibutuhkan pada penelitian ini berjumlah 15 responden mahasiswa UIN Raden Intan. Skala pengukuran yang digunakan pada penelitian ini ialah skala likert.
- c) Research data collection is carried out to ensure that the data owned is valid, the validity test is carried out first.
- d) The data analysis stage of this research is taken from respondents who have calculated the average. By using the average satisfaction formula and determining the level of satisfaction based on the six aspects of the PIECES Framework.

¹⁷ Muhammad Firmansyah, Masrun Masrun, and I Dewa Ketut Yudha S, "Esensi Perbedaan Metode Kualitatif Dan Kuantitatif," *Elastisitas - Jurnal Ekonomi Pembangunan* 3, no. 2 (2021): 156–59, <https://doi.org/10.29303/e-jep.v3i2.46>.

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- e) The research results are the final stage of this research. After data analysis, validity testing and results from research that has been analyzed using the PIECES Framework. This method also provides a conclusion to the research.

2.8 Population and Sample

The population and samples that the authors used in this study were from respondents who used the IBI Library application with a total of 15 respondents. And the sampling technique in this study used random sampling.¹⁸ Where respondents are given a statement and then filled in according to what they feel when using the IBI Library application.

2.9 Data Collection

As for what is done in a data collection to get accurate information, namely as follows: Observation is a technique or way of collecting data by observing ongoing activities. Questionnaire is a data collection method that is carried out using a set of questions or written statements to respondents to be answered. The questionnaire is a researcher who already knows accurately the two variables to be measured and understands what is needed based on the respondent. In addition, general news is also suitable for use if the number of respondents is relatively large.

2.10 Data Measurement Methods

To get the results of the evaluation of the system, data measurement is needed. In this study, the data measurement method uses a Likert scale. The following is a data measurement using a Likert scale can be seen in table 1 below.¹⁹

JAWABAN	KRITERIA	SKOR
Sangat setuju	SS	4
Setuju	S	3
Tidak setuju	TS	2
Sangat tidak setuju	STS	1

2.11 Data Analisis

¹⁸ Choriah and E. Nurmiati, "Analisis Kepuasan Pengguna Whatsapp Sebagai Media" 4 (2022).

¹⁹ Sakir et al., "Penerapan Metode Pieces Framework Sebagai Evaluasi Tingkat Kepuasan Pengguna Aplikasi Seabank Di Balikpapan."

In determining data analysis, it is necessary to calculate the average value of each question of each questionnaire. But before determining the average value of each question, the user satisfaction value must first be determined. User satisfaction level using a scale from Kaplan and Norton.²⁰ The interval table for user satisfaction can be seen in table 2.

SKALA	TEGORI PENILAIAN
1 - 1,79	Sangat tidak puas
1,8 - 2,59	Tidak puas
2,6 - 3,3	Cukup puas
3,4 - 4,91	Puas
4,92 - 5	Sangat puas

The assessment is carried out by calculating the average value of each question from the questionnaire distributed. The following formula is applied in calculating the average of each questionnaire answer can be seen in the formula.

$$Rk = \frac{JSK}{JK}$$

Keterangan :

RK = Rata-rata Kepuasan

JSK = Jumlah Skor kuesioner

JK = Jumlah Kuesioner

RESULTS AND DISCUSSION

3.1 System Analisis

PIECES is a best practice learning and development initiative that provides an approach to understanding and improving care for individuals with complex physical and cognitive needs and behavior change. PIECES enables the continuous improvement of shared care through human resource development. In the PIECES framework there are six components that can be used in evaluating the satisfaction of information system us²¹

²⁰ and A. Hermawansyah Suprayitno, D. S. Canta, "Analisis PIECES Framework Terhadap Kepuasan Mitra Go-Food Dalam Penggunaan Aplikasi Go-Biz Kota Balikpapan PIECES Framework Analysis of Go-Food Partner Satisfaction in Using Go-Biz Application in Balikpapan" 4 (2020): 19–26.

²¹Indrawati Indrawati et al., "ANALISIS TINGKAT KEPUASAN PENGGUNA SISTEM INFORMASI PERPUSTAKAAN MENGGUNAKAN PIECES FRAMEWORK" 11, no. 10 (2019): 118–28.

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a) Performance

The reliability of a system is the first variable of the PIECES Framework which has an important role to see the extent and how reliable an information system is in processing or processing data to produce information and the expected goals.

There are two components that must be considered as a reference or guideline in evaluating the performance of a system, namely:

- 1 Whether a system can or is able to work on a number of commands within a predetermined period of time properly and without obstacles.
- 2 The extent to which the ability of a system to respond to an order or request for a transaction is fast or slow.

b) Data and Information

Information and data presented or needed by the company is one of the important factors for the progress of a company. The information generated by the information system must really have a value that is useful for decision making by company management.

The components that are considered in evaluating a system related to data and information are:

- 1 Output, the extent to which a system can produce output, especially in presenting the information needed by the company.
- 2 Input, the extent to which the reliability of a system in entering data then the data is processed to become information that is useful for the company.
- 3 Stored Data, the extent of the reliability of a system in storing data into storage media and in accessing the data.

c) Economics

Variable economics becomes a parameter whether the company's sacrifice to apply the library information system currently used is commensurate with the results obtained by the company.

In terms of economics, there are two components that are considered in evaluating a system, namely:

- 1 Cost, is an evaluation of the extent of costs incurred after the company uses or implements the use of information systems.
- 2 Profit, is an evaluation of whether the use of information systems is able to provide benefits to the company so that the company can go in a better direction.

d) Control and Security

As good as a system if it is not accompanied by good control and security, it will become a very weak system so that parties from outside the system are very easy to enter and disrupt the system. Therefore, it is necessary to control and secure an information system by paying attention to matters related to system control and security, namely:

- 1 Control and security of the system is too weak.
- 2 Control and security of the system is too high or complex.

e) Efficiency

Information systems that are used absolutely must have an advantage when compared to the use of manual systems. The advantage lies in the level of efficiency when the information system operates. The references or guidelines used in analyzing and evaluating a system in terms of its efficiency when compared to the use of a manual system, namely:

- 1 Employees, machines or computers in their use waste too much time or waste in the use of company supplies and materials.
- 2 In fulfilling a task or job, is the effort required in carrying out activities too excessive.
- 3 Excessive fulfillment of material needs only to complete a certain task.

f) Service (Pelayanan)

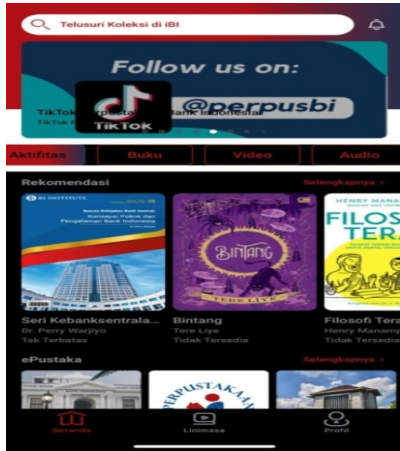
Service to consumers is very important, in this study what is meant as a consumer is a user of a library information system. The progress of the company is also determined by this variable, whether these users are interested and satisfied with the services the company has, thus enabling users not to switch to other business competitors. Therefore, several things are needed that are considered important in maintaining consumers owned by the company, namely:

- 1 The system must be able to produce the information needed by users accurately.
- 2 The results obtained from a system must be consistent.
- 3 The system that is implemented or used must be easy to learn, understand and easy to use by users, so that users will feel comfortable in using the information system.
- 4 The system must be flexible and compatible

3.2 Desain system

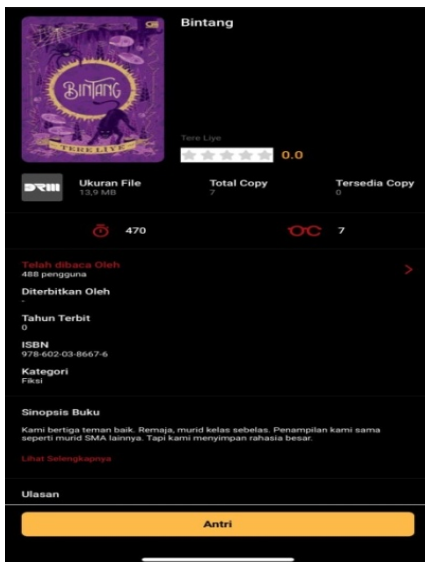
3.2.1 Smartphone

a. Main menu of Bank Indonesia's information system



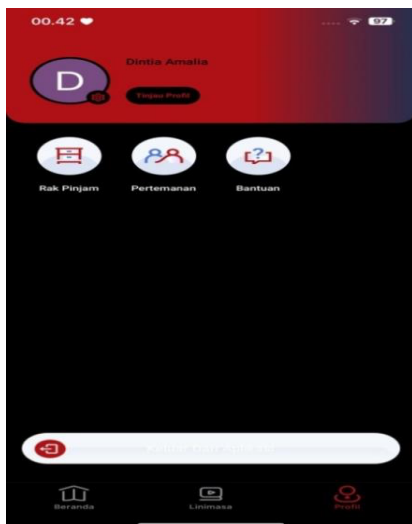
The screenshot above shows the main page of the iBILibrary application system. On the main page there are icons for information search, advertisements, book recommendations, eLibrary, video collection, audio collection and suggested friends.

b. Loan section view



The screenshot above shows the book loan section page of the iBILibrary application. At this length there is a display of book covers, ratings, file sizes, number of copies of books, available copies of books, book descriptions, reviews and there is a clock icon that indicates a queue list and a glasses icon that indicates a list of borrowers.

c. Profile Section View



The screenshot above shows the profile section of the iBILibrary application. There is user information in the form of account/user name, profile photo, borrowed shelf, friendship and help.

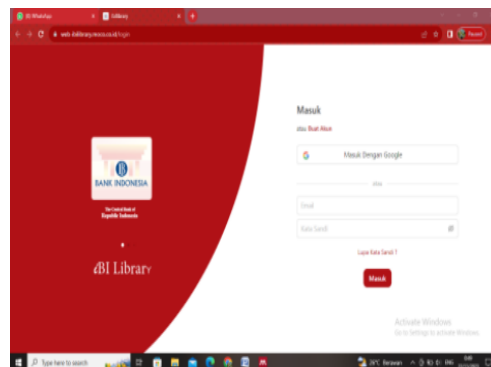
d. Timeline section view



The screenshot above shows the timeline section of the iBLibrary application system. On the Timeline page there is a notification about users who are borrowing books. On the page you can see the account/user name, title and author of the book, there is a like icon and comments.

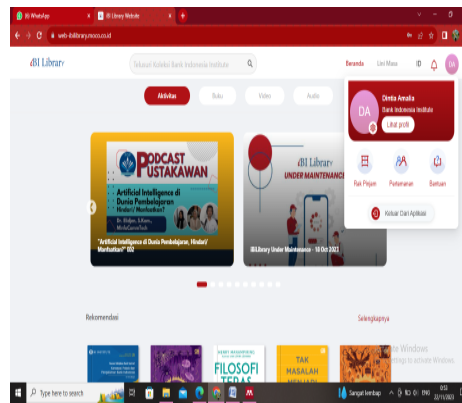
3.2.2 Laptop

- a. Display on the login section The screenshot below shows the display of the login section on the iBLibrary website via a laptop and can only log in using the gmail account.



Menu Login

- b. The main menu of the Bank Indonesia information system on a laptop The screenshot below shows the information system of the iBLibrary website via a laptop. There are activities, book, video and audio collections, homepage, timeline and profile data.



Menu Daskbor

3.3 Calculation results and data analysis

Based on the results of distributing questionnaires to 15 users of the IBI LIBRARY application using a Likert scale to see information on the level of user satisfaction with the library information system by selecting answers and scores, then to get the average level of satisfaction using the formula mentioned above.

A. Performance

Reliability or performance can be one of the assessments measured in a system which is also the first domain of this method, where this domain will assess the extent to which a system can run and the extent of performance obtained when using the system according to the expected objectives. Many questions and questionnaire results can be seen in tables 3 and 4. Indicators of the success of this performance domain are:

NO	PERTANYAAN
1	Aplikasi IBI LIBRARY mudah di akses melalui smartphome
2	Aplikasi IBI LIBRARY memenuhi kebutuhan dalam harapan user (pengguna) dalam menjelajahi dan menggunakan fitur yang tersedia
3	Koleksi aplikasi IBI LIBRARY sudah mencukupi kebutuhan user (pengguna)

RESPONDEN	SS	S	TS	STS
SKOR	4	3	2	1
R1	2	9	3	1
R2	2	8	4	1
R3	2	11	2	0
JUMLAH	6	28	9	3

$$Rk = \frac{(4*6)+(3*28)+(2*9)+(1*3)}{6+28+9+3}$$

$$Rk = \frac{129}{46} = 2,80$$

When viewed based on the results obtained, the average obtained from the Performance domain gets a result of around 2.80 so that it can be concluded that these results if entered in the Kaplan and Norton formula, including the category Quite Satisfied in user satisfaction. So that this can show a positive indication that users are quite satisfied with the data processed up to the information generated by IBI LIBRARY.

B. Information and Data

Information and Data is one of the domains measured in a system which is also the second domain of the PIECES Framework, where the information and data obtained and generated by the system are correct and appropriate results which can be used for decision making by the company.²² Many questions and questionnaire results can be seen in tables 5 and 6. Indicators of the success of this information and data domain are:

NO	PERTANYAAN
1	Aplikasi IBI LIBRARY dapat mengakses informasi serta koleksi-koleksi yang tersedia dengan proses yang cepat
2	Aplikasi IBI LIBRARY menyediakan informasi yang akurat dan terbaru

²² Y. I. Maulana, "Evaluasi Tingkat Kepuasan Pengguna Perpustakaan Digital Nasional (IPusnas) Dengan Kerangka PIECES" 6 (2018): 51–55.

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RESPONDEN	SS	S	TS	STS
SKOR	4	3	2	1
R1	3	8	4	0
R2	2	11	2	0
JUMLAH	5	19	6	0

$$Rk = \frac{(4*5)+(3*19)+(2*6)+(1*0)}{5+19+6+0}$$

$$Rk = \frac{89}{30} = 2,96$$

When viewed based on the results obtained, the average obtained from the Information and data domain gets a result of around 2.96 so that it can be concluded that these results if entered in the Kaplan and Norton formula, including the category Quite Satisfied in user satisfaction. So that this can show a positive indication that users are quite satisfied with the data processed up to the information generated by IBI LIBRARY.

C. Economics

Economics is one of the domains measured in a system which is also the third domain of the PIECES Framework, where economics in this case relates to the costs incurred by the company in order to get results in accordance with the cold business goals achieved..²³ Many questions and the results of the questionnaire can be seen in tables 7 and 8:

NO	PERTANYAAN
1	Aplikasi IBI LIBRARY membantu dalam mengurangi biaya dan menghemat waktu dalam proses temu kembali

²³ Rizkyta Yolanda N. E. Sari, "InfoTekJar : Jurnal Nasional Informatika Dan Teknologi Jaringan Analisis Kepuasan Pengguna Google Classroom Menggunakan PIECES Framework (Studi Kasus : Prodi Sistem Informasi UIN Jakarta)" 2 (2021).

RESPONDEN	SS	S	TS	STS
SKOR	4	3	2	1
R1	3	9	3	0
JUMLAH	3	9	3	0

$$Rk = \frac{(4*3)+(3*9)+(2*3)+(1*0)}{3+9+3+0}$$

$$Rk = \frac{45}{15} = 3$$

When viewed based on the results obtained, the average obtained from the Economics domain gets a result of around 3 so that it can be concluded that these results if included in the Kaplan and Norton formula, are included in the Quite Satisfied category in user satisfaction. So that this can show a positive indication that users are quite satisfied with the data processed up to the information generated by IBI LIBRARY.

D. Control and Security

Control and Security is one of the domains measured in a system which is also the fourth domain of the PIECES Framework, where a system can run well if there is handling and guarding or security applied so that the system can run efficiently according to function and minimize interference or errors from internal and external parties.²⁴ Many questions and questionnaire results can be seen in tables 9 and 10. The success indicators for this control and security domain are:

NO	PERTANYAAN
1	Aplikasi IBI LIBRARY memiliki pengawasan yang efektif untuk mencegah kesalahan atau kegagalan sistem

RESPONDEN	SS	S	TS	STS
SKOR	4	3	2	1
R1	2	8	4	1
JUMLAH	2	8	4	1

²⁴ Sakir et al., "Penerapan Metode Pieces Framework Sebagai Evaluasi Tingkat Kepuasan Pengguna Aplikasi Seabank Di Balikpapan."

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$$Rk = \frac{(4*2)+(3*8)+(2*4)+(1*1)}{2+8+4+1}$$

$$Rk = \frac{41}{15} = 2,73$$

When viewed based on the results obtained, the average obtained from the Economics domain gets a result of around 2.73 so that it can be concluded that these results if included in the Kaplan and Norton formula, are included in the Quite Satisfied category in user satisfaction. So that this can show a positive indication that users are quite satisfied with the data processed up to the information generated by IBI LIBRARY.

E. Efficiency

Efficient is one of the domains measured in a system which is also the fifth domain of the PIECES Framework, where the system that is run can help HR work to get optimal and efficient results compared to using a manual system. Many questions and questionnaire results can be seen in tables 1 and 12. The indicators of the success of this efficiency domain are:

NO	PERTANYAAN
1	Aplikasi IBI LIBRARY memiliki fitur yang membantu meningkatkan efisiensi dalam proses temu kembali

RESPONDEN	SS	S	TS	STS
SKOR	4	3	2	1
R1	2	8	4	1
JUMLAH	2	8	4	1

$$Rk = \frac{(4*2)+(3*8)+(2*4)+(1*1)}{2+8+4+1}$$

$$Rk = \frac{41}{15} = 2,73$$

When viewed based on the results obtained, the average obtained from the Economics domain gets a result of around 2.73 so that it can be concluded that these

results if included in the Kaplan and Norton formula, are included in the Quite Satisfied category in user satisfaction. So that this can show a positive indication that users are quite satisfied with the data processed up to the information generated by IBI LIBRARY.

F. Service

Service is one of the domains measured in a system which is also the sixth domain and is the last domain measured from the PIECES Framework, where the progress of the company is also determined from this domain, whether users feel comfortable and feel satisfied with the services owned by the company / agency.²⁵ Many questions and questionnaire results can be seen in tables 13 and 14. The indicators of the success of this Service domain are:

NO	PERTANYAAN
1	Aplikasi IBI LIBRARY memiliki fitur yang membantu meningkatkan efisiensi dalam proses temu kembali
2	Aplikasi IBI LIBRARY memenuhi kebutuhan dan harapan user (pengguna) dalam menjelajahi dan menggunakan fitur yang tersedia
3	Koleksi aplikasi IBI LIBRARY sudah mencukupi kebutuhan user (pengguna)

RESPONDEN	SS	S	TS	STS
SKOR	4	3	2	1
R1	2	8	4	1
R2	2	8	4	1
R3	2	11	2	0
JUMLAH	6	27	10	2

$$Rk = \frac{(4*6)+(3*27)+(2*10)+(1*2)}{6+27+10+2}$$

²⁵ and A. Dwi N. Kinanti, A. Putri1, "Penerapan PIECES Framework Sebagai Evaluasi Tingkat Kepuasan Mahasiswa Terhadap Penggunaan Sistem Informasi Akademik Terpadu (SIKADU) Pada Universitas Negeri Surabaya" 2 (2021).

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$$Rk = \frac{127}{45} = 2,82$$

When viewed based on the results obtained, the average obtained from the Economics domain gets a result of around 2.82 so that it can be concluded that these results if included in the Kaplan and Norton formulas, including the Quite Satisfied category in user satisfaction. So that this can show a positive indication that users are quite satisfied with the data processed up to the information generated by IBI LIBRARY.

CONCLUSION

Based on the results of the data collection process and data analysis, the average value calculated for each reference is taken from the PIECES framework method. Calculating data in the performance domain gives a score of 2.80. This shows that the assessment gets the predicate SATISFIED. Calculation of data in the information and data domain gets a result of 2.96 which indicates that the assessment has received a SUCCESSFUL predicate. Calculation of data on the economics domain gets a result of 3, meaning that the domain will get the predicate SUCCESSFUL. Calculation of data in the control and security domain gets a score of 2.73 which indicates that the domain has received a SUCCESSFUL predicate. Data calculation in the efficiency domain gives a score of 2.73. This shows that the domain has received a POOR predicate. Calculating data for the service domain produces a result of 2.82, meaning that the domain will get the predicate ENOUGH SATISFIED. Based on the results obtained from each domain, the calculation of user satisfaction of IBI applications on average gets an overall user satisfaction rating of 2.84. This means that the user satisfaction of the IBI LIBRARY application is quite Satisfied.

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