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EVALUATION OF SOFTWARE QUALITY FOR I-OFFICE PLUS APPLICATIONS USING ISO/IEC 25010 AND KANO MODEL

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ABSTRAK
Perubahan pola kerja yang dilakukan perusahaan dengan tidak lagi menerapkan aturan seluruh pegawai bekerja dari kantor meningkatkan kebutuhan akan aplikasi absensi. I-Office Plus hadir untuk memenuhi sistem administrasi kepegawaian. Guna menunjang kualitas pada I-Office Plus, evaluasi perangkat lunak dilakukan dari sisi fungsionalitas. Evaluasi dilakukan berdasarkan model ISO/IEC 20510:2011 merupakan bagian dari System and Software Quality Requirements and Evaluation (SQuaRE). Pemrosesan data menggunakan model Kano untuk menentukan skor yang diharapkan pengguna aplikasi I-Office Plus untuk setiap karakteristik yang dievaluasi, menentukan kepuasan dan ketidakpuasan pengguna, memberikan rekomendasi dari hasil analisis. Dalam penelitian ini diterapkan gabungan antara metode kuantitatif dan kualitatif sekaligus atau pendekatan mixed methods. Penelitian mixed methods ini menggunakan strategi sekuensial eksplanatori/sequential explanatory strategy. Hasil evaluasi diharapkan menunjukkan seberapa baik kualitas aplikasi I-Office Plus milik ICON+ yang diukur dari harapan dan kepuasan pegawai sebagai pengguna aplikasi tersebut. Penelitian ini juga memberi hasil rekomendasi perbaikan aplikasi I-Office Plus berdasarkan tingkat ketidakpua-san pengguna dengan melihat kategori pada Model Kano yang berada pada kategori indifference.

ABSTRACT
Changes in the company's work habits, such as no longer applying the rules to all workers working from the office, raise the requirement for attendance apps. I-Office Plus has arrived to complete the personnel administration system. Software evaluation in terms of functionality is carried out to support the quality of I-Office Plus. The evaluation is based on the ISO/IEC 20510:2011 paradigm, which is part of the System and Software Quality Requirements and Evaluation (SQuaRE). The Kano model is used in data processing to calculate the predicted score for I-Office Plus program users for each crite-rion that has been analyzed, to gauge user contentment and dissatisfaction, and to offer recommendations based on the findings of the analysis. A mixed methods strategy, which applies both quantitative and qualitative methodologies, is used in this research. The sequential explanatory approach is used in this mixed-methods research. The evaluation results are anticipated to demonstrate how well the I-Office Plus application, which is a part of ICON+, meets the needs and receives positive feedback from users who are employees. In addition, this research presents suggestions for improving the I-Office Plus program based on the degree of user dissatisfaction by examining the Kano Model categories that fall under the indifference category.

I. INTRODUCTION

The ambition to offer Information and Communication Technology (ICT) solutions that satisfy the high standards of PLN Stakeholders led to the creation of ICON+ as a P.T. Perusahaan Listrik Negara (PLN) subsidiary of Persero. This holds for the company's commitment to delivering dependable services that satisfy customers and its function as a catalyst for innovation in the nation's telecoms industry. To achieve this goal and widen the range of the business's offerings, ICON+ is continually boosting capacity and developing its network.

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Business, technological, and societal trends have changed in the contemporary era of digital technology development. The corporate world must constantly adopt the newest innovations to satisfy the expectations of its stakeholders due to changes in people's behavior in the age of disruption. To address the needs of users and stakeholders, ICON+ consistently maximizes efforts for current businesses and creates new business portfolios that offer the finest solutions [1].

Applications for attendance are increasingly necessary due to changes in work patterns at the company, which no longer enforces the rules for all workers working from home. ICON+ [2] has adopted a smartphone-based attendance management system to control staff attendance data.

I-Office Plus is an application created by ICON+ that is used to retrieve information on attendance for Value Deployment Program (VDP) events and hours of arrival and departure from work. I-Office Plus is available to complete the system for managing employees. It can be used for attendance, recalculation, leave applications, and attendance. Software is evaluated in terms of functionality to support I-Office Plus's quality so that it may be expected to improve the system in the future and so that, once it is made available to the public, users will be able to appreciate I-Office Plus's decent quality. using the Kano Model to determine the level of user satisfaction of the I-Office Plus application for each evaluated characteristic.

By categorizing software quality, namely quality in use and product quality, the evaluation is conducted using the ISO/IEC 25010:2011 model, which is a component of the System and Software Quality Requirements and Evaluation (SQuaRE) [3]. These qualities of a high-quality product include functional suitability, performance efficiency, compatibility, usability, reliability, security, and portability. Effectiveness, efficiency, enjoyment, freedom from risk, and context coverage make up the qualities of good use [3]. ISO/IEC 25010 is frequently used in software design to develop high-quality software or systems. This technique also enables evaluators to offer suggestions for enhancing the caliber of the tools they employ. Therefore, it is deemed appropriate to evaluate ICON+'s I-Office Plus applications using ISO/IEC 25010.

Using ISO 25010, several investigations have been carried out. Hengki, Seno Hadi Saputro, and Okkita Rizan [4] tested the quality of the Lecture Information System (SIL), which was tested with ISO 25010 with 4 (four) domains. The functional suitability domain value had an actual score of 88.44%, the domain reliability had an actual score of 81.59%, the domain operability had an actual score of 82.54%, and the domain performance efficiency had an actual score of 77.41%. The overall lecture information system (SIL) has an actual 82.29% domain/criteria score, indicating that it is in the good category (range: 68.01% to 84.00%) based on ISO 25010 testing.

Muhamad Harun [5] conducted another study that resulted in an evaluation of the First Aid application using the ISO/IEC 25010:2011 model, which can assist in establishing which elements have the most influence on the creation of Android smartphone-based software based on aspects of functional suitability 76,8%, performance efficiency 73,3%, compatibility 70,95%, usability 74,1%, reliability 77,65%, security 68,7%, maintainability 73,7%, portability 77,7%.

Research by Fadli H. Wattiheluw, Siti Rochimah, and Chastine Fatichah [6] classifies software quality on e-commerce websites based on ISO 25010 utilizing several techniques, including Fuzzy Mamdani and AHP. The proposed evaluation approach has several significant steps used to categorize e-commerce websites' caliber. The Analytic Hierarchy Process approach determines the importance of functional appropriateness, performance efficiency, usability, and reliability when ranking characteristics and sub-characteristics based on ISO 25010. The functional appropriateness, performance efficiency, usability, and dependability weight qualities are employed in the Fuzzy Mamdani technique to rank the quality of e-commerce websites. The accuracy value obtained from the case study categorization results is 0.684.

In the research of Meng Zhao, Chenxi Zhang, Yiqi Hu, Zeshui Xu, and Hao Liu [7], the aim of the research is to model consumer satisfaction based on online review features in terms of risk attitude and aspiration using the Kano method, it was found that based on risk attitude and aspiration with different attributes, measurable customer satisfaction, and these results can be used as suggestions for improvements that are more objective and accurate to improve hotel service effectiveness.

Another study, S. Akmal, N. Hashim, Ruzy Haryati Hambali, and Haery ip Sihombing [8], aims to analyze product requirement attributes that have a high potential to increase customer satisfaction using the Kano model. The results of the study found that based on the analysis, the three highest ranks must-be requirements and one dimensional requirements will be listed as priority elements to be improved in product development. As a result, the priority elements in the must-be requirements are three elements. Meanwhile, the one-dimensional requirements are two elements.

Research conducted by Putra and Priyanto [9], aims to explore end user preferences regarding android application service features by classifying them using the Kano Model. The results show that there are seventeen features belonging to the attractive requirement category, six features belonging to the one dimensional category, one

feature belonging to the must-be category, and five features belonging to the indifference category. Overall, many features have the potential to increase end user satisfaction.

The previous research only used some of the characteristics of ISO 25010 or only one of the ISO 25010 models, while the current research uses thirteen characteristics included in the product quality model and the quality in use model of ISO 25010 and also analyzes the level of user satisfaction using the Kano Model to provide recommendations seen from the level of user satisfaction with the I-Office Plus application.

II. RESEARCH METHODOLOGY

The mixed method approach is employed in this study. This mixed method study employs a sequential explanatory strategy based on an adaption of Creswell 2009 [10]. The following describes the methodology used to conduct this study, which is depicted in Figure 1 below:

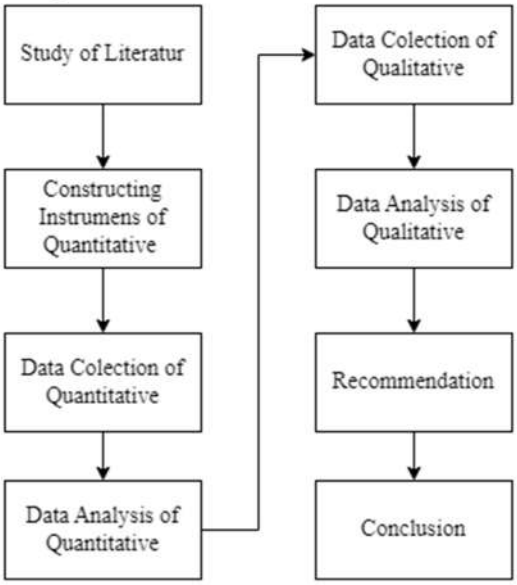

Figure 1. Research Framework

A. Study of Literature

Perform a literature review on the theory and the topic of the study. This is the first stage before performing research as a foundation for choosing research topics and gathering research theories. The chosen research topic involves determining the degree of user satisfaction by evaluating the software system's quality using the ISO/IEC 25010 criterion model and the Kano Model.

B. Constructing Instruments of Quantitative

The eight features that make up the ISO/IEC 25010 standard software product quality dimensions, which are utilized as the basis for the research method used in the form of a questionnaire, are functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, Additionally, five characteristics make up the dimension of quality in use: effectiveness, efficiency, satisfaction, freedom from risk, and context coverage. Each characteristic has a sub-characteristic, for a total of 31 sub-characteristics.

C. Data Collection of Quantitative

The distribution of statement forms connected to the Kano model's implementation of the characteristics and sub-characteristics of ISO/IEC 25010 is known as a questionnaire session. Respondents, who made up the research sample of ICON+ employees, were asked this question. Adaptable statements that can be categorized as either functional (positive) or dysfunctional (negative) depending on the study criteria. Table I below illustrates the questionnaire's four Likert Scale response options, which run from 1 to 4 [11].

Table I
Likert Scale Statement

Statement	Positive	Negative
Strongly Agree	4	1
Agree	3	2
Disagree	2	3

Strongly Disagree	1	4

D. Data Analysis of Quantitative

Based on the user's perception of the qualities of the ISO 25010 that are being evaluated, quantitative data is utilized to obtain evaluation findings for the I-Office Plus application in the form of quality ratings and user satisfaction levels. The research by Setiawan [12] to determine the viability of the I-Office Plus application based on ISO 25010 is known as descriptive data processing. After obtaining the replies, analyze them to establish the evaluation standards for each questionnaire statement based on percentages. The structure of the evaluation criterion is as follows; The total score is the sum of the scores for each of the 75 survey participants who participated in the sample [13]. The highest possible measuring scale is 4 (four), and the lowest possible scale is 1. (one). The percentage is calculated by dividing the item's cumulative value by its frequency value, then multiplying the result by 100%. The greatest cumulative value is (75 x 4) = 300, while the smallest cumulative value is (75 x 1) = 75. The highest proportion in this survey is ((300/300) x 100%) = 100% is the minimum percentage ((75/300) x 100%) = 25%, then use the formula to determine the value of the range ((maximum percentage – minimum percentage)/several measurement scales), e.g. ((100%-25%)/4) = 18.75%. These calculations produce % numbers and range values that can categorize percentage categories. In table II below, more information is provided.

Table II
Percentage of Eligibility Classification

Percentage	Eligibility Classification
81,25% - 100%	Very Worthy
62,5% - 81,25%	worthy
43,75% - 62,5%	Not feasible
25% - 43,75%	Very Unworthy

The Kano model is used in Rochmani's research [14] to calculate the user satisfaction rating for each analyzed characteristic of the I-Office Plus program. The Kano model evaluation table's calculation from functional and dysfunctional statements is processed to provide the weight of the respondent's answer score. Following analysis of the respondents' responses into one of the Kano model's categories, one dimension(o), attractive(a), must be (m), indifference(i), reverse(r), and questionable(q) [15]. By combining functional and dysfunctional questions, the type of requirements for a product can be classified as shown in table III.

Table III
Kano Evaluation Table [16]

Customer Requirement		Dysfunctional Question			
		4. Strongly Agree	3. Agree	2. Disagree	1. Strongly Disagree
Functional Question	4. Strongly Agree	Q	A	A	O
	3. Agree	R	I	I	M
	2. Disagree	R	I	I	M
	1. Strongly Disagree	R	R	R	Q

Following analysis of the respondents' responses into one of the Kano model's categories, the analysis was carried out on the quality attributes in the survey using Blauth's formula, namely if the total (one dimensional + attractive + must be)> total (indifference + reverse + questionable). The attributes will be categorized into one of the maximum numbers of categories, namely one dimensional, attractive, or must be; if the total (one dimensional + attractive + must be) <total (indifference + reverse + questionable), then the attribute will be classified into one of the three categories with the possible options: indifference, reverse, or questionable.

The Kano model's weights and categories are examined, and the next step is to determine user pleasure by computing user satisfaction [17]. Equation (1) may be used to compute the value of user satisfaction, while problem (2) can be used to calculate the value of user displeasure.

$$\text{User satisfaction level} = \frac{A+O}{A+O+M+I} \quad (1)$$

$$\text{User dissatisfaction level} = -\frac{O+M}{A+O+M+I} \quad (2)$$

E. Data Collection of Qualitative

The authors then conducted in-depth interviews to gather information about the current state of the I-Office Plus application to improve the quantitative data that had been gathered after analyzing the quantitative data from the

previous procedure. The purpose of this interview was to learn more about the current state of the I-Office Plus application so that it could make recommendations in light of the author's evaluation and analysis findings. The interview process took place at ICON+ Service Monitoring & QA Division.

F. Data Analysis of Qualitative

Dealing with research data was the first challenge the author faced after gathering data through interviews. Time triangulation is used to process the generated data. Interviews are conducted in the morning while the informant's condition is still fresh and will produce more reliable data. Time triangulation is data gathered via two-way communication techniques or interviews. This is carried out to check the legitimacy and accuracy of data that have been received or information gleaned from interviews. Qualitative data analysis aims to interpret concepts from all available data, transform or translate raw data into explanations, and explain the phenomenon being studied.

G. Recommendation

Conclusions can be taken from the two processes once the quantitative and qualitative analysis findings have been obtained. Recommendations can be made after evaluating the I-Office Plus application's quality level in light of ISO 25010 characteristics and the degree of user satisfaction in the Kano Model. This suggestion intends to raise the standard of PT ICON+ I-Office Plus application system to preserve and enhance it.

III. RESULT AND DISCUSSION

A. Descriptive Analysis of ISO 25010

Research samples were taken from several P.T. employees from the questionnaire data collected from users of the I-Office Plus application. ICON+ up to 75 responders, the percentage is then determined based on formula (3) [18].

$$\text{Eligibility Percentage} = \frac{Score\ obtained}{Ideal\ score} \times 100\% \quad (3)$$

The score obtained = the overall score obtained, expected score = Number of respondents x Maximum score per question

Table IV below shows the results of the feasibility assessment of the I-Office Plus application based on the ISO 25010 features in the following percentage.

Table IV
Application Eligibility Results for I-Office Plus

No	Characteristics	Percentage (%)
1	Reliability	91%
2	Usability	92%
3	Functional Suitability	91%
4	Performance Efficiency	91%
5	Security	89%
6	Compatibility	93%
7	Maintainability	88%
8	Portability	89%
9	Quality In-Use Model	90%
Average achievement percentage		**90%**
Eligibility Classification		**Very Worthy**

According to table IV, which is used to evaluate the quality of I-Office Plus, the compatibility features account for 93% of each ISO 25010 characteristic; usability attributes come in second with a feasibility score of 92%, followed by reliability, functional compatibility, and performance efficiency, each with a score of 91%. The feasibility score for the quality in-use model features is 90%, while the scores for portability and security are 89%, and the maintainability characteristic receives the lowest score of 88%. When compared with Table II. Percentage of Eligibility Classification on page 4, the average eligibility score for the I-Office Plus application is 90%, from this percentage the is included in the "**very worthy**" classification.

B. Kano Model Weights and categories

Professor Noriaki Kano invented the Kano model, a method for gauging consumer satisfaction with a product, in 1984 [19]. This framework can also be used to evaluate product/system quality models by looking at user satisfaction with regard to specific quality attributes and development capability [20].

The processing of the Kano model evaluation table from functional and dysfunctional statements yields the weight of the respondent's answer score. The Kano model category is derived from these results for each item and consists of One Dimension (O), Attractive (A), Must Be (M), Indifference (I), Reverse (R), and Questionable (Q). According to the qualities of ISO 25010, shown in table V, the following is the overall weighting of the canoe model from all respondents' responses.

Table V
Kano Model Weighting In I-office Plus Application

Characteristics	Sub-Characteristics	A	M	O	R	Q	I	Category
Portability	*Availability*	25	4	**36**	0	2	8	*One dimensional*
	Maturity	23	18	**26**	1	1	6	*One dimensional*
	Recoverability	14	19	**27**	1	2	12	*One dimensional*
	Fault tolerance	13	21	**22**	2	2	15	*One dimensional*
Usability	*Appropriateness Recognizability*	15	10	**40**	0	2	8	*One dimensional*
	Learnability	17	13	**32**	0	2	11	*One dimensional*
	User interface aesthetics	22	12	**31**	0	3	7	*One dimensional*
	User error protection	16	17	**24**	0	2	16	*One dimensional*
	Accessibility	17	11	**29**	0	3	15	*One dimensional*
Functional Suitability	*Functional appropriateness*	18	12	**32**	1	0	12	*One dimensional*
	Functional correctness	18	12	**26**	1	1	17	*One dimensional*
	Functional Completeness	18	16	**24**	1	1	15	*One dimensional*
Performance Efficiency	*Time behavior*	24	11	**33**	0	2	5	*One dimensional*
	Resource Utilization	12	15	**37**	1	2	8	*One dimensional*
	Capacity	8	14	**29**	1	2	21	*One dimensional*
Security	*Confidentiality*	23	10	**30**	0	1	11	*One dimensional*
	Integrity	17	11	**33**	1	2	11	*One dimensional*
	Non-repudiation	16	20	**23**	0	1	15	*One dimensional*
	Authenticity	13	15	**28**	0	1	18	*One dimensional*
	Accountability	17	16	16	1	1	**24**	*Indifference*
Compatibility	*Coexistence*	16	14	**39**	0	1	5	*One dimensional*
	Interoperability	16	6	**38**	0	2	13	*One dimensional*
Maintainability	*Modularity and Reusability*	23	10	**22**	1	2	17	*One dimensional*
	Analyzability	15	17	**31**	1	2	9	*One dimensional*
	Modifiability	9	17	22	1	1	**25**	*Indifference*
	Testability	9	15	**29**	0	2	20	*One dimensional*
Portability	*Adaptability*	**24**	9	23	0	2	17	*Attractive*
	Installability and replaceability	14	13	**29**	0	3	16	*One dimensional*
Quality In Use	*Effectiveness*	18	6	**42**	0	1	8	*One dimensional*
	Efficiency	16	10	**35**	1	1	12	*One dimensional*
	Usefulness	13	11	**31**	1	1	18	*One dimensional*
	Trust	15	20	**25**	0	1	14	*One dimensional*
	Pleasure	12	15	**26**	0	1	21	*One dimensional*
	Comfort	9	14	**29**	0	1	22	*One dimensional*
	Economic risk mitigation	13	11	**33**	0	1	17	*One dimensional*
	Health and Safety	11	15	**30**	0	1	18	*One dimensional*
	Environmental	11	16	**27**	0	1	20	*One dimensional*
	Context completeness	17	13	**30**	0	1	14	*One dimensional*

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Two ISO 25010 features in the I-Office Plus program fall under the indifference group, according to the Kano Model classification results linked in table V; the I-Office Plus application has one trait that falls under the attractive category, 38 traits that fall under the one-dimensional category, and one trait that falls under the appealing category.

C. User Satisfaction Level

The Kano model's weights and categories are examined, and the next step is to determine user pleasure by computing user satisfaction. Factors are included in the data used to calculate the user satisfaction coefficient. Table VI below shows the user satisfaction and user dissatisfaction coefficients [21] [22].

Table VI
I-office Plus Application User Satisfaction and Dissatisfaction Coefficient

Characteristics	Sub-Characteristics	Category	Satisfaction	Dissatisfaction
Portability	*Availability*	*One dimensional*	0.836	-0.548
	Maturity	*One dimensional*	0.671	-0.603
	Recoverability	*One dimensional*	0.569	-0.639
	Fault tolerance	*One dimensional*	0.493	-0.606
Usability	*Appropriateness Recognizability*	*One dimensional*	0.753	-0.685
	Learnability	*One dimensional*	0.671	-0.616
	User interface aesthetics	*One dimensional*	0.736	-0.597
	User error protection	*One dimensional*	0.548	-0.562
	Accessibility	*One dimensional*	0.639	-0.556
Functional Suitability	*Functional appropriateness*	*One dimensional*	0.676	-0.595
	Functional correctness	*One dimensional*	0.603	-0.521
	Functional Completeness	*One dimensional*	0.575	-0.548
Performance Efficiency	*Time behavior*	*One dimensional*	0.781	-0.603
	Resource Utilization	*One dimensional*	0.681	-0.722
	Capacity	*One dimensional*	0.514	-0.597
Security	*Confidentiality*	*One dimensional*	0.716	-0.541
	Integrity	*One dimensional*	0.694	-0.611
	Non-repudiation	*One dimensional*	0.527	-0.581
	Authenticity	*One dimensional*	0.554	-0.581
	Accountability	*Indifference*	**0.452**	**-0.538**
Compatibility	*Coexistence*	*One dimensional*	0.743	-0.716
	Interoperability	*One dimensional*	0.740	-0.603
Maintainability	*Modularity and Reusability*	*One dimensional*	0.625	-0.444
	Analyzability	*One dimensional*	0.639	-0.667
	Modifiability	*Indifference*	**0.425**	**-0.534**
	Testability	*One dimensional*	0.521	-0.603
Portability	*Adaptability*	*Attractive*	0.644	-0.438
	Installability and replaceability	*One dimensional*	0.597	-0.583
Quality In Use	*Effectiveness*	*One dimensional*	0.811	-0.699
	Efficiency	*One dimensional*	0.699	-0.603
	Usefulness	*One dimensional*	0.603	-0.541
	Trust	*One dimensional*	0.541	-0.514
	Pleasure	*One dimensional*	0.514	-0.514
	Comfort	*One dimensional*	0.514	-0.622
	Economic risk mitigation	*One dimensional*	0.622	-0.554
	Health and Safety	*One dimensional*	0.554	-0.514
	Environmental	*One dimensional*	0.514	-0.635
	Context completeness	*One dimensional*	0.635	-0.635

The user satisfaction coefficient shows if user satisfaction can be increased by addressing user annoyance by enhancing the I-Office Plus application's functionality. The User Pleasure Factor illustrates the relationship between program functionality and user satisfaction or discontent. The correlation between user pleasure and discontent with the I-Office Plus program. User satisfaction has a value between 0 and 1, with values closer to 1 having a more significant impact. All portable features fall under the one-dimensional classification according to the user satisfaction coefficient values in table VI.

All portable features fall into the one-dimensional category according to the results of the user satisfaction coefficient in table VI, which shows the results. User satisfaction is more highly valued than user discontent for the sub-characteristics of availability and maturity. The value of user dissatisfaction is, therefore, more significant than the value of user satisfaction for the sub-characteristics of recoverability and fault tolerance.

Usability traits fall within the one-dimensional group as well. User error protection's sub-characteristic has a more significant value for dissatisfied users than satisfied users. User satisfaction is higher for the sub-characteristics of appropriateness, recognizability, learnability, user interface aesthetics, and accessibility than for user discontent. Functional suitability's sub-characteristics are all classified as one-dimensional. User satisfaction is higher for the sub-characteristics of functional appropriateness, functional correctness, and functional completeness than user displeasure.

Then, all of the performance efficiency sub-characteristics fall within the one-dimensional category. The user satisfaction value for the time behavior sub-characteristic is higher than the user discontent value. The value of discontent for the sub-characteristics of resource utilization and capacity is higher than the value for user satisfaction. Then, accountability falls under the indifferent group, while the security traits of secrecy, integrity, non-repudiation, and authentication are placed in the one-dimensional category. In contrast to non-repudiation and authenticity, which have greater user discontent values than user satisfaction scores, secrecy, integrity, and accountability sub-characteristics have higher user satisfaction values.

Characteristics of compatibility are within the one-dimensional category. The value of user satisfaction is higher for the sub-characteristics of coexistence and interoperability than the value of user dissatisfaction. Modularity and reuse make up the maintainability characteristics, whereas testability and analyzability go into the one-dimensional category and the sub-characteristics of modifiability into the indifferent category. User satisfaction is better for the sub-characteristics of modularity and reusability than for user displeasure. User discontent scores for the sub-characteristics of analyzability, testability, and modifiability are greater than user satisfaction values.

Regarding the portability characteristic, the Adaptability sub-characteristic falls under the attractive category, whereas the Installability and Replaceability sub-characteristics fall under the one-dimensional category. However, the user satisfaction value of the two sub-characteristics is higher than the user dissatisfaction value. Additionally, the quality qualities currently in use fall under the one-dimensional group. The customer discontent value for the comfort and environment sub-characteristics is higher than the user satisfaction value. The user satisfaction and user dissatisfaction values of the sub-characteristics of pleasure and context completeness are equal. User satisfaction values are more significant for the sub-characteristics of effectiveness, efficiency, usefulness, trust, economic risk reduction, and health and safety than user dissatisfaction scores.

When the sub-characteristics have a higher user pleasure value than a user dissatisfaction value, according to the results that have been acquired, in that case, the I-Office Plus program should uphold a higher value of user pleasure and lower the value of user dissatisfaction by exhibiting these qualities or sub-characteristics., in order to increase customer satisfaction, emphasizing the development and improvement of the characteristics and sub-characteristics. Moreover, the I-Office Plus program is anticipated to study the root causes of user dissatisfaction, improve features/sub-characteristics when a sub-characteristic has a more significant user dissatisfaction value than the user contentment value, and raise these features/sub-qualities to lower the value of consumer dissatisfaction. Starting with the features and sub-characteristics that fall under the difference category, the order that needs to be fixed initially must be one-dimensional.

Based on the characteristics of ISO 25010 and the findings of the analysis using the Kano Model, it is possible to calculate the feasibility value of I-Office Plus based on the results of the descriptive analysis of ISO 25010 and the level of user satisfaction. The Kano Model analysis reveals that from the two characteristics above, there is a higher level of user dissatisfaction than the level of user satisfaction, according to the descriptive analysis of ISO 25010. The two characteristics with the lowest values are the security characteristics, which have a value of 89%, and the maintainability characteristics, which have a value of 88%. the Kano Model, which falls under the indifference group, is included., In order to learn more about the current state of the I-Office Plus application and about two security characteristics and maintainability characteristics, an interview will be conducted.

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D. *Thematic Analysis*

Qualitative data analysis aims to interpret concepts from all available data, transform or translate raw data into explanations, and explain the phenomena being examined.

The next phase for academics is to develop theoretical thoughts or theories regarding the code and themes based on the coding outcomes. Table VII below shows the findings from interviews researchers performed with research informants evaluating security features in the I-Office Plus application.

Table VII
Aspect Findings *Security*

Code	Themes	Present condition	Problem
Confidentiality	Information access	The user must log in before they may access the I-Office Plus program. If the user wants to access it, I-Office Plus will grant it.	The lack of two-factor authentication leaves systems open to security risks. Information from I-Office Plus applications is accessible by unauthorized persons.
Integrity	Authenticity	Ask for accurate user information, such as an email address and phone number, to ensure that the person trying to access the I-Office Plus program is one of the users who has previously registered.	Threat from unknown parties who have the power to alter information.
Accountability	Activity irregularities	I-Office Plus keeps a log of all user activities; if there is an unusual transaction or activity, I-Office Plus can follow the user's most recent log.	The I-Office Plus system can only view the most recent log of user activity records in case of an unusual transaction or behavior.

The results of the research team's interviews with research informants about the I-Office Plus application's maintainability are shown in table VIII below.

Table VIII
Aspect Findings *Maintainability*

Code	Theme	Present condition	Problem
Problem analysis	Time spent on troubleshooting and error checking	I-Office Plus offers an SLA function for error checking that can check/diagnose reported issues and can be completed in about an hour.	Inadequate diagnostic capability and ineffective check-time management.
Application modification	Added functions/features	If I-Office Plus receives upgrades or new features, *Regression* will be applied to all functionalities to reduce issues or degrade the application's quality.	There are issues with the completeness of the data in the prod if there are additions or changes to I-Office Plus features and design. When a user requests changes to make something less consistent, the changes are made. Repeated tests are made more difficult by the I-Office Plus application testing's insufficient documentation. If the user makes a request, changes are done to reduce the level of inconsistency.
Application testing	Repeated testing	I-office Plus is continually tested to see if any modifications are made, whether it be to the application's features or its look.	When running additional tests, the I-Office Plus application testing's inadequate documentation presents a challenge.

E. *Recommendation*

A proposal or recommendation for improvements to the I-Office Plus application for security and maintainability aspects will be provided in this sub-chapter after conducting an overall analysis and obtaining findings regarding the prior security and maintainability aspects. These recommendations aim to enhance user satisfaction based on these characteristics. Table IX in the following section contains recommendations for security and maintainability traits.

Table IX
Recommended characteristics *security* and *maintainability*

Characteristics	Sub-characteristics	Problem	Recommendation
Security	*Confidentiality*	Due to a lack of two-factor authentication, the I-Office Plus system is open to threats to information systems and is also susceptible to unlawful access.	Implementing two-factor authentication, strong passwords, and data encryption will help I-Office Plus's already robust security system protect confidential data and prevent unauthorized parties from accessing it.
	Integrity	Threats from unauthorized parties who can alter the I-Office Plus system could put you at risk.	Implementing preventive measures is essential to ensure that data integrity, validity, and completeness are upheld and safeguarded on the I-Office Plus system, including strong authentication, encryption, and access control.
	Accountability	The I-Office Plus system can only view the most recent log of the user's activity log if there is an unusual transaction or activity.	Recording user activity data on the I-Office Plus system, everything related to system information security must be created, stored, and managed as well as possible to prevent

			unwanted cases. There needs to be policies and procedures that deal with related matters.
	Analyzability	inadequate diagnostic capability and ineffective check-time management.	In order to improve the efficiency of checking and problem-solving, the I-Office Plus system should include or expand the availability of diagnostic features that can determine which components of the system are malfunctioning.
Maintainability	*Modifiability*	There are issues with the completeness of the data in the prod if there are additions or changes to I-Office Plus features and design. The changes are made when a user requests changes to make something less consistent.	Pay close attention to the consistency aspect when modifying/adding features or changing the appearance of I-Office Plus. Database management on the I-Office Plus system needs to be given greater attention so that when there is a modification to the application, data is available on the site., Several improvements to the system that is having issues only allow the process of modification and customization to take place significantly.
	Testability	The I-Office Plus application's insufficient documentation makes repeated tests more difficult.	It is essential to handle testing documentation on the I-Office Plus application system effectively and test the database so that the data is accessible during tests. Test the primary function as it currently exists regularly to see if any new features or interface adjustments can be made to maintain or raise user satisfaction.

IV. CONCLUSION

Based on the result of the research that was conducted to assess the software in line with the requirements of ISO 25010, Utilizing the Kano Model to measure user satisfaction with the I-Office Plus program and to identify the elements that might be enhanced, Then, based on the results of the descriptive analysis of the feasibility assessment of I-Office Plus based on ISO 25010 from the user's point of view of the quality of use (quality in use) and product quality, it is possible to make several conclusions (product quality), this research reveals that PT ICON+'s I-Office Plus application system has an average eligibility classification predicate of 90%, or "Very Worthy" and the percentage per characteristic, precisely compatibility criteria, has the most significant percentage with a value of 93%, then reliability, functional appropriateness, and performance efficiency each have a percentage value of 91%. At the same time, usability attributes have a percentage value of 92%; the criteria with the highest percentage values include quality in use with a percentage value of 90%, portability and security with a percentage value of 89%, and maintainability with a percentage value of 88%.

Based on the findings of the analysis of the user satisfaction coefficient on the I-Office Plus application, two sub-characteristics come into the indifference category; there is one sub-characteristic that falls under the attractive category, namely the adaptability sub-characteristic of the portability characteristic which has a higher dissatisfaction value than the user satisfaction value. Accountability on the security characteristics also has a higher dissatisfaction value than the user satisfaction value, as does modifiability on the maintainability characteristic. The qualities that fall into the "indifference" category are characteristics that the I-Office Plus application needs to improve, according to the analysis of the calculation of the user satisfaction coefficient for the I-Office Plus application. Three components of the findings confidentiality, integrity, and accountability are obtained based on the findings of the thematic analysis for security characteristics. Three components of the findings analysis of application issues, application adjustments, and application testing are related to the qualities of maintainability.

Recommendations are concentrated on two criteria, namely security and maintainability. The recommendations for the security characteristics focus on the three sub-characteristics of confidentiality, integrity, and accountability. In comparison, the suggestions for the maintainability characteristics focus on the three sub-characteristics of analyzability, modifiability, and testability.

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