Implementing the PIECES Method in Assessing Debtor Satisfaction with SLIK at the Financial Services Authority (OJK) Office

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Abstract

This study discusses the application of the PIECES method at the OJK Office of West Java Province for debtors named the Financial Information Service System (SLIK). The purpose of this research is to measure the extent of user satisfaction with SLIK and to apply the PIECES method in the satisfaction survey. The author uses a quantitative method by distributing questionnaires using a Likert scale with 24 questions and conducting documentation studies for data collection. The results of this study show validity with a range of values from 0.749 to 0.933, reliability with values from 0.828 to 0.914, and in the PIECES model, the Customer Satisfaction survey was conducted with 110 respondents, indicating a positive and significant impact regarding the application of the PIECES method in the debtor satisfaction survey, with a strong correlation of 93%. The average satisfaction score for SLIK using the PIECES method is 4.19 (satisfied). The findings suggest that this method is suitable for use as a tool for satisfaction surveys on a service system and yields positive results. The researcher recommends ongoing evaluation of SLIK in the form of satisfaction surveys with various methods and direct suggestion boxes as input from users for better system development.

Article Info

1. Introduction

In the evolving landscape of financial services, the assessment and management of debtor satisfaction have become increasingly significant. The Financial Services Authority (OJK) in Indonesia plays a crucial role in overseeing and regulating financial institutions, ensuring they operate in a manner that safeguards the interests of the public. Among its many functions, the OJK utilizes the Financial Information Service System (SLIK) to collect, process, and disseminate financial information, which includes debtor credit information. SLIK serves as a critical tool for maintaining transparency and accountability in financial transactions, offering a centralized platform where credit information is accessible to both financial institutions and debtors. This accessibility is essential for informed decision-making, risk assessment, and fostering trust between debtors and financial institutions. However, the effectiveness of SLIK depends significantly on the satisfaction of its users-primarily the debtors. If debtors find the system user-friendly, accurate, and secure, their confidence in the financial system is likely to increase, promoting better compliance and engagement. Therefore, continuous evaluation and improvement of SLIK are crucial to ensuring it meets the evolving needs and expectations of its users.

Currently, with the shift of supervision over financial institutions from BI to OJK, the framework has changed to SLIK (Financial Services Information System) as of January 1, 2018, which has similar capabilities to I-Debt (Debtor Information). SLIK is one of the OJK's administrative services related to debtor data. The Financial Information Service System (SLIK)

operated by the Financial Services Authority (OJK) in Indonesia is an essential tool for managing debtor information. Research on SLIK has highlighted its role in enhancing transparency and accountability in financial transactions (OJK, 2020). However, there is limited research specifically addressing debtor satisfaction with SLIK. This gap underscores the need for comprehensive assessments using frameworks like PIECES to identify strengths and areas for improvement in SLIK's implementation and operation.

Table 1. OJK Office at West Java Province in Debtor SLIK Reporting/Complaints 2021-2023

Years	Total Number of Complaints	Media Reports				
			Type of Problem	Letter	Website	Other
2021	84	a.	Financial Information Services System Reporting	14	8	1
		b.	Payment System Licensing	0	0	0
		c.	Payment System Products/Services	1	1	0
		d.	Financial Information Services System	14	45	0
2022	215	a.	Financial Information Services System Reporting	7	1	0
		b.	Payment System Licensing	0	2	0
		c.	Payment System Products/Services	0	0	0
		d.	Financial Information Services System	42	163	0
2023	417	a.	Financial Information Services System Reporting	6	0	0
		b.	Payment System Licensing	0	1	0
		c.	Payment System Products/Services	0	0	0
		d.	Financial Information Services System	78	332	0
Total	**716 Reporting by SLIK Debtors**					

Source: Data Processed (2024)

From Table 1 with a total of 716 debtors or users recorded, there has been a noticeable gap in the number of complaints from 2021 to 2023, predominantly related to issues with the OJK Financial Services Information System, whether through the website or letters at the OJK Office in West Java Province. However, there are indeed obstacles in accessing the SLIK service, whether online or offline, as reported by debtors/customers at the Financial Services Authority Office for West Java Province. Several issues overall are linked to the central system, such as performance access system constraints (Performance Variable), challenges with changes in information communicated to debtors (Information Variable), access constraints requiring good signal and quota (Economic Variable), suboptimal application security (Control Variable), SLIK's occasional inefficiency due to maintenance disruptions (Efficiency Variable), and service constraints due to full capacity during system access hours (Service Variable).

Debtor satisfaction with SLIK is paramount, as it directly influences their trust and engagement with financial institutions. To thoroughly assess this satisfaction, a comprehensive and systematic approach is essential. The PIECES framework, which stands for Performance, Information, Economics, Control, Efficiency, and Service, provides a robust methodology for evaluating various aspects of information systems and their impact on users. The PIECES framework provides a holistic approach to evaluating information systems. Performance focuses on the throughput and response time of the system. Information evaluates the accuracy, relevance, and timeliness of the information provided. Economics assesses the cost-effectiveness of the system. Control examines the security and integrity of the system. Efficiency looks at the resource utilization of the system. Finally, the Service evaluates the reliability and support provided to users. Some previous studies suggest that the PIECES method involves identifying factors that influence satisfaction, using the semantic differential scale technique, and creating a questionnaire to measure satisfaction, as well as classifying factors, measuring the importance and degree of satisfaction, and using the AHP technique to calculate total satisfaction (Aditya & Jaya, 2022; Andikaputra et al., 2022; Ayu, 2023; Fatoni et al., 2020). This reflects the importance of model pieces in measuring the success of information systems in an organization.

Considering that users are the primary asset for service providers, their satisfaction significantly impacts the reputation and success of organizations(Alalwan et al., 2018; Fathurohman & Legowo, 2023; Mugiarto et al., 2023). With technological advancements, the way customers interact with service providers has changed, necessitating continuous evaluation and improvement of information systems. User satisfaction with information systems averages highlights the importance of system quality (Kawidjaya et al., 2023; Syawali et al., 2023). However, improvements in system quality, accuracy, cost estimation, security, efficiency, and service are necessary for further development. Combining user evaluations from rating scales and written feedback using sentiment analysis can effectively measure user satisfaction.

Several studies have demonstrated the application of the PIECES framework in the evaluation of financial information systems. For instance, research by Delone and Mclean (2004) on the Information Systems Success Model aligns with the principles of PIECES by emphasizing system quality, information quality, and service quality as key determinants of user satisfaction and system success. This model has been validated in various contexts, including financial institutions, indicating its robustness and relevance. Debtor satisfaction is a critical aspect of financial services, influencing trust and engagement with financial institutions. Studies have shown that the quality of financial information systems, including aspects like usability, reliability, and security, significantly impacts user satisfaction (DeLone & McLean, 2003; Jeyaraj, 2020). Moreover, the effective management and dissemination of financial information are crucial for maintaining debtor trust and compliance with regulatory requirements (OJK, 2020).

Based on the data obtained and processed directly through interviews with employees, comments, and complaints from debtors on social media, as well as reports regarding SLIK services at the OJK Office in West Java Province, along with the phenomenon of identified issues that have occurred, it can be concluded that there is a need for a satisfaction survey conducted by OJK, particularly at the OJK Office in West Java Province. This survey aims to gather evaluations, suggestions, and feedback on the challenges that have arisen from 2021 to 2023 regarding SLIK. Thus, our study is similar to previous studies that recommended to use of the PIECES method to measure user satisfaction of service systems (Fatoni et al., 2020; Puspitasari et al., 2019; Yoliadi, 2023). This method optimizes and enhances services through six variables, serving as an implementation and evaluation framework for satisfaction surveys. PIECES analysis method can aid in system needs analysis and identification (Aditya & Jaya, 2022; Yoliadi, 2023). Previous research also emphasizes the importance of user satisfaction with the application system used to support activities related to certain service providers (Aryaman et al., 2024; Hanif et al., 2024).

This research aims to implement the PIECES method to assess debtor satisfaction with SLIK at the OJK office in West Java Province. It seeks to identify strengths and areas for improvement in the system, providing valuable insights for enhancing service quality and overall user satisfaction. This study's application of the PIECES framework to assess debtor satisfaction with SLIK at the OJK office in West Java Province is both timely and relevant. It contributes to the existing literature by providing empirical insights into the effectiveness of SLIK from the perspective of debtors. Furthermore, it offers practical implications for improving the system to better meet user needs and expectations. This study not only contributes to the academic understanding of information systems in financial services but also offers practical implications for policy-makers and practitioners within the OJK and similar regulatory bodies.

2. Methods

This research employs a quantitative approach to address existing issues by applying the PIECES method (Performance, Information, Economic, Control, Efficiency, Service) in a satisfaction survey of SLIK users at the Financial Services Authority (OJK) Office in West Java Province. The population consists of 28,237 active SLIK debtors/customers at the OJK Office in West Java Province from 2021 to 2023. A sample of 100 respondents was selected with a 90% confidence level and a 10% error rate, using purposive sampling due to the large population size (Firdaus M.M., 2021). Data collection involved questionnaires and documentary studies. Data processing utilized SPSS for Windows version 23, involving statistical analyses such as validity

testing, reliability testing, F-test, multiple linear regression analysis, and calculation of average satisfaction based on the PIECES model. This method aims to generate average satisfaction scores from the application of the PIECES method in the satisfaction survey, and to demonstrate the extent of influence between PIECES variables and Customer Satisfaction variables, thereby testing hypotheses and correlations. This study aims to provide a comprehensive understanding of factors influencing user satisfaction with SLIK services based on the PIECES framework, and its implications for service management and improvement at the OJK Office in West Java Province.

3. Results and Discussion

3.1. Results
The characteristics of the respondents in this study can be seen in table 1.

Table 2. Respondent characteristics of using SLIK

No	Category	n	Percentage (%)
	Gender		
1.	Man	54	49%
2.	Women	56	51%
	Age		
1.	17-25 years	33	30%
2.	25-30 years	47	43%
3.	30-40 years	25	23%
4.	>40 years	5	4%
	Education		
1.	Junior High School	0	0%
2.	Senior High School	47	43%
3.	D4/S1	59	53%
4.	S2/S3	4	4%
	Experience of using SLIK		
1.	<1 year	79	72%
2.	1-2 years	31	28%
3.	>3 years	0	0%

Source: Data Processed (2024)

From the table above, it can be seen that of the 110 respondents in the sample, the majority of respondents were female 56 people (51%). This indicates a slightly higher participation of women in the survey, which may reflect their active involvement or interest in financial services managed by SLIK. Regarding the age of the respondents, the majority were in the 25-30 year age range 47 people (43%), This suggests that young adults, who are likely to be in the early stages of their financial management and credit activities, form a significant portion of SLIK users. This age group might be particularly interested in managing their credit information and financial standing as they build their financial history. The educational level of the respondents had the most university graduates 59 people (53%), suggesting that users of SLIK are generally well-educated and likely possess a good understanding of financial systems and the importance of maintaining accurate credit information. While the experience of using SLIK the respondents were mostly <1 year 79 people or (72%), indicating that SLIK has a relatively new user base, and many users are still in the early stages of interacting with the system. This could imply that recent outreach efforts or the increasing relevance of credit information in financial decision-making have drawn new users to SLIK.

Validity and Reliability Test
Table 3 shows that all of the indicators of the instrument developed in this study are considered valid. The reliability testing of this instrument uses Cronbach's Alpha to show a significance level of 0.6 (Sugiyono, 2010:257). The results of validity and reliability tests for the PIECES variables can be seen in table 2 below.

Table 3. Validity and Reliability Test Results

Variable	R-test	R-table	Cronbach's alpha	Information
Performance			0,913	Reliable
P1	0,881	0,463		Valid
P2	0,933	0,463		Valid
P3	0,841	0,463		Valid
P4	0,908	0,463		Valid
Information			0,881	Reliable
I1	0,806	0,463		Valid
I2	0,842	0,463		Valid
I3	0,880	0,463		Valid
I4	0,909	0,463		Valid
Economic			0,828	Reliable
E1	0,808	0,463		Valid
E2	0,776	0,463		Valid
E3	0,840	0,463		Valid
E4	0,830	0,463		Valid
Control			0,848	Reliable
C1	0,822	0,463		Valid
C2	0,943	0,463		Valid
C3	0,787	0,463		Valid
C4	0,749	0,463		Valid
Efficiency			0,914	Reliable
EF1	0,884	0,463		Valid
EF2	0,878	0,463		Valid
EF3	0,914	0,463		Valid
EF4	0,892	0,463		Valid
Service			0,910	Reliable
S1	0,889	0,463		Valid
S2	0,844	0,463		Valid
S3	0,899	0,463		Valid
S4	0,923	0,463		Valid

Source: Data Processed (2024)

From the test results in Table 3, each statement item in the PIECES variable is declared valid because the r-count is greater than 0.463. The results of the reliability test for the PIECES variable show a Cronbach's Alpha value greater than 0.60, indicating that the research instrument is reliable for the six variables studied. The highest Cronbach's Alpha value is for the efficiency variable, with a value of 0.914, indicating that the questionnaire for this variable has near-perfect reliability.

F test

The F-test in this study is conducted to analyze all independent variables, namely PIECES (Performance (P), Information (I), Economic (E), Control (C), Efficiency (EF), Service (S)), which simultaneously influence Customer Satisfaction (Y) as the dependent variable. According to the F-test criteria, the hypothesis is accepted if Fcalculation > Ftable. The results of the F-test for variables X and Y can be seen in the following figure.

Table 4. F Test PIECES and customer satisfaction result

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	1831,292	6	305,215	227,537	$0,000^b$
	Residual	138,163	103	1,341		
	Total	1969,455	109			

Source: Data Processed (2024)

To determine the F table value, this study uses the degrees of freedom: df1 = k - 1 = 7 - 1 = 6 (for the number of variables). As for df2 for the denominator, it is calculated as n - k = 110 - 7 = 103 (where n is the total sample size and k is the number of variables). Therefore, based on these calculations, the F table value for a significance level of 5% is 2.19. This can be observed in Figure 4.8, where the F-test results indicate that the calculated F value (Fcalculation) is 227.537. Interpreting these results, since Fcalculation > Ftable and the significance level (0.00) is less than 0.05, it can be concluded that all independent variables (PIECES components) simultaneously influence Customer Satisfaction among debtors at the OJK Office in West Java Province regarding the Financial Services Information System (SLIK).

Multiple Linear Regression Analysis

Multiple linear regression was employed in this study to examine the effect of independent variables PIECES (Performance, Information, Economic, Control, Efficiency, Service) and the dependent variable Customer Satisfaction (Y). The following is a depiction of the analysis results.

Table 5. Multiple Linear Regression Analysis result

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig
		B	Std. Error	Beta		
1	(Constant)	0,208	0,016		12,670	0,000
	Performance	0,281	0,002	0,203	150,041	0,000
	Information	0,138	0,001	0,110	102,076	0,000
	Economic	0,252	0,002	0,175	125,760	0,000
	Control	0,298	0,001	0,231	204,563	0,000
	Efficiency	0,215	0,002	0,154	122,940	0,000
	Service	0,318	0,002	0,235	173,341	0,000

Source: Data Processed (2024)

Based on Table 5, the interpretation derived from the multiple linear regression analysis formula is $Y = 0.208 + 0.281P + 0.138I + 0.252E + 0.298C + 0.215EF + 0.318S + e$. The explanation of the results reveals that the constant or intercept value in the multiple linear regression test is 0.208. This indicates the expected value of Customer Satisfaction (Y) when all independent variables are zero. Notably, the variable Service (S) exerts the highest influence among the variables on Customer Satisfaction with SLIK at the OJK Office in West Java Province, increasing by 0.318 units for each unit increase in Service (S).

Coefficient of Determination Results

Table 6. Coefficient of Determination Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,964	0,930	0,926	1,15818

Source: Data Processed (2024)

From the testing in Table 6, it is evident that the calculated coefficient of determination, R, is 0.964 or 96.4%, indicating a strong correlation between Customer Satisfaction and the PIECES variables. Additionally, the R-squared value for this study is 0.930 or 93%, signifying that each PIECES variable significantly influences Customer Satisfaction by 93%, while the remaining 7% is influenced by other variables not included in this study.

Model PIECES

The researcher utilized this method as a measurement tool to determine customer satisfaction with the operational performance of the Financial Services Information System (SLIK) used by debtors at the OJK Office in West Java Province. Table 7 below shows the calculation results for the PIECES variables using the average satisfaction formula.

Table 7. Mean Score of Variables

No	Variable	Mean Score	Remark
1	Performance	4,16	Satisfied
2	Information	4,26	Very satisfied
3	Economic	4,18	Satisfied
4	Control	4,11	Satisfied
5	Efficiency	4,23	Very satisfied
6	Service	4,22	Very satisfied
	Total	**4,19**	**Satisfied**

Source: Data processed (2024).

The average customer satisfaction level with SLIK, comprising PIECES variables, was measured among 110 respondents over a questionnaire distribution period of 1 month and 16 days (April 16 to June 1, 2024), yielding an average score of 4.19 on the Likert scale, categorized as "Satisfied." This indicates that debtors at the OJK Office in West Java Province feel satisfied and well-supported by the Financial Information Service System (SLIK). Among the variables, Information emerged as the dominant factor in enhancing customer satisfaction, with an average satisfaction score of 4.26, categorized as "Very Satisfied." However, the lowest satisfaction average was observed in the Control variable, with a score of 4.11. This could be attributed to incidents such as scams under the guise of credit record removal services that occurred on January 1, 2024, as well as server disruptions, which affected public trust and security, thereby lowering satisfaction levels.

ANOVA results showed an F-value of 227.537, indicating that F-calculation > F-table with a significance of 0.000 < 0.05. This suggests that the independent PIECES variables (Performance, Information, Economics, Control, Efficiency, Service) collectively influence the dependent variable, customer satisfaction of debtors with SLIK at the OJK Office in West Java Province. Furthermore, the coefficient of determination (R) was calculated as 0.964 or 96.4%, indicating a strong correlation between customer satisfaction and the PIECES variables. The R-squared value for this study was 0.930 or 93%, meaning that 93% of customer satisfaction can be explained by the PIECES variables, while the remaining 7% is influenced by other variables not included in this study. In conclusion, the result demonstrates the important effect of PIECES components on customer satisfaction.

3.2. Discussion

The findings from this study have several practical and theoretical implications for the Financial Services Authority (OJK) and similar regulatory bodies. Practically, the high satisfaction score for the Information variable highlights the importance of providing accurate, timely, and relevant information to debtors. OJK should continue to prioritize and enhance the quality of information available through SLIK to maintain and further improve debtor satisfaction. The relatively lower satisfaction score for the Control variable indicates a need for improved security measures. OJK should invest in robust security protocols and measures to prevent scams and server disruptions. By enhancing control measures, OJK can restore and increase public trust in the system. Combining user evaluations from rating scales and written feedback using sentiment analysis has proven effective in measuring user satisfaction. OJK should continue to utilize such methodologies to gather comprehensive feedback from debtors and make informed decisions for system improvements. To address any areas of concern, OJK could provide targeted training and support for staff and users. This could include workshops on how to navigate and utilize SLIK effectively, as well as information sessions on identifying and avoiding scams.

The study also contributes to the theoretical understanding of information system evaluation and user satisfaction. The application of the PIECES framework in this context validates its effectiveness in assessing customer satisfaction with financial information systems. This reinforces the utility of the framework in different sectors and geographic regions. The strong correlation between the PIECES variables and customer satisfaction underscores the multidimensional nature of user satisfaction in information systems. This finding supports existing theories that emphasize the importance of various system attributes (performance,

information, economics, control, efficiency, and service) in determining overall user satisfaction. The study highlights the significant impact that security and control measures have on user trust and satisfaction. This finding aligns with and extends existing literature on the importance of security in information systems, suggesting that enhancing control measures can directly improve user satisfaction and trust. By demonstrating the significant influence of the PIECES variables on customer satisfaction, this study contributes to the broader understanding of information systems success models, such as the DeLone and McLean Information Systems Success Model. The results support the inclusion of system quality, information quality, and service quality as critical determinants of user satisfaction.

Overall, this study provides valuable insights into the factors influencing debtor satisfaction with SLIK at the OJK Office in West Java Province. The practical implications offer a roadmap for targeted improvements, while the theoretical contributions enhance the understanding of information system evaluation frameworks. By addressing the identified areas for improvement and leveraging the strengths of SLIK, OJK can ensure that the system continues to meet the evolving needs of its users, thereby maintaining high levels of satisfaction and trust.

4. Conclusion

Based on the research results, which went through various statistical stages using SPSS for Windows and various tests on Customer Satisfaction of SLIK debtors at the OJK Office of West Java Province by applying the PIECES method, the following conclusion can be drawn: is proven that the PIECES variables collectively and strongly correlate with Customer Satisfaction among debtors using the Financial Information Service System (SLIK) at the OJK Office of West Java Province. This indicates that the first hypothesis is accepted (significant), showing that the PIECES components have an impact on Customer Satisfaction. It is clear that debtors at the OJK Office of West Java Province feel satisfied and supported by the presence of the Financial Information Service System (SLIK). The Information variable emerged as the dominant factor in increasing Customer Satisfaction, indicating a "Very Satisfied" category. This aligns with previous research findings in measuring customer satisfaction among service users, optimizing and improving services by companies through these six variables as a form of implementation and evaluation in the form of satisfaction surveys.

This indicates that the company must focus more on deeply understanding the needs and desires of customers, which will not only increase customer satisfaction but also strengthen the company's image and build greater trust. However, this study also revealed that the Control aspect of the Financial Information Service System (SLIK) received a lower score compared to other aspects. Therefore, there needs to be an improvement in the security and integrity of the system to prevent digital crimes using the SLIK system and to mitigate unauthorized access, thereby maximizing the comfort and satisfaction of debtors in using SLIK. The recommendations that can be provided by the researcher include the availability of a suggestion box at the OJK Office of West Java Province for direct feedback when debtors utilize walk-in services, as well as continuous evaluation of SLIK usage through satisfaction surveys using various methods as innovations and improvisations for future system development.

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