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Research Article

Analyzing User Satisfaction with the Helpdesk System of PT. Matahari Department Store: An Evaluation Study

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ABSTRACT

Helpdesk systems play a crucial role in improving operational efficiency and user experience in businesses. PT. Matahari Department Store has developed a helpdesk system to support its employees' technical needs. However, the level of user satisfaction with the system remains unclear, necessitating an evaluation to identify areas for improvement. This study aims to assess user satisfaction by analyzing Perceived Usefulness (PU), Perceived Ease of Use (PEU), System Quality (SQ), and Continued Use Intention (CUI). Using Partial Least Squares Structural Equation Modeling (PLS-SEM), data were collected from employees and analyzed for validity and reliability. The research follows structured steps, including data collection, hypothesis formulation, and model evaluation. The findings indicate that Perceived Usefulness (PU) and System Quality (SQ) significantly impact user satisfaction, while Perceived Ease of Use (PEU) has a weaker influence. Additionally, Continued Use Intention (CUI) is highly correlated with satisfaction, emphasizing the need for system improvements to enhance long-term adoption. These insights provide valuable recommendations for optimizing the helpdesk system to meet user needs effectively. The study highlights the importance of system customization and technical support in increasing user engagement and operational efficiency.

Keywords: Helpdesk System, User Satisfaction, PLS-SEM, Technology Acceptance Model (TAM).

INTRODUCTION

Help desk systems or applications are used by several companies. Help Desk systems are developed along with the information system [1]. They could be in the form of simple or complex systems. However, the main purpose of the help desk system to exist is to help its users. This system is where the user usually obtains information on the frequently asked questions. Rather than asking the same question from time to time, some companies decide to make the help desk system satisfactory and convenient for the user. In Short, a help desk system is a customer service or support system that provides user service with a centralized platform to track and request assistance. One of the companies that implements the help desk system by making help desk applications is PT. Matahari Department Store. This company is the first store that introduce the modern department store concept. Currently, they have 149 stores in 82 cities. Not only that, they are also active in online presence on Matahari.com.

Based on the Finance Online website, there are three key components before implementing the help desk system. First, the communication channel that customers are likely to use. In this case, customers refer to users in the Matahari IT Division and employees in the store. Identifying the communication channels that are likely to be used in the company are social media, WhatsApp, email, and voice call/voice line. Second, what is good customer service according to the actual customer? In this case, Customer service means the help desk system itself. Third, the biggest obstacles in delivering high-quality helpdesk service.

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First, communication channel that the customer is likely to use which the highest vote is voice calls. Voice call customer support can give a better experience. However, it cannot be implemented in the IT Support in the company. Because the number of issues can exceed the normal average customer support.

Second, what is good customer service according to the actual customer's highest vote? Most people want to have problems efficiently resolved in a single interaction. It was noted that customers want a fast solution.

Lastly, showed the obstacle in delivering high-quality service. The result is modernizing the system to take the first spot. Modernizing systems can help either the customer/employee and the support division to have better time management.

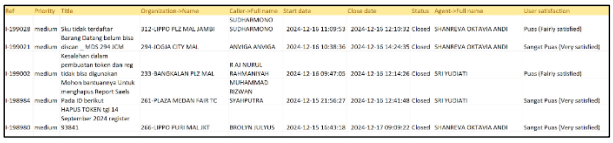

Fig 1. Example of Incident Ticket

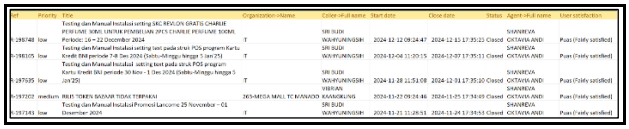

Fig 2. Example of Request Ticket

Figure 1 is an example of an incident ticket. What makes the incident ticket different from the request ticket is that the incident ticket focuses on the employee's work, not the internal IT division. Based on Figure 2, it focuses on internal requests, and some of them involve credential information. One of the internal requests that usually makes it to Promo testing. Every promotion must be tested before launched in the store.

Problem Statement

The actual system used for ITOP is where the issue report is centralized in ITOP. All the issues reported will be counted and shown on the ITOP dashboard. The dashboard functionally gives a monthly percentage of issues from low to high risk. However, usually, the employees panic when they encounter issues in the mall store. Understanding user satisfaction with PT. Matahari Department Store's helpdesk system is crucial to ensuring its effectiveness in addressing user needs. Current satisfaction levels and potential areas for improvement remain unclear, necessitating an evaluation to enhance the system's performance and overall user experience.

Research Question

From the problem statement, we can conclude some research questions. Does user satisfaction affect the system quality, perceived usefulness, and perceived ease of use?

Research Purpose

The purpose of the research is solely to evaluate the existing help desk system that was developed by PT. Matahari Department Store itself. Evaluation of the existing help desk system to find the weaknesses and strengths in the existing help desk system. Evaluation will be seen in several aspects, such as the actual system use, intention of use by the user, usefulness, ease of use, efficiency of the system, and other factors.

Research Benefit

First, confirm that the research will benefit the company by giving an overview evaluation based on the valid opinion of their employee. Here are the benefits of evaluation system are evaluating the system quality, perceived ease of use, and perceived usefulness affect the user satisfaction.

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LITERATURE REVIEW

A. *Helpdesk System*

IT Helpdesk Software is a tool that centralizes and streamlines the management of technical support requests [2]. Helpdesk solutions typically offer functionalities like ticket tracking, knowledge repositories, real-time chat, email connectivity, and analytics tools. Helpdesk systems can be classified into different types:

1. Customer-facing helpdesk [3]: Focuses on resolving external customer issues (e.g., order problems or technical queries).

2. Internal helpdesk [4]: Serves employees within an organization, handling IT support, HR-related queries, or internal service requests.

Modern helpdesk systems leverage automation, artificial intelligence, and analytics to improve efficiency and enhance user experience.

DeLone & McLean Model

The DeLone and McLean Information Systems Success Model is an extensive framework designed to assess the effectiveness of information systems (IS). It was first proposed in 1992 and subsequently updated in 2003 to address evolving IS challenges. The original model has around 6 core components/variables [5]. The six elements consist of System Quality, Information Quality, Use, User Satisfaction, Individual Impact, and Organizational Impact. The initial framework associates the quality of an Information System with its usage and user satisfaction, which together influence both individual and organizational outcomes.

The original model was then improved by DeLone & McLean in 2003 in a new journal [6]. It has similar components however, they change some component names, like Net Benefits. This improved model remains a cornerstone in IS research, offering a structured way to measure and improve the success of information systems.

ChatGPT in tertiary education: elements affecting user satisfaction with ChatGPT and

The intention to continue using it

The framework employed in this study is derived from an article titled “ChatGPT in higher education: factors influencing ChatGPT user satisfaction and continued use intention,” which developed its model of user satisfaction to bolster the investigation of ChatGPT, also referred to as a Support System. [7]. Here is the model given by the journal:

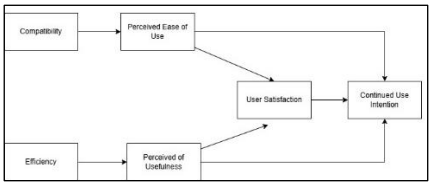

Fig 3. User Satisfaction Model

METHODOLOGY

Variables and Definitions

User Satisfaction

User Satisfaction is the result of personal motivation, such as goals and interests. The first theory about user satisfaction itself was brought on by (Oliver, 1980) it was said that, User satisfaction is a psychological state resulting from a match between expected and perceived system performance [8]. User satisfaction represents the comprehensive evaluation of how pleased users are with a system or service, influenced by their expectations, experiences, and perceived effectiveness. [9]. It plays a crucial role in assessing the effectiveness of information systems and directly affects the intention to continue using them [10].

Continued Use Intention

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Continued Use Intention pertains to an individual's willingness to keep using a particular system or technology moving forward. This willingness is shaped by how satisfied users are, as well as their views on the system's usefulness and user-friendliness. The intention is significantly influenced by user satisfaction, the system's quality, perceived ease of use, and perceived usefulness. [11].

Perceived Ease of Use

Perceived ease of use pertains to how much a user thinks that utilizing a specific system will require little effort. This concept is a fundamental element of the Technology Acceptance Model (TAM), introduced by Davis in 1989. It influences user satisfaction and is a critical factor in determining whether a user continues to use a system [12].

Perceived Usefulness

Perceived usefulness describes the extent to which a person believes that using a specific system will enhance their performance. It is an essential element of the Technology Acceptance Model (TAM) and has a direct impact on user satisfaction and the intention to continue using the system. [13].

System Quality

System quality pertains to a system's overall performance, encompassing aspects such as reliability, usability, and efficiency. This aspect is essential within the DeLone & McLean Information System Success Model, which highlights that superior system quality enhances user satisfaction and promotes system usage. [14].

Indicator and Question

In research, indicators and questions are essential tools for measuring abstract concepts or constructs. Decided that the indicator will be Very Disagree (1), Disagree (2), Slightly Disagree (3), Slightly Agree (4), Agree (5), and Very Agree (6). After deciding on the indicators, proceed with making a questionnaire. Here is the question that going to be distributed to Matahari's employees:

Table 1. Common Question

	Option 1	Option 2	Option 3
What is your age?	25 - 40	40 - 60	60> above
Where do you work?	Matahari Tower	Matahari Store	-

Table 2. Perceived Ease of Use (PEU)

Question	Indicator
The helpdesk system is easy to learn and operate.	PEU1
I find the helpdesk system's interface clear and straightforward to use.	PEU2
Interacting with the helpdesk system doesn't require a lot of mental effort.	PEU3
I can use the helpdesk system without assistance or technical support.	PEU4

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Table 3. Perceived Usefulness (PU)

Question	Indicator
The helpdesk system helps me accomplish tasks more efficiently,	PU1
Using the helpdesk system improves the quality of my work or output	PU2
The helpdesk system is a useful tool for achieving my goals.	PU3
The helpdesk system saves me time compared to other methods or systems.	PU4

Table 4. System Quality (SQ)

Question	Indicator
The helpdesk system helps you to ask for technical support efficiently.	SQ1
Using the helpdesk system improves the quality of my support and issue resolution tasks.	SQ2
The helpdesk system is a valuable tool for tracking and managing support requests.	SQ3
Using the helpdesk system helps me meet my work goals and deadlines more effectively.	SQ4

Table 5. User Satisfaction (US)

Question	Indicator
I am satisfied with my overall experience using the helpdesk system.	US1
The helpdesk system performs consistently well and meets my expectations.	US2
The technical support or employee service provided is satisfactory.	US3
The helpdesk system is reliable and free from frequent errors or crashes.	US4

Table 6. Continued Use Intention (CUI)

Question	Indicator

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I plan to continue using the helpdesk system for managing support requests in the future.	CUI1
I would recommend the helpdesk system to my colleagues or peers for their support tasks.	CUI2
The helpdesk system will remain my primary tool for resolving customer or internal issues.	CUI3
I am willing to use the helpdesk system regularly as part of my daily work routine.	CUI4

Population Sampling

Population sampling refers to the process of choosing a group of individuals from a larger population for research purposes. This is essential for research when studying the entire population is impractical. A well-designed sample ensures that conclusions drawn from the study are valid and generalizable to the entire population [15].

$$n = N \cdot Z^2 \cdot p \cdot (1-p)/(E^2 \cdot (N-1)) + Z^2 \cdot p \cdot (1-p) \quad (1)$$

From the formula below, its notation has its meaning. n is the required sample, N is 1000: Population size, Z is 1.96: Z-score for 95% confidence, P is 0.5: Assumed population proportion for maximum variability, and last, E is 0.05: Desired margin of error. Using the formula above, we can calculate the minimum sample that must be collected. The total minimum number of respondents required is around 278 samples.

Hyphotesis

Using the model as the pinpoint for the hypothesis, here is the overview of the model.

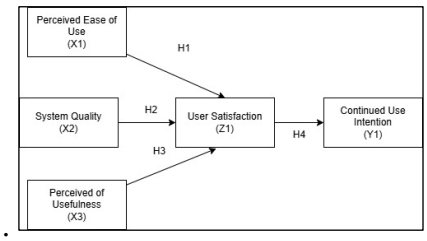

Fig 4. Hypothesis for User Satisfaction Model

From the hypothesis above, the significance of each variable can be affected by the others and can be defined one by one. Here is the relationship between each variable:

Table 7. Hypothesis Table

H1	Perceived Ease of Use (X1) affects User Satisfaction (Z1) of the user who uses the helpdesk system.
H2	System Quality (X2) affects User Satisfaction (Z1) of the user that uses the helpdesk system.
H3	Perceived Usefulness (X3) affects User Satisfaction (Z1) of the user who uses the helpdesk system.

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H4	User Satisfaction (Z1) affects Continued Use Intention (Y1) of the user who uses the helpdesk system.

RESULT AND DISCUSSION

results and discussion contain the respondent profile and the measurement model. The respondents are anonymous and taken from Matahari's employees.

Respondent Profile

Table 8. Respondent Profile

Variable		Count	Percentage
Age	25 – 40	141	50.4%
	40 – 60	117	41.8%
	60 > above	22	7.9%
Workplace	Matahari Tower	42	15%
	Matahari Store	238	85%

Among 280 respondents (100%), which is shown in the table above, they were divided into different categories to have a calculation analysis and theory for this research. The variables used have been agreed beforehand with a related theory. The first category is age, age can determine a person's different habits. For example, at the age of 25-40, we can categorize people as younger than the other choices. Younger people still have good memories and good senses. Moreover, the elderly have some decreased body functions, like faded memories. That is why age is important in this research. The last variable is the workplace or office where they often work. There are two workplaces: the internal and external employee. The internal employees are the ones who work in Matahari Tower. Basically, the internal will help the external employees that work on Matahari Store. Since the company has so many branches up to 149. Assuming each region would exceed 300 employees.

Measurement Model

A measurement model represents the connection between latent variables and their indicators. As illustrated in Figure 4 below, the variables include perceived ease of use (PEU), perceived usefulness (PU), system quality (SQ), user satisfaction (US), and continued use intention (CUI).

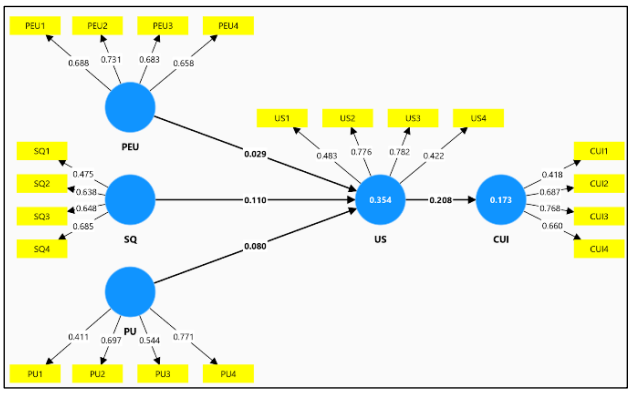

Fig 5. Outer Loading Latent Variable and Indicator relationship

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Table 9. Indicator and it's Outer Loading

CUI1	0.418
CUI2	0.687
CUI3	0768
CUI4	0.660
PEU1	0.688
PEU2	0.731
PEU3	0.683
PEU4	0.658
PU1	0.411
PU2	0.697
PU3	0.544
PU4	0.771
SQ1	0.475
SQ2	0.638
SQ3	0.648
SQ4	0.685
US1	0.483
US2	0.776
US3	0.782
US4	0.422

Table 9 presents the convergent validity for each indicator, which is a key validity measure in PLS-SEM. The purpose of convergent validity is to evaluate the relationship between each indicator and its corresponding latent variable. To achieve convergent validity, a set of indicators must accurately represent both the underlying latent construct and a single latent variable.

For an indicator to meet the appropriate standard of convergent validity, its associated latent variable should, on average, explain more than half of the variance of its indicators. The assessment of convergent validity is conducted by examining outer loadings. If the outer loading value exceeds 0.60, the indicator is considered to have strong validity. The results from our analysis indicate that most indicators meet the criteria, as their outer loading values surpass 0.60, confirming a high level of convergent validity.

Table 10. Variable Correlation

	CUI	PEU	PU	SQ	US
CUI	1.000				
PEU	0.336	1.000			
PU	0.537	0.399	1.000		
SQ	0.477	0.329	0.515	1.000	
US	0.415	0.365	0.500	0.507	1.000

Table 10 presents the square roots of the Average Variance Extracted (AVE) from Table 11. Additionally, it displays the correlation between latent variables. A latent variable is considered to have strong discriminant validity if its AVE square root is higher than its correlation with other latent variables. Based on our result, some variable correlations don't have good discriminant validity. Perceived Ease of Use (PEU) and User Satisfaction (US) have good discriminant validity. PEU has the AVE 0,476. The correlation AVE max is 0.399 (PU) and 0.365 (US), which AVE of PEU has a greater value than all correlation values, meaning PEU has good discriminant validity. The case like the US variable has AVE is 0.406 which is smaller than these two max values, 0.507 and 0.500 it means have poor discriminant

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validity. Variables that have poor discriminant validity are system quality (SQ) and perceived usefulness (PU). Both of them have correlation values bigger than the AVE value.

Table 11. Cronbach's Alpha

	Cronbach's alpha	Composite reliability	R-Square	AVE
CUI	0.542	0.570	0.734	0.418
PEU	0.636	0.637	0.784	0.476
PU	0.482	0.531	0.705	0.386
SQ	0.445	0.451	0.707	0.381
US	0.506	0.571	0.719	0.406

Cronbach's alpha and composite reliability are key indicators for assessing the reliability of a variable. Composite reliability reflects the true reliability of a variable, whereas Cronbach's alpha represents its lower-bound estimate. A latent variable is considered to have good reliability if its value exceeds 0.7.

Based on the results, all variables have values below 0.7 in both Cronbach's alpha and composite reliability. This indicates that the reliability criteria have not been adequately met.

The R-squared value represents the extent to which the dependent variable can be explained by the independent variables. In this case, the dependent variable includes all of them. An R-squared value above 0.67 indicates a strong model fit, suggesting that the model effectively explains the variability in the dependent variable.

Next is the Average Variance Extracted (AVE). This value is used to measure convergent validity. The AVE value must be more than 0.5 for an indicator to have good convergent validity. From the results shown, no variable meets the expectation.

In Conclusion, all variables have good discriminant validity, however, the reliability is not yet adequate.

Structural Model

Table 12. Structural Model

	Patch Coefficient	T-Square	Information
PEU → US	0.151	0.029	Insignificant
PU → US	0.277	0.080	Insignificant
SQ →US	0.315	0.110	Insignificant
US → CUI	0.415	0.208	Significant

This study uses the bootstrap analysis approach to calculate the structural route coefficient of the model to determine the path coefficient's significance level. In this study, a two-tailed test with a significance threshold of 0.05 was utilized to assess the research hypothesis. Therefore, if the t-value measure is higher than 1.96, the hypothesis is supported since there is a significant relationship between the latent variables.

Statistical Model

Table 13. Statistical Model

	Original Sample (o)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistic (|O/STDEV|)	P Values
PEU → US	0.151	0.158	0.066	2.295	0.022

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PU → US	0.277	0.286	0.059	4.699	0.000
SQ →US	0.315	0.316	0.065	4.876	0.000
US → CUI	0.415	0.434	0.061	6.774	0.000

The path coefficients (Original Sample - O) indicate the strength of the relationship between independent and dependent variables, where higher values suggest a stronger influence of the independent variable on the dependent variable. In addition to the path coefficients, the T-Statistics (|O/STDEV|) help determine the statistical significance of these relationships. A t-value greater than 1.96 signifies that the relationship is statistically significant at a 95% confidence level, ensuring that the observed effect is unlikely to be due to chance. Furthermore, P-values serve as a critical measure to validate significance. A p-value less than 0.05 indicates a statistically significant relationship, while a p-value equal to or greater than 0.05 suggests that the relationship is not statistically significant. In this table, all p-values are below 0.05, confirming that each relationship between the variables is statistically significant and meaningful in explaining the dependent variable.

Hypothesis will be accepted statistically based on the T-statistic and the P-values. Here is the explanation:

Table 14. Hypothesis Result

H1	Perceived Ease of Use (PEU) influences User Satisfaction (US), but the effect is weaker compared to other factors. Matahari's Employee preference and age influences the perceived ease of use. The relationship is significant – acceptable.
H2	Perceived Usefulness (PU) strongly influences User Satisfaction (US). The Matahari's employee adaptibility and regular daily system influences the how high the perceived of usefulness. This relationship is highly significant – acceptable.
H3	System Quality (SQ) has a strong and significant impact on User Satisfaction (US), meaning a better system quality leads to higher user satisfaction. The factor that influences the system quality can be the response time of the ticket, how usable the system usable, and Usability– acceptable.
H4	User Satisfaction (US) strongly influences Continued Use Intention (CUI). User Satisfaction can affect continued use intention, depending on the individual user experience and the Matahari's employees. This is the strongest relationship in the model, indicating that satisfied users are more likely to continue using the system, acceptable.

The hypothesis is accepted if using the statistical model. From all the measurements we can see which hypothesis is accepted in which model.

CONCLUSION

From the research, I want to prove the user satisfaction with the helpdesk system that has been used for so long. Is it still good or not? The research shows that the reliability and the acceptable hypothesis aren't good. This research shows that either the respondent or the question is irrelevant. However, if we calculate from the statistical model, all the hypotheses are accepted.

In conclusion, there is only one acceptable hypothesis, which is user satisfaction with the continued use intention. It proved that the company needs to make the user desire to use the helpdesk system, it was seen that the user doesn't really have an interest in using the helpdesk system. In overall of the system and the usefulness are already fulfilled by the company although perhaps need some improvement.

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