ISO Technology Analysis with Extended TAM : A Case Study in PT Ebako Nusantara

Nindhia Hutagaol[1]*, Faizal Asrul Pasaribu[2], Jumadi Simangunsong[3]
Department of Informatic Engineering [1], [3]
Department of Information System [2]
Universitas Asa Indonesia
Jakarta, Indonesia
nindhia.hutagaol@asaindo.ac.id[1],faizal@asaindo.ac.id [2],jumadi@asaindo.ac.id [3]

***Abstract*— Implementing information systems in manufacturing aims to improve operational efficiency and service quality. This study evaluates the acceptance of Internal Service Order (ISO) applications with the Extended Technology Acceptance Model (ETAM), that adds variables such as information quality, system quality and user habits. PLS-SEM analysis of 31 respondents found that user habits significantly influenced perceived ease of use (77.8%), which in turn influenced perceived usefulness (86.4%) and user attitude (62%). However, information quality did not significantly influence user habits, suggesting a need to improve information detail. These findings will help develop a TAM model for Indonesian furniture companies. The study recommends the improvement of information accuracy, the development of real-time notification features, and user training to increase adoption and operational efficiency This study provides guidance for organizations to optimize the application of technology in manufacturing operations.**

Keywords*— ETAM, Internal Service Order, PLS-SEM, Manufacturing, Technology Acceptance.

I. INTRODUCTION

The increasing growth of technology in today's competitive industrial market encourages institutions to adopt innovative applications in various sectors, including the manufacturing industry. In recent years, many studies have explored adopting and accepting information technology applications in different business contexts using the Technology Acceptance Model (TAM). Chotijah & Retrialisca studied user readiness in adopting technology in the furniture sector in the Java area and found that the perception of inconvenience and unsafe factors from a user is an important issue faced in adopting technology [1]. This approach was also utilized in the furniture industry in Jepara, Indonesia to explore how users accept technology to improve operational efficiency and local competitiveness. By using TAM dimensions, this study shows how new technology can be accepted by users if it is able to deliver tangible benefits in terms of improved operational efficiency and convenience, such as real-time tracking and an intuitive user interface[2]. This research strengthens the validity of TAM in the acceptance of Distributed Ledger Technology in manufacturing which identifies that ease of use of technology (PEOU) significantly influences usability and attitude towards technology[3]. Similarly, this study found that technology usefulness is the most influential factor affecting the intention to use systems such as an Enterprise Resource Planning (ERP) system in apparel manufacturing in Java, reinforcing the importance of technology benefits to users[4]. In the same context, Arif evaluated the manufacturing module of an ERP system in an aluminium company and identified usability and ease of use as the main drivers that influence users' intention to adopt new technology. Although user-perceived risk was not significant to usage intention, this research demonstrates that managing operational risk is a key driver of digital transformation success.[5].

Ultimately, the furniture industry believes that technology can help streamline internal processes, such as operational service management, which can generate significant profits, reduce costs, and improve efficiency and decision-making. One company that has used technology in its business processes is PT Ebako Nusantara, which is involved in the cross-country export business of wooden furniture manufacturing. The technology used is the Internal Service Order (ISO) application. One of the technological innovations that optimize operations and improve services to be efficient is the Internal Service Order (ISO) application[6]. This application became a necessary tool in a furniture manufacturing company to facilitate the management of requests in internal units and improve operational workflow. The manufacturing industry's complex production processes and diverse operational needs create a complex environment to understand and adapt to the use of Internal Service Order (ISO) applications. Streamlining internal processes such as operational service management in the furniture manufacturing industry can bring significant benefits, reducing costs and improving efficiency. More importantly, it can improve decision-making and provide a more confident outlook for the future. In this case, the important role of organizational culture, employee training and education as well as management support, becomes a collaborative process to support the acceptance of this technology in the manufacturing business environment.

This study aimed to analyze the acceptance of the Internal Service Order (ISO) application in a wooden furniture

p-ISSN 2301-7988, e-ISSN 2581-0588
DOI : 10.32736/sisfokom.v14i1.2371, Copyright ©2025
Submitted : January 6, 2025, Revised : January 16, 2025, Accepted : January 24, 2025, Published : January 31, 2025

manufacturing company, PT Ebako Nusantara, using an extended TAM framework. In this case, the researcher presents insights into effective technology adoption strategies in the manufacturing sector. Hopefully, the findings can contribute to the development of the Technology Acceptance Model and suggest ways to improve technology adoption in manufacturing.

II. LITERATURE REVIEW

In the industrial world, the pressures of globalization, business competition, and the need for high efficiency are driving various industries to innovate and improve operational performance. The furniture industry, a dynamic sector, is a prime example of this adaptability. It constantly evolves, quickly adapting to consumer preferences, technological innovations, and market challenges. As furniture trends follow lifestyle and interior design, manufacturers demonstrate their resilience by adapting to remain competitive. For example, innovations in materials and production technologies, such as automated technologies and 3D printing, enable greater efficiency and flexibility in responding to changing market demands [7]. The development of textile production and tracking systems that automate processes and improve data management [8] is another example of this adaptability. In addition, the implementation of technology such as the Internal Service Order (ISO) application makes it easier for various departments to perform operational services with mutual integration [6] , including one of them in manufacturing. This Internal Service Order is one of the important components in the operational framework used to manage and track internal service requests within an organization such as maintenance, logistics, and quality control. The process in this type of system is designed to ensure that every service required during production runs according to schedule, thus meeting production targets on time and efficiently [9]. Effective task scheduling in ISO is key to maintaining smooth operations and minimizing delays affecting overall productivity.

In its utilization, the Internal Service Order (ISO) application applied to manufacturing companies requires evaluation to understand the extent to which employees accept and implement this technology. The evaluation of application usage is not just a formality, but a crucial step to optimize operational efficiency, improve product quality, and increase customer satisfaction. The evaluation process is conducted in various ways from design to production management and customer relations. The importance of systematic evaluation cannot be overstated, as it helps companies identify strengths, weaknesses, and areas for improvement, thereby encouraging renewal and adaptation to evolving market dynamics [10].

One of the relevant methods for assessing the acceptance of this technology is the traditional TAM. It is commonly known as a framework used to identify the factors influencing how individuals intend to use and behave when using new technology. Furthermore, this model is even used in developing innovative products in the manufacturing industry, where perceived ease of use is highly influential on usability[11]. This relationship confirms the important role of user interface and training in increasing technology acceptance. In her research, Christine extended this method to include external factors relevant to the business context [12]. In furniture manufacturing, the study showed that factors such as supplier support, management efficiency, and facility conditions strongly influence the acceptance and use of ISO applications. Meanwhile, from a managerial perspective, Jacky [13] extended this model. He found that the management perspective has not been explored in the manufacturing industries, although this role is essential in applying technology in all sectors. Another study [5] modified this model to assess digital transformation in aluminum companies by adding the risk perception of technology adoption. Other factors [14], such as system quality, also need to be integrated into the TAM approach to understand organizations' sustainability intentions when using technology services. This researcher found it to play a role in improving users' perceptions of technology services.

A. Model Technology Acceptance (TAM)

This model is one of the widely used theoretical frameworks to measure how new technology is accepted with two main drivers, i.e., the usefulness and ease of use of technology (Fig. 1). Perceived usefulness (PU) refers to a high level of user confidence that technology can improve performance or productivity, and ease of use (PEU) to determine user perceptions of the ease in using technology. Both factors are believed to influence user behavior in using technology, thus creating interest in accepting and using it.

Technology Acceptance Modelling (TAM) is not just a theoretical construct, but a practical tool that can be used to predict the future application of technology. It has been successfully applied in various fields, making it a valuable asset for understanding and predicting technology adoption [15].

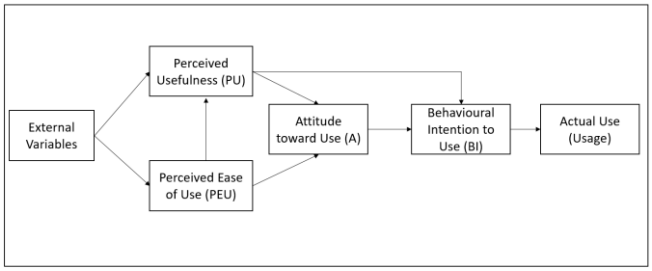

Fig. 1. Framework TAM [15]

Several researchers have used TAM to study technology acceptance in various fields. For example, Hu used it to study the development of Digital Trade technology among Chinese manufacturers, while Cao applied it to understand the acceptance of automated manufacturing technology in China [16] [17].

A study by Laumer et al.[18], found that information quality plays an important role in determining system user satisfaction. Information quality, which includes completeness, relevance, timeliness, and usefulness, has a greater impact. In addition, system quality (complexity, flexibility, navigation, and reliability) has the greatest impact on user satisfaction. This research confirms that information quality, particularly task

p-ISSN 2301-7988, e-ISSN 2581-0588
DOI : 10.32736/sisfokom.v14i1.2371, Copyright ©2025
Submitted : January 6, 2025, Revised : January 16, 2025, Accepted : January 24, 2025, Published : January 31, 2025

context, should be an organizational priority to improve user satisfaction, prevent workarounds and maximize the benefits of information systems. The study analyzed acceptance using a modified TAM with cultural dimensions and found that the cultural dimension 'uncertainty avoidance' has a significantly influence on perceived usefulness.[19]. High levels of uncertainty avoidance tend to favour structure, regulation and routine to reduce uncertainty in the work environment. high levels of uncertainty avoidance see systems as useful tools if they believe they can provide predictability and stability in day-to-day operations. Another study also used this concept to comprehend the enablers of acceptance of one telemedicine service from 275 participants and found that one of the factors that increased acceptance of this technology was the level of trust in the technology service. [20]. In the educational environment, Lukman applied this method to evaluate the academic system of a private institution. He found that attitudes towards system use significantly impacted technology acceptance [21]. Lenni found in her research that as long as digital technology is easy to use, it will tend to be adopted, especially in tourism. The study also highlights the importance of innovation in driving technology adoption, and shows that easy usage directly increases people's intention to use the technology [22]. This study extends the traditional TAM by including external variables such as perceived mobility, personal habits, and perceived experience with financial services technology. They found that personal habits have a stronger direct influence on technology adoption intentions than perceived mobility[23].

B. Information System Success Model (ISSM)

The ISSM model, a practical and influential tool in evaluating the success of information systems or technology, has been in use since its inception in 1992 [24]. Initially, the model comprised six key dimensions as shown in Fig.2 including information quality, system quality, system usage, user satisfaction, individual impact, and organizational impact. Over the following decade, further research [25], led to the addition of two new dimensions by DeLone: system service quality (Service Quality) and user interest in applying the system or technology (Intention to Use). These additions combined individual and organizational influences into a tangible benefit dimension (Net Benefit).

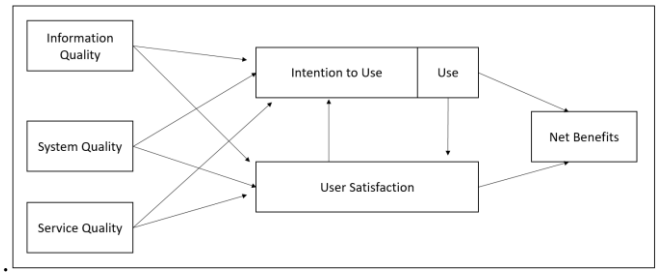

Fig. 2. D&M Information Success Model [25]

Previous researchers have used the ISSM model framework extensively to measure and identify factors affecting technology application acceptance. For example, the model was used to examine a mobile-based academic information system usage in education. According to this study, information quality, system quality, and perceived usefulness influenced users to continue using the technology. Meanwhile, service quality affects perceived usefulness but otherwise has no effect on the level of ease of use[26]. Similarly, in Ashfaq's research, this model was used and found that quality system information and services are very important to improve user experience and encourage the adoption of AI-based chatbot e-service technology[27]. This practical application underscores the relevance of this model in real-world scenarios.

C. Partial Least Squares Methods (PLS)

The PLS method is a commonly used analysis tool due to its ability to provide reliable evaluation results and work efficiently with small data sample sizes. Its unique feature is the ease with which it handles reflective and formative measurement models, making it applicable in a variety of research situations [28]. The PLS method works with two sets of components: a predictor variable component and a response variable component. Each predictor variable predicts the response variable construct by analyzing the data pattern, which indicates the most relevant relationship between the independent and dependent variables.

In addition to maximizing the correlation between predictor and response variables, PLS reduces the dimensionality of the data. This reduction results in a more straightforward and understandable model, providing ease and clarity in the analysis process. [29].

From the literature review conducted, this research will combine the TAM and ISSM approaches as an Extended Technology Acceptance Model (ETAM) by integrating external variables such as information quality, system quality, and user habits into the implementation of ISO applications. This additional dimension is to analyze the factors that influence technology acceptance, so that users' understanding is more comprehensive regarding the relationship between user perceptions and actual technology use. This approach not only considers the influence of technology convenience and usability but also information and quality systems and user habits, which significantly impact technology adoption. Using Partial Least Squares (PLS) analysis, this study will show the impact of these three factors and provide insights to identify areas for improvement and optimize the success of technology adoption.

III. RESEARCH METHOD

This study analyses and identifies the factors that shape and influence user interest in using the Internal Service Order (ISO) application. Based on the review of literature studies that have been conducted, three external variables will be added to the TAM model framework. These variables are adapted from the ISSM model: information quality, system quality, and user culture (habit) variables are added.

As shown in Figure 3, these three external variables along with other variables, namely the usefulness of technology, ease of use of technology, user attitudes towards technology, user intention to apply technology affect the dependent variable, namely the actual usage variable.

p-ISSN 2301-7988, e-ISSN 2581-0588
DOI : 10.32736/sisfokom.v14i1.2371, Copyright ©2025
Submitted : January 6, 2025, Revised : January 16, 2025, Accepted : January 24, 2025, Published : January 31, 2025

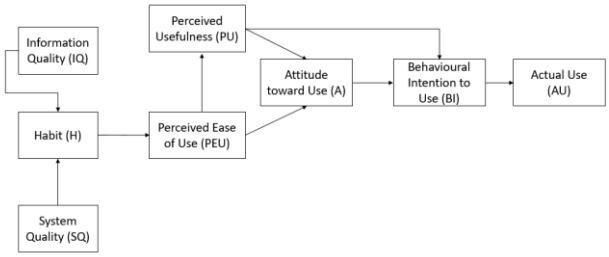

Fig. 3. Extended Technology Acceptance Model

a) Information Quality (IQ) is a crucial factor that determines how information is received and perceived by users when using a system or technology. In this model, it is not just assumed, but it is proven that information quality significantly impacts the system quality (SQ) of the Internal Service Order (ISO) application service.
***H1**: Information quality (IQ) positively and significantly impacts user habits (H) of the Internal Service Order application.*

b) System Quality (SQ), which represents the ability of the system or technology to perform interactions or operations, plays a critical role in the performance of information systems. This is an important measure for information system performance.
***H2**: System quality (SQ) is not just a factor, but a potential game-changer that impacts user habits (H) in the application of the Internal Service Order application.*

c) User habit (H) has a cognitive effect on behavioral interest and are proven that they significantly impact the ease of use factor[30]. This is a vital aspect for user behavior in the Internal Service Order (ISO) application.
***H3**: User habits (H) positively significantly impact the perceived ease of using the Internal Service Order application. (PEU)*

d) Perceived Ease of Use (PEU) determines the level of user confidence in the ease of use of technology and this factor contributes to improving user performance.
***H4**: PEU significantly affects the perceived usefulness of the Internal Service Order application (PU).*
***H5**: PEU significantly positively affects user attitudes while adapting the Internal Service Order application (A).*

e) Perceived Usefulness describes user confidence where the Internal Service Order application provides benefits during use.
***H6**: Perceived Usefulness (PU) positively and significantly affects user interest (IU) in the Internal Service Order application.*
***H7**: Perceived Usefulness (PU) significantly impacts user attitudes (A) to continue using the Internal Service Order application.*

f) Individual attitude towards using the system / Attitude towards Use (A) is essential in predicting users' behavioral interest in the system or technology services.
***H8**: A significantly affects user behavioral interest in using Internal Service Order (IU) services.*

g) The behavioral interest factor using the system / Behavioral Intention to Use (IU) is used as an indicator to measure the user's desire to take a specific action.
***H9** : User behavioral interest (IU) strongly influences the use of Internal Service Order (AU) services.*

h) Actual Use (AU) of Internal Service Order services in this case is affected by ease of use (PEU), usefulness (PU), individual attitudes (A) and behavioral interest (BI) of users towards the use of Internal Service Order services.

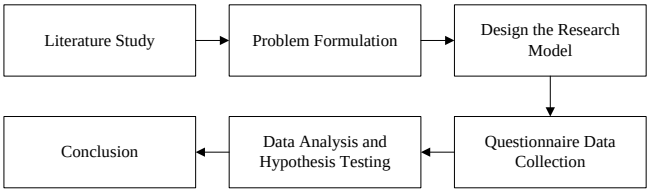

Fig. 4. Research Method

The systematic stages of this research were carried out in a structured manner (Figure 4), including:

1) Literature Study
Researchers meticulously traced literature or previous research related to the research topic. This comprehensive stage provides a deep understanding of the context of the problem and the methods used in the study, ensuring the audience is well-informed.
2) Problem Formulation
The researcher plays a pivotal role in guiding the research by formulating a problem that will find its solution at the end of the research. This stage sets the focus and direction for the study.
3) Design the Research Model
Researchers design research models that describe the relation among variables or factors that have impact on the acceptance of Internal Service Order application technology. This stage helps the reader understand how the research is structured.
4) Questionnaire Data Collection
At this stage, researchers compile questionnaires and document the results of participants' answers to be processed and analyzed at the next stage.
5) Data Analysis and Hypothesis Testing
This process involves analysis of participant data and statistical test analysis using quantitative methods.
6) Conclusion
Researchers explain the findings and relate the findings to what researchers have found before.

This study was conducted at PT Ebako Nusantara, which utilized the Internal Service Order (ISO) application by conducting a survey using a questionnaire instrument. Data collection began in September - October 2024, involving 31 employees from all units who actively applied for production machine repair services as research respondents. The questionnaire was designed using the Google Form feature and distributed online to respondents. the proposed model is examined by analyzing the entire data using the PLS method

p-ISSN 2301-7988, e-ISSN 2581-0588
DOI : 10.32736/sisfokom.v14i1.2371, Copyright ©2025
Submitted : January 6, 2025, Revised : January 16, 2025, Accepted : January 24, 2025, Published : January 31, 2025

and validate the statistically determined factors to test the research hypothesis. The data analysis process was conducted using SmartPLS software by extracting respondents' answers based on the modified instrument developed in previous research [10].

The questionnaire chart includes two parts of the instrument: the first demographic characteristics containing respondent information such as gender, age, and work unit. The next part consists of question items, where respondents will specify their level of experience according to a 5-point Likert scale with following questionnaires (Table 1) items below:

TABLE I. CONSTRUCT ITEMS

Variables	Statements
Information Quality (IQ)	1. The information available on this application helps me complete my work more efficiently
	2. The information available is always accurate
	3. The information available is complete and contains everything I need
	4. Information is constantly updated on time
Habit (H)	1. I use this application regularly to complete tasks
	2. I am comfortable and used to using this application.
	3. I believe this application can be used to improve collaboration between teams
	4. This application will be helpful for future sustainability
System Quality (SQ)	1. This application is easy to access and use at any time.
	2. This application rarely experiences interruptions or system problems.
	3. This application works quickly and efficiently when it's needed.
Perceived usefulness (PU)	1. This application can increase company productivity.
	2. This application can improve the quality of operational services.
	3. This application is useful for maintaining work performance faster.
	4. This application can reduce operational costs.
Perceived ease of use (PEU)	1. I can easily interact with the ISO application
	2. I believe this application is easy to learn and use
Attitude toward Use (A)	1. I feel this application is handy for me
	2. It is enjoyable for me to use this application
Intention to use (IU)	1. I am interested in using this application often in the future
	2. I like using this application because it fits the prevailing culture in my work environment
Actual use (AU)	1. My unit has actively used this application.
	2. My unit has started using this application for operational services.
	3. The company has substantially used this application in manufacturing.

IV. RESULT AND ANALYSIS

The research data are obtained from a survey by distributing questionnaires to employees of the Maintenance Division and Production Division at the Ebako company, a total of 31 people who directly used the Internal Service Order (ISO) application. This unique perspective provides a detailed understanding of the application's usage. Table 2 shows the distribution of demographic data and characteristics of respondents. The fact that 68% of the respondents were male is significant, as it defines that male workers mostly use ISO applications in the manufacturing work environment. This is possible because this research case study is specifically a unit involving technical work where the study found a very high level of male participation in this domain [31]. This finding could have implications for gender diversity in technical roles within the manufacturing industry.

The ISO technology adaptation process can be categorized as still having potential because most of the respondents are of productive age (31-50 years old) although the involvement of young age groups is minimal. In addition, the limited academic background also affects the respondents' ability to understand and use the application optimally. From the respondents' last level of education, 61% of them mostly have a high school education, which reflects that the proportion of respondents with higher education is also very minimal. This indicates the need for a competency improvement strategy, especially technological literacy, to support better and optimal adaptation. This strategy could involve targeted training programs or educational initiatives to enhance the technical skills of the workforce.

The data in Table 2 shows that the Internal Service Order (ISO) application has been functioning and running at the operational level as seen by 90% of employees at the technician level who have actively used this technology. However, managerial-level participation can also be an issue that hinders strategic supervision if their role is minimal towards the application. This means that if managers are not actively involved in the use and oversight of the ISO application, it could lead to a lack of strategic direction and control over its implementation and use.

TABLE II. USER'S DEMOGRAPHICS

Characteristics	Maintenance Unit	Production Unit	Total	Percentage
Gender				
Male	16	5	21	68%
Femal		10	10	32%
Age				
17 – 30	3	5	8	26%
31 – 40	6	5	11	35%
41 – 50	6	5	11	35%
51 – 60	1		1	3%
Last Education				
Senior High School equivalent	9	10	19	61%
Diploma	1	4	5	16%
Bachelor	4	1	5	16%
Master	2		2	6%
Job Level				
Manager	2	1	3	10%
Officer / Technician	14	14	28	90%

In the analysis process, all respondent data is processed using SmartPLS to test data validity and data reliability. From the data in Table 3, all variable indicators were found with a Cronbach's value > 0.60 and a correlation between statement items ≥ 0.7. From these findings, each questionnaire statement item in this study was concluded to be reliable for use as a research instrument. The composite reliability test value (CR) also proves and strengthens the test results that all variables in the model meet the validity criteria seen from the correlation

p-ISSN 2301-7988, e-ISSN 2581-0588
DOI : 10.32736/sisfokom.v14i1.2371, Copyright ©2025
Submitted : January 6, 2025, Revised : January 16, 2025, Accepted : January 24, 2025, Published : January 31, 2025

value in Table 4.

TABLE III. VALIDITY AND RELIABILITY RESULTS

Indicator	Average Score	Item Correlation	Result	Cronbach Alpha	Result
IQ1	4.516	0.785	valid	0.889	Reliable
IQ2	4.129	0.940	valid		
IQ3	4.000	0.886	valid		
IQ4	3.935	0.852	valid		
H1	4.335	0.857	valid	0.838	Reliable
H2	4.290	0.846	valid		
H3	4.387	0.875	valid		
H4	4.290	0.701	valid		
SQ1	4.129	0.805	valid	0.781	Reliable
SQ2	3.935	0.795	valid		
SQ3	4.258	0.891	valid		
PU1	4.452	0.872	valid	0.912	Reliable
PU2	4.387	0.938	valid		
PU3	4.452	0.926	valid		
PU4	4.258	0.820	valid		
PEU1	4.484	0.918	valid	0.827	Reliable
PEU2	4.419	0.929	valid		
A1	4.419	0.939	valid	0.870	Reliable
A2	4.226	0.943	valid		
IU1	4.355	0.970	valid	0.935	Reliable
IU2	4.129	0.967	valid		
AU1	4.226	0.917	valid	0.836	Reliable
AU2	4.194	0.929	Valid		
AU3	4.129	0.753	Valid		

In Table 4, respondents' feedback on the adaptation of the use of the Internal Service Order (ISO) application from each variable, namely attitude towards system use (A), actual use (AU), Habit (H), information quality (IQ), user intention (IU), perceived ease of system use (PEU), perceived usefulness (PU), and system quality (SQ) shows that the composite reliability estimate results obtained from the bootstrapping process are stable and consistent with each variable value <0.05.

TABLE IV. COMPOSITE RELIABILITY (CR)

Variable	Composite Reliability Value
Actual Use (AU)	0.903
Attitude towards Use (A)	0.939
Habit (H)	0.893
Information Quality (IQ)	0.924
User Intention (IU)	0.968
Perceived Ease of Use (PEU)	0.920
Perceived Usefulness (PU)	0.938
System Quality (SQ)	0.870

TABLE V. DISCRIMINANT VALIDITY (DV)

Var	Discriminant Validity							
	AU	A	H	IQ	IU	PEU	PU	SQ
AU	0.870							
A	0.724	0.941						
H	0.695	0.728	0.823					
IQ	0.582	0.798	0.781	0.868				
IU	0.732	0.933	0.764	0.842	0.969			
PEU	0.773	0.808	0.778	0.721	0.811	0.923		
PU	0.741	0.752	0.769	0.714	0.791	0.864	0.890	
SQ	0.571	0.744	0.799	0.813	0.764	0.736	0.714	0.832

The empirical research model analysis results by applying the Partial Least Square (PLS) approach are shown in Figure 5 and Table 5. Figure 5 shows the correlation between variables, with each indicator representing latent variables. In the model used, three external factors will be analyzed and tested for their influence on the acceptance of ISO application technology at PT Ebako Nusantara: information quality factors on the system, system quality factors, and user habits. Each factor is positively correlated with indicators of perceived ease of use of the system. Several hypotheses in the research model (Figure 3) show that eight of the nine hypotheses tested have a significant impact with a p-value <0.05.

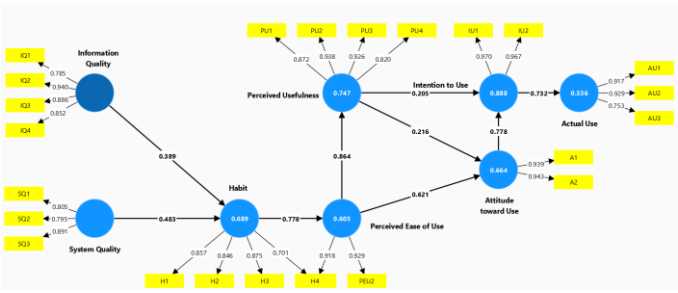

Fig. 5. Correlation Variables in extended TAM

First, hypothesis H1 (IQ → H) is rejected as it shows information quality does not impact on user habits (p-value 0.062) even though information quality (IQ) is positively correlated to application user habits (0.389). According to a survey conducted on all ISO application user employees, 19% of employees still feel inaccurate information, such as unclear details and images of product damage, notification problems, and lack of information on the progress of ongoing repairs. This allows the influence of the information quality factor to be relatively low for users as a reason to get used to using the ISO application. On the other hand, the p-value of hypothesis H2 (SQ → H) is 0.020, which indicates there is a significant effect of system quality on user habit. This finding strengthens the hypothesis that ISO application quality factors directly contribute to improving user habits. The p-value of H2 is also in line with the positive correlation between the system quality variable and the user habit factor (0.483), meaning that the Internal Service Order (ISO) application is included in the system quality factor, including reliability both from the stability, speed, and security of the system to encourage each employee to use the system more often and habitually.

The data testing results also prove the hypothesis H3 (H→PEU) has a significant effect (coefficient value 0.778, p-value 0.000), so it is concluded that user habits (H) have a dramatic effect on user experience when adapting to new technology. In this case, employees who are accustomed to using ISO applications will find it easier to use the application when used on an ongoing basis. This user habit will ultimately affect the ease of use and automatically also affect the perceived usefulness of the application (coefficient value 0.864 with t-statistic 17.474 and p-value 0.000) and even user attitudes (coefficient value 0.621, t-statistic = 2.481, p-value = 0.013). This user habit may also result from encouragement from the work environment, including people who are considered important in the organization, to adopt the technology[32]. This means that in addition to the application being perceived as easy

p-ISSN 2301-7988, e-ISSN 2581-0588
DOI : 10.32736/sisfokom.v14i1.2371, Copyright ©2025
Submitted : January 6, 2025, Revised : January 16, 2025, Accepted : January 24, 2025, Published : January 31, 2025

to use, the role of superiors or colleagues who initiate the use of this application can also affect the perceived ease of use and usefulness of technology. These results support that hypotheses H4 (PEU → PU) and H5 (PEU→A) are also valid where ease of use positively affects application usability and user attitude.

However, the results of testing the perceived usefulness factor in hypotheses H6 (PU→IU) and H7 (PU→A) reveal a different effect. The perceived usefulness factor has a significant but relatively low impact, with a coefficient value of 0.205 and a p-value of 0.014. This suggests that perceived usefulness has a smaller influence on user intentions and does not even show significance on user attitudes (coefficient 0.216, t-statistic = 0.947, p-value = 0.344), leading to the rejection of H7.

TABLE VI. DIRECT EFFECT ANALYSIS RESULTS

Hypothesis	*Coefficient*	t-statistic	p-value	Results
H1 : IQ→H	0.389	1.873	0.062	rejected
H2 : SQ→H	0.483	2.337	0.020	accepted
H3 : H→ PEU	0.778	10.131	0.000	accepted
H4 : PEU→PU	0.864	17.474	0.000	accepted
H5 : PEU→A	0.621	2.481	0.013	accepted
H6 : PU→IU	0.205	2.453	0.014	accepted
H7 : PU→A	0.216	0.947	0.344	rejected
H8 : A→ IU	0.778	9.291	0.000	accepted
H9 : IU→AU	0.732	7.854	0.000	accepted

This implies that users' attitudes towards technology are influenced not only by perceived usefulness but also by other variables such as trust in the system, user satisfaction, and previous interaction experience. In a manufacturing environment, the benefits of technology (such as increased productivity) may not be perceived directly by individuals, but rather at an organizational level. This may mean that perceived benefits are not directly related to individual attitudes towards the technology.

Meanwhile, the results of hypotheses H8 (A→IU) and H9 (IU→AU) are both significant, with coefficients of 0.778 and 0.732 respectively (p-value 0.000). These results indicate that the user attitude factor has a strong influence on usage intention, and user intention directly affects the actual usage of the application. This analysis aligns with the Technology Acceptance Model modeling concept, which defines positive user attitudes toward technology as driving the technology adoption process.

In conclusion, the three external variables added to the traditional TAM significantly influence Internal Service Order (ISO) application usage. The application is proven to be used on an ongoing basis, especially in the Production Division and Maintenance Division at PT Ebako Nusantara, which significantly improves the performance of each employee involved. The success of these factors affects the perceived ease of adopting the ISO application, thereby triggering the user's intention to continue using the application. Notably, ISO application users at PT Ebako Nusantara are predominantly men aged 31-50, with an average high school education. Given this demographic, it is crucial for the company to design an intuitive and user-friendly interface for users over 40 and to simplify the features to accommodate their potentially limited technical understanding. This will support more optimal adaptation and enhance the application's usability.

The high and low quality of information in ISO applications is measured by relevance, accuracy, and availability. This application has good information quality but does not affect user habits. This is due to differences in user education levels that affect user understanding of the information in the application, as well as the availability of some information that has not been detailed to answer user needs so that it tends to affect the confidence of some users in the usefulness of this ISO application. This possibility can be seen from the IQ4 statement in Table 3 (mean = 3.935), which received a relatively low response, indicating that users feel the information available is not correct. This fact was also found in previous research [33], which explains that quality information on a system becomes a factor that significantly affects users with high experience and sufficient educational competence. If the quality of information (in this case, such as repair work time, complete detailed information about machine or device damage in production operations, and other important information) is accurate and relevant, it can increase the perception that technology helps maximize user performance.

On the other hand, the highest statement response (mean = 4.484) is that it is easy for users to interact with the ISO application, indicating that the design of the application design is adequate so that users can easily interact with this application. However, it is necessary to consider evaluating the technical infrastructure to speed up the application response time. In addition, based on the survey 25% of employees suggested the addition of several features such as the provision of notifications and the progress feature of the ongoing repair process where these two features help provide information for employees to achieve the completion of work targets. Overall, this study's results answer hypotheses in the proposed ETAM model, a model that extends the traditional TAM by adding three additional variables that are positively correlated and influential to the TAM model. However, the insignificant hypothesis H7 indicates the relationship between perceived usefulness and user attitude requires further analysis in the future by considering additional variables such as trust. Perceived usefulness and satisfaction need to be considered from the user's point of view to find out the benefits that are directly felt by the users one of which is affected by the quality of information. This will increase the user's trust that the system provides significant value, thus increasing the user's use of the system.

The factors analyzed include information quality, system quality and user habits, but do not consider other factors such as confidence in the technology, management support or individual motivation. As a result, the model does not fully capture the complex dynamics of technology adoption in a manufacturing environment. This study was also limited to one manufacturing company in Indonesia, so the results are highly contextual and may not apply to other companies with different organizational structures, work cultures or technologies in other regions. In addition, the small sample size of 31 respondents also reduces the ability to generalize the results to a wider population.

p-ISSN 2301-7988, e-ISSN 2581-0588
DOI : 10.32736/sisfokom.v14i1.2371, Copyright ©2025
Submitted : January 6, 2025, Revised : January 16, 2025, Accepted : January 24, 2025, Published : January 31, 2025

The adoption ISO applications in manufacturing can be a solution that improves operational performance. This is achieved by ensuring the quality of the information and systems developed and, importantly, by encouraging employees to use the system through regular and continuous training. This training helps build user habits when applying the technology, improving the overall user experience and system adoption.

V. CONCLUSION

This research goal is to extend and evaluate a robust model that empirically elucidates how information quality factors in a system, system quality factors, and user habit factors influence user perspectives on system use. This model, we believe, has the potential to significantly influence user adoption of a system in a sustainable manner, thereby making a substantial contribution to the field of information systems and technology adoption.

System quality positively influences user habits in using technology to determine its usefulness. On the other hand, the results show that the quality of information does not significantly affect users' habits of using the application when the quality of the system is simple and makes it easy for users with a wide age range to get used to new technology. In this case, the external factor of user habits is a good predictor in measuring the ease of use manufacturing systems. This factor becomes very important if the quality of the qualified system supports it. The Internal Service Order (ISO) application is still a new system in PT Ebako Nusantara, so several functions and features still require users to perform new tasks, such as monitoring the repair of production machines.

Some specific suggestions that are applied to improve the quality of information in ISO applications include improving the accuracy of information by adding detailed descriptions to machine damage information. Details include not only images, but also full technical explanations so that users can properly understand the condition of the damage. In addition, repair status updates should be provided in real time to increase transparency in the repair process. This can be supported by implementing automatic notification features such as repair deadlines and the status of completed or ongoing repairs. User training also plays a key role in improving application usage. This should be carried out to improve technological literacy, especially for employees with lower levels of education. On the other hand, to ensure that the application remains relevant to user needs, regular evaluation by the management team through surveys or periodic discussions is also necessary. This allows organisations to identify missing or missing features in the app, which can then be incorporated into the development of new features, ensuring that the app continues to evolve as needed. In addition, an analytics dashboard that summarises key data such as average repair time and service request status can help users monitor the performance of the app. In the future, the app can also integrate AI technology to predict potential breakdowns based on usage and repair history, so that preventative action can be taken earlier.

Moreover, it's crucial that application developers review and enhance the system to ensure that ISO applications can effectively meet the needs of their users. This is particularly important in terms of maximizing the system's flexibility, accuracy, and security. Additionally, our proposed model suggests the inclusion of trust factors as new predictors to test system usage and user satisfaction, further underlining the need for continuous system improvements.

REFERENCES

[1] U. Chotijah and F. Retrialisca, "Analysis of Information Technology Readiness in Furniture Business in Indonesia," *Indones. J. Inf. Syst.*, vol. 3, no. 1, pp. 14–22, 2020, doi: 10.24002/ijis.v3i1.3470.

[2] T. Suryawijaya and M. Safitri, "Angkut.in: The Future of Trucking by Digital Product Design Journey," *Ajie*, vol. 08, no. 01, pp. 30–39, 2024, doi: 10.20885/ajie.vol8.iss1.art5.

[3] N. Ullah, W. Mugahed Al-rahmi, and A. Alkhalifah, "Predictors for distributed ledger technology adoption: integrating three traditional adoption theories for manufacturing and service operations," *Prod. Manuf. Res.*, vol. 9, no. 1, pp. 178–205, 2021, doi: 10.1080/21693277.2021.1976963.

[4] A. Syafira, W. Puspitasari, and W. Witjaksono, "Analysis and Evaluation of User Acceptance on the Use of Enterprise Resource Planning (ERP) Systems at PT Trisco Tailored Apparel Manufacturing," *IJAIT (International J. Appl. Inf. Technol.*, vol. 04, no. 01, p. 17, 2021, doi: 10.25124/ijait.v4i01.2852.

[5] A. Saifunnasrullah and K. Budiman, "Digital Transformation Analysis in the Manufacturing Module in Aluminium Companies using the TAM Method," *J. Adv. Inf. Syst. Technol.*, vol. 5, no. 1, pp. 49–63, May 2023, doi: 10.15294/jaist.v5i1.66567.

[6] J. Simangunsong, N. Hutagaol, and F. A. Pasaribu, "Implementasi Aplikasi Internal Service Order (ISO) Berbasis Web pada Perusahaan Manufaktur Furniture," *J. Inform. J. Pengemb. IT*, vol. 9, no. 2, pp. 151–163, 2024, doi: 10.30591/jpit.v9i2.6813.

[7] E. Skorupińska, M. Hitka, and M. Sydor, "Surveying Quality Management Methodologies in Wooden Furniture Production," *Systems*, vol. 12, no. 2, pp. 1–17, 2024, doi: 10.3390/systems12020051.

[8] N. Okyay, S. Kes, F. Işık, and A. T. Uzun, "Development of Smart Software Program for Production and Order Tracking in the Textile Industry," *Eur. J. Res. Dev.*, vol. 4, no. 2, pp. 168–173, 2024, doi: 10.56038/ejrnd.v4i2.449.

[9] G. Ahn and S. Hur, "Multiobjective Real-Time Scheduling of Tasks in Cloud Manufacturing with Genetic Algorithm," *Math. Probl. Eng.*, vol. 2021, 2021, doi: 10.1155/2021/1305849.

[10] T. P. Mabotja and Winiswa Mavutha, "Effect of Lean Six Sigma on order fulfilment process: evidence from manufacturing companies in Gauteng, South Africa," *Int. J. Res. Bus. Soc. Sci. (2147- 4478)*, vol. 13, no. 3, pp. 54–65, 2024, doi: 10.20525/ijrbs.v13i3.2952.

[11] M. Hsu, "An Analysis of Intention to Use in Innovative Product Development Model through TAM Model," *EURASIA J. Math. Sci. Technol. Educ.*, vol. 12, no. 3, pp. 487–501, Jun. 2016, doi: 10.12973/eurasia.2016.1229a.

[12] Christine and N. Legowo, "Evaluation of Policy Processing System Using Extended UTAUT Method at General Insurance Company," *Proc. 2018 Int. Conf. Inf. Manag. Technol. ICIMTech 2018*, no. September, pp. 172–177, 2018, doi: 10.1109/ICIMTech.2018.8528113.

[13] J. Chin and S. C. Lin, "A behavioral model of managerial perspectives regarding technology acceptance in building energy management systems," *Sustain.*, vol. 8, no. 7, 2016, doi: 10.3390/su8070641.

[14] M. Ramkumar, T. Schoenherr, S. M. Wagner, and M. Jenamani, "International Journal of Production Economics Q-TAM : A quality technology acceptance model for predicting organizational buyers ' continuance intentions for e-procurement services," *Intern. J. Prod. Econ.*, vol. 216, no. March 2018, pp. 333–348, 2019, doi: 10.1016/j.ijpe.2019.06.003.

[15] M. Turner, B. Kitchenham, P. Brereton, S. Charters, and D. Budgen, "Does the technology acceptance model predict actual use? A systematic literature review," *Inf. Softw. Technol.*, vol. 52, no. 5, pp. 463–479, 2010, doi: 10.1016/j.infsof.2009.11.005.

[16] S. Hu, "A Conceptual Development of Digital Trade Adoption among

p-ISSN 2301-7988, e-ISSN 2581-0588
DOI : 10.32736/sisfokom.v14i1.2371, Copyright ©2025
Submitted : January 6, 2025, Revised : January 16, 2025, Accepted : January 24, 2025, Published : January 31, 2025

Manufacturing Companies in China: A Technology Acceptance Model Approach," *J. Digit. Realis. Mastery*, vol. 3, no. 02, pp. 76–80, 2024, doi: 10.56982/dream.v3i02.213.

[17] D. Cao, H. Tao, Y. Wang, A. Tarhini, and S. Xia, "Acceptance of automation manufacturing technology in China: an examination of perceived norm and organizational efficacy," *Prod. Plan. Control*, vol. 31, no. 8, pp. 660–672, 2020, doi: 10.1080/09537287.2019.1669091.

[18] S. Laumer, C. Maier, and T. Weitzel, "Information quality, user satisfaction, and the manifestation of workarounds: A qualitative and quantitative study of enterprise content management system users," *Eur. J. Inf. Syst.*, vol. 26, no. 4, pp. 333–360, 2017, doi: 10.1057/s41303-016-0029-7.

[19] W. Kurniawan and D. N. Utama, "Culture-Based TAM for Analyzing the Implementation of Building Management System," *J. Syst. Manag. Sci.*, vol. 13, no. 6, pp. 368–383, 2023, doi: 10.33168/JSMS.2023.0622.

[20] S. A. Kamal, M. Shafiq, and P. Kakria, "Investigating acceptance of telemedicine services through an extended technology acceptance model (TAM)," *Technol. Soc.*, vol. 60, no. March 2019, 2020, doi: 10.1016/j.techsoc.2019.101212.

[21] L. Reza, S. Sunardi, and H. Herman, "Penilaian Sistem Informasi Akademik Dengan Metode Technology Acceptance Model," *Fountain Informatics J.*, vol. 7, no. 1, p. 31, 2021, doi: 10.21111/fij.v7i1.6393.

[22] L. Yusrini, N. Eviana, Maeenuddin, R. Dorbala, and R. Darmadi, "Understanding the Acceptance of Digital Marketing Among Tour Operators: An Empirical Study," *African J. Hosp. Tour. Leis.*, vol. 13, no. 1, pp. 183–191, 2024, doi: 10.46222/ajhtl.19770720.496.

[23] Y. S. Yen and F. S. Wu, "Predicting the adoption of mobile financial services: The impacts of perceived mobility and personal habit," *Comput. Human Behav.*, vol. 65, pp. 31–42, 2016, doi: 10.1016/j.chb.2016.08.017.

[24] S. Petter, W. Delone, and E. R. McLean, "Information systems success: The quest for the independent variables," *J. Manag. Inf. Syst.*, vol. 29, no. 4, pp. 7–62, 2013, doi: 10.2753/MIS0742-1222290401.

[25] W. H. DeLone and E. R. McLean, "The DeLone and McLean model of information systems success: A ten-year update," *J. Manag. Inf. Syst.*, vol. 19, no. 4, pp. 9–30, 2003, doi: 10.1080/07421222.2003.11045748.

[26] N. Aeni Hidayah, N. Hasanati, R. Novela Putri, K. Fiqry Musa, Z. Nihayah, and A. Muin, "Analysis Using the Technology Acceptance Model (TAM) and DeLone McLean Information System (DM IS) Success Model of AIS Mobile User Acceptance," *2020 8th Int. Conf. Cyber IT Serv. Manag. CITSM 2020*, 2020, doi: 10.1109/CITSM50537.2020.9268859.

[27] M. Ashfaq, J. Yun, S. Yu, and S. M. C. Loureiro, "I, Chatbot: Modeling the determinants of users' satisfaction and continuance intention of AI-powered service agents," *Telemat. Informatics*, vol. 54, no. April, p. 101473, 2020, doi: 10.1016/j.tele.2020.101473.

[28] E. Edeh, W.-J. Lo, and J. Khojasteh, *Review of Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook*, vol. 30, no. 1. 2023. doi: 10.1080/10705511.2022.2108813.

[29] K. Kumar, "Partial Least Square (PLS) Analysis," *Resonance*, vol. 26, no. 3, pp. 429–442, 2021, doi: 10.1007/s12045-021-1140-1.

[30] F. Rafique, Hamaad., Shamim, Azra., Anwar, "Investigating Acceprance of Mobile Library Application with Extended Rechnology Acceptance Model (TAM)," *Elzeiver Ltd*, pp. 1–21, 2019.

[31] J. E. Yavorsky and J. Dill, "Unemployment and men's entrance into female-dominated jobs," *Soc. Sci. Res.*, vol. 85, p. 102373, 2020, doi: 10.1016/j.ssresearch.2019.102373.

[32] S. P. Mohanty, A Bhijit;Mishra, "An Investigation on the Application of the Technology Acceptance Model (TAM) to Evaluate the Adoption of ERP Solutions in MSMEs of Odisha," *Int. J. Sci. Res.*, vol. 7, no. 11, pp. 94–101, 2018, doi: 10.21275/ART20192478.

[33] S. Chatterjee, N. P. Rana, Y. K. Dwivedi, and A. M. Baabdullah, "Understanding AI adoption in manufacturing and production firms using an integrated TAM-TOE model," *Technol. Forecast. Soc. Change*, vol. 170, no. November 2020, p. 120880, 2021, doi: 10.1016/j.techfore.2021.120880.

p-ISSN 2301-7988, e-ISSN 2581-0588
DOI : 10.32736/sisfokom.v14i1.2371, Copyright ©2025
Submitted : January 6, 2025, Revised : January 16, 2025, Accepted : January 24, 2025, Published : January 31, 2025