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Optimizing Customer Satisfaction: Unveiling the Impact of ARIS Tool Implementation

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ABSTRACT

The development of Information Systems and Information Technology in a fast time makes companies mutually competitive by using the implementation of Information Technology. PT.XYZ is a company that runs an integrated energy business from upstream to downstream. In its capacity as a holding company in the energy sector according to the decree of the Minister of SOE dated June 12, 2020, in general, the business focus of PT.XYZ is carrying out portfolio management activities and business synergies throughout PT.XYZ group, accelerate new business development, as well as run national programs. The method used in the analysis of this case study is the model of Delone and McLean modicfied with TAM model.Respondents of this study consisted of 270 people with the condition of having used the ARIS application.Data testing will be performed using SMART-PLS.This analysis was conducted to measure how much the level of user satisfaction ARIS application. Based on data collection techniques, this study is a descriptive quantitative research. Variables used in this study are System Quality,Information Quality,Service Quality,Perceived Usefulness,and Perceived Ease of Use.The results of this study are Information Quality and Service Quality has a positive effect on user satisfaction.

Keywords:
IS Success Model, TAM, ARIS, User Satisfaction

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1. Introduction

The rapid evolution of information systems and information technology has led companies to compete by implementing these technologies. A technical definition of information systems portrays them as interconnected devices that collect, process, store, and distribute information for decision-making and control within an organization. Enterprise Architecture (EA) plays a crucial role in aligning business and IT systems, yet many companies struggle with its implementation. EA serves as a management tool to visualize the interaction between various components in a company, using an architectural approach. The primary goal of EA implementation is business and IT alignment, aiming to yield numerous benefits. The ARIS Tool, an integral part of EA, aids organizations in identifying, designing, and optimizing their business processes. It facilitates the creation of structured and detailed process models, including actors, activities, information flows, decisions, and technology systems involved. ARIS Tool's visual modeling features simplify understanding and collaboration in designing or modifying business processes. Additionally, its simulation and performance analysis capabilities provide insights into process efficiency and effectiveness before actual implementation, making it a powerful tool for improving operational quality and productivity.

In the context of PT XYZ, a leading energy company, the organization harnesses the ARIS Tool within its Architecture Policy & Governance (APG) division. This division is pivotal for regulating and managing information technology (IT) architecture and information systems within the company. ARIS Tool plays a crucial role in achieving these objectives, empowering PT XYZ to identify, design, and optimize its business processes more effectively. The APG division ensures that IT supports the company's business operations, complies with regulations, and follows best practices in IT architecture management. The assessment of user satisfaction with the ARIS Tool becomes fundamental for EA, as it helps evaluate whether users across different divisions at PT XYZ are content with the tool. Understanding potential challenges or obstacles in its usage is key to identifying areas for improvement. This evaluation assists the APG division and the company as a whole in continuously enhancing the tool's utilization to support PT XYZ's vision and mission in the rapidly evolving energy industry.

2. Literature Review

Information Systems

According to O'brien & Marakas (2010), a system is a group of components working together towards a common goal, receiving input, and producing output through an organized transformation process. On the other hand, Jogianto, as cited in Jeperson (2014), defines a system as a collection of interacting elements aimed at achieving a specific goal, portraying real events and tangible entities such as places, objects, and people that truly exist and occur. In terms of information, Coronel & Morris (2015) describe it as the result of processed raw data, providing meaningful and useful outcomes. O'brien & Marakas (2010) further elaborate that information is data transformed into a context that holds significance for a specific end user. As for Information Systems, Oz (2009) defines it as a collection of interrelated components that gather, process, store, and generate information needed to support business activities. Meanwhile, Boell & Cecez (2015) highlight that Information Systems (IS) involve various Information Technologies (IT) such as computers, software, databases, communication systems, the Internet, mobile devices, and more, to perform specific tasks, interact with, and inform various actors in different organizational or social contexts.

Technology Acceptance Model (TAM) Model

The Technology Acceptance Model (TAM), introduced by Davis in 1986, serves as a theory explaining User Acceptance Behavior, rooted in Social Psychology Theory (Ma & Liu, 2011). TAM has gained substantial attention and empirical support over the past decade, with approximately 100 studies published between 1989 and 2001 (Davis, 1989; Mathieson, 1991; Taylor & Todd, 1995a). Prior research on TAM aimed to comprehend factors influencing technology acceptance and adoption by users, based on Davis's theoretical framework from 1989. Surveys were conducted among specific technology user groups, collecting data on their perceptions of the usefulness and ease of use of the technology. The findings highlighted the significant contributions of perceived usefulness and ease of use to users' intentions to accept and adopt the technology. This early research deepened understanding of the psychological and perceptual factors shaping technology acceptance, laying a strong foundation for further exploration of user behavior across diverse usage contexts.

In an extensive study, TAM was tested with varying sample sizes and user groups within or across organizations, analyzed using different statistical tools, and compared with competing models (Gefen, 2000). It was applied to various end-user technologies such as email, word processors, groupware, spreadsheets, and the World Wide Web. TAM's benefits include perceived usefulness and ease of use as two key factors influencing individuals' attitudes toward technology use (Hsu & Chang, 2012). Unlike other models, TAM is considered parsimonious, grounded in a robust theoretical foundation, empirically supported, and specific to information technology (Mahinda & Whitworth, 2005). Some studies have expanded TAM by incorporating additional predictors like gender, culture, experience, and self-efficacy. Overall, researchers tend to affirm that TAM is valid, parsimonious, and robust (Venkatesh & Davis, 2000). Davis (1989) developed and validated scales for Perceived Ease of Use (PEOU) and Perceived Usefulness (PU), identifying six highly reliable items for each construct with Cronbach's Alpha scores of .98 for PU and .94 for PEOU. Subsequent studies varied in the measurement items for these constructs, leading to an increase in cumulative items to measure PU from the original six to about 50, and for PEOU, from six to 38 (Adams et al., 1992; Adams et al., 1992a).

Delone and McLean's Information Systems Success Model

In 1992, DeLone and McLean introduced a model that delineates the success or failure of an Information System (IS). Building upon earlier research models, their proposed model encompasses six interconnected success factors: Information Quality, System Quality, Use, User Satisfaction, Individual Impact, and Organizational Impact. The model, depicted in Figure 2.2, reflects an update from 2003, wherein DeLone and McLean added the Intention to Use indicator to Use and transformed Individual Impact and Organizational Impact into Net Benefits.

System Quality refers to the extent of user-friendly and disruption-free system usage, indicative of the quality derived from the capabilities of the software and hardware employed. It is often represented by user ease-of-use perceptions, capturing the foundation of system quality. The elements considered for measuring system quality include response time, user friendliness, availability, integration, and ease-of-use. According to DeLone and McLean, system quality is measured by the availability, reliability, adaptability, and response time of the system.

Information Quality is defined as the desired characteristics of the output or information system output. DeLone and McLean (1992) characterize information quality as a measurement of the results of information. It encompasses the creation of relevant and accurate information, including precision, accuracy, timeliness, and conciseness.

Measurement steps for information quality include understandability, relevance, currency, precision, accuracy, usefulness, format, and security.

Service Quality involves comparing perceptions or expectations regarding the system's service with the service provided. It can be interpreted as the support received by users from the IS organization and technical personnel. Quality of service can be measured by the ability to solve problems when users encounter issues. Factors considered for measuring service quality include assurance, reliability, responsiveness, and competence.

Customer Satisfaction is defined as the user's response to the usefulness of the system output. It can also be described as the user's satisfaction level with the system used. Achieving user satisfaction occurs when customers believe that the system can help them in a satisfying manner, differentiating products, and building strong user relationships.

Intention to Use is viewed as the user's intention, with 'use' representing the user's actions in operating or learning the system. Usage measurement consists of frequency of use, self-reported use, and actual use. Different measurement approaches can yield various results.

Net Benefits, as defined by DeLone and McLean (2008), analyzes the extent to which an information system contributes to the success of individuals, groups, organizations, industries, and countries. The measurement of net benefits uses the sum of net benefits for individual and organizational analysis.

Factors influencing satisfaction

Perceived Usefulness is a dimension that revolves around productivity, job performance, efficiency, and effectiveness to meet user expectations and needs in facilitating work, saving time, problem-solving, and expediting task completion (Kalankesh et al., 2020). The indicators of perception assess the extent to which stakeholders believe that using a specific system enhances their job performance or the performance of their group or organization (Mtebe & Raphael, 2018). Perceived usefulness has been widely used in information system and technology research, garnering strong empirical support as a predictor in technology adoption.

The utility of a system serves as a fundamental driver of user intent to use the system; hence, it is crucial to understand the determinants of the perceived usefulness dimension and its influence as users gain experience over time (Sachan et al., 2018). Personal perceptions of consumers or the public regarding a particular technology may enhance or advance user performance quality and likely play a crucial role in influencing consumer satisfaction levels. Previous studies have found that perceived usefulness significantly influences user satisfaction with a system (Mtebe & Raphael, 2018) (Wilson et al., 2021).

Perceived Ease of Use is an individual's perception of the effort they exert to use information technology. The perceived ease of use by a user towards a technology or product indicates expectations regarding the amount of effort required to use a system or product to achieve a specific outcome (Ghazal et al., 2018). Customers tend to prefer learning the specifications and features of a standard product more easily and quickly than having to comprehend a product with different components. When users consider acquiring a product or learning a system that is challenging to understand and learn, they are less likely to purchase or engage with that product or system again, seeking alternative solutions instead (Wilson et al., 2021). User satisfaction levels increase when users believe that the new technology or product they are using is easy to learn or understand. Several studies have found that perceived ease of use has a significant impact on user satisfaction (Sachan et al., 2018) (Wilson et al., 2021).

Previous Research

Several previous studies served as references for the development of this thesis. The research conducted is not limited solely to assessing system success using the Delone & McLean method. Here are some studies that were used as references in the preparation of this thesis:

The first study, conducted by Fera Mardiana and Rose Rahmidani (2020), titled "The Influence of Price, Trust, and Company Image on Customer Loyalty of Kurnia Bus Company (PO. Kurnia) on the Padang-Medan Route," published in the Ecogen Journal, Faculty of Economics, Universitas Negeri Padang, discusses the impact of price, trust, and company image on customer loyalty to PO. Kurnia. Customer loyalty is crucial for a company because it leads to repeat purchases of a company's products/services. The study aims to determine the influence of price, trust, and company image on customer loyalty in the Kurnia bus company (PO. Kurnia) on the Padang-Medan route.

The second study, conducted by Aris Fatoni and Deffi Hardianti (2020), titled "The Influence of Facilities and Service Quality on the Decision to Use MRT Transportation Services (Study on Consumers in Jakarta Province)," published in the Mediastima Journal, Faculty of Social & Political Sciences, Institut Bisnis dan Informatika Kosgoro 1957, investigates the influence of facilities and service quality on the decision to use MRT Jakarta transportation services. The study aims to determine the impact of facilities and service quality on the decision to use MRT Jakarta transportation services.

The third study, conducted by Leinda Mumek, Johny Tampi, Lucky Tamengkel (2020), titled "Service Quality on Customer Satisfaction of PT. Garuda Indonesia Airlines Economy Class on the Manado-Jakarta Route," published in the Productivity Journal, Faculty of Social and Political Sciences, Universitas Sam Ratulangi, focuses on service quality's impact on customer satisfaction with PT. Garuda Indonesia Airlines Economy Class on the Manado-Jakarta route. The difference between the study on "Customer Satisfaction Evaluation in the Use of ARIS Tool at PT XYZ" and previous research on the Technology Acceptance Model (TAM) lies in their goals and research focus. In the study on "Customer Satisfaction Evaluation in the Use of ARIS Tool at PT XYZ," the primary goal is to evaluate the level of customer satisfaction, particularly related to the use of the ARIS Tool at PT XYZ. The study focuses on assessing customer satisfaction using the ARIS Tool, involving PT XYZ users as the main respondents. Data is collected through various methods, such as surveys, interviews, or direct observations, to understand customer perceptions of the ARIS Tool usage experience. The research may also explore factors influencing customer satisfaction, including service quality, technical support, user comfort levels with the ARIS Tool, and the effectiveness of the ARIS Tool in meeting customer needs. Meanwhile, previous TAM research focused more on the general acceptance and adoption of technology, identifying factors influencing user intentions to accept and use technology. This research does not specifically focus on the use of the ARIS Tool at PT XYZ but is more theoretical and conceptual in exploring the technology acceptance model in a general context. Therefore, the main difference between the two studies lies in their goals and focus. The study on "Customer Satisfaction Evaluation in the Use of ARIS Tool at PT XYZ" is more specific and focuses on the user experience of the ARIS Tool in a particular company, while previous TAM research is more theoretical and broader in the context of general technology acceptance.

3. Method, Data, and Analysis

PT.XYZ, as a prominent holding company in the energy sector, has been steadfast in its commitment to provide and develop energy, including new and renewable sources, contributing significantly to Indonesia's energy self-sufficiency. Established in June 2020 by the Ministry of State-Owned Enterprises, PT XYZ oversees six subholdings within the energy

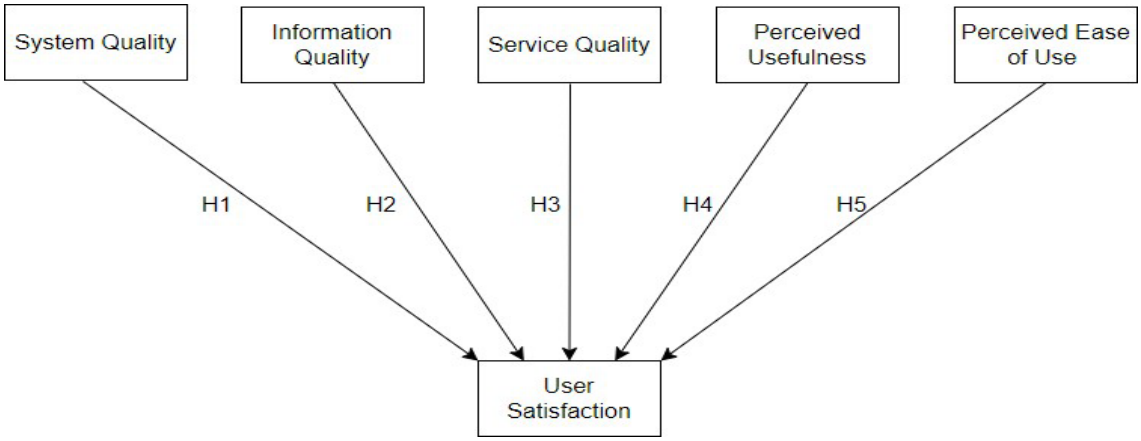
domain. This pivotal role signifies a new era in the company's business trajectory, building on over six decades of actively meeting Indonesia's energy needs and those of various international regions. Despite its long-standing presence, PT XYZ remains dedicated to a continuous transformation journey, aspiring to become a world-class energy company. The company envisions achieving this through a dynamic, adaptive, and business-focused organization. With a restructured corporate framework, PT XYZ is poised to navigate evolving business dynamics, instilling optimism for creating new growth opportunities through strategic investments and business optimization, aligned with stakeholder expectations.

The ARIS (Architecture of Integrated Information Systems) TOOL, developed by August-Wilhelm Scheer in the 1990s, stands as a comprehensive methodology for understanding and representing business information systems. This holistic approach encompasses business processes, organizations, data, and technology. ARIS offers formal representation models to empower organizations to evaluate and optimize their information systems for specific business goals.

ARIS includes tools such as Business Process Diagrams (BPD), illustrating workflow in business processes, Organization Diagrams, depicting the impact of organizational structure on processes, and Data Models, explaining how data is utilized in business processes. ARIS is instrumental in helping organizations identify and address issues in their information systems, facilitating the evaluation of potential impacts of business changes. It aids in understanding and modeling business information systems, enhancing communication, coordination, and ensuring alignment with long-term business goals. Functioning as a centralized repository, ARIS supports the alignment of business processes, organizational functions, information, data, IT systems, and security across the enterprise. The software platform brings various benefits, including in-depth business process analysis, clear process mapping, effective change management, process optimization, organizational transparency, data-driven decision-making, and regulatory compliance. In summary, ARIS is a valuable tool for organizations across industries, promoting efficiency, transparency, and compliance in understanding, modeling, and optimizing their business information systems.

The research model in this study is a modification of the Information Systems Success Model proposed by DeLone and McLean, as suggested by Joel S. Mtebe and Christina Raphael. It incorporates additional factors, namely perceived usefulness and perceived ease of use from the Technology Acceptance Model (TAM), which have been widely acknowledged to influence user satisfaction with a system. The variables utilized in the research, as outlined by McLean and DeLone (2003) for evaluating customer satisfaction in using ARIS TOOL, include system quality, information quality, service quality, and user satisfaction. This study falls under the category of correlational research, involving data collection to determine relationships between these variables. Leila R. Kalankesh and fellow researchers supplemented the study by adding perceived usefulness, recognizing that users are inclined to use a system when they perceive it as beneficial in completing their tasks. The inclusion of the perceived ease of use factor in the research methodology stems from evidence provided by various researchers, such as Lisa Y. Chen and Wan-Ning Wu, Burhan Baharon, and Amit Sachan. These studies found that perceived ease of use significantly influences user satisfaction in contexts ranging from mobile payments to e-government services. The synthesized research model, incorporating these variables and modifications, is illustrated in Figure 1.

Figure 1. Model Penelitian



The research hypotheses, derived from the established model, aim to investigate the significant positive effects of various factors on user satisfaction with the ARIS Tool. The hypotheses include H01 System Quality, H02 Information Quality, H03 Service Quality, H04 Perceived Usefulness, and H05 Perceived Ease of Use. The study population comprises all users of the ARIS Tool, with a total of 270 respondents. Employing the Slovin method, a sample size of 176 respondents is determined, considering a 5% error tolerance. The sampling method is probability or random sampling, ensuring equal opportunities for all ARIS Tool users. Data collection involves distributing a 23-question questionnaire through Google Forms, with a 14-day survey duration. The research aims to rigorously test these hypotheses to gain valuable insights into the factors influencing user satisfaction with the ARIS Tool.

External Model Analysis

The validity and reliability of measurements in quantitative studies are pivotal for ensuring accurate and consistent results. Validity, as defined by Heale and Twycross (2015), assesses how accurately a concept is measured, while reliability, according to Hussein (2015), focuses on the consistency of measurements and the shared motivation among respondents when completing questionnaires. Outer Model Analysis, guided by Hussein, employs several tests to evaluate the validity of the measurement model. Convergent validity is determined through loading factors, with values exceeding 0.7 considered acceptable, and Average Variance Extracted (AVE), with a criterion of AVE > 0.5. Discriminant validity is assessed by comparing cross-loading factors, ensuring that loading values on the targeted construct surpass those on other constructs. Discriminant validity is further verified by comparing the Square Root of Average Variance Extracted (SR of AVE) with cross-loadings. AVE serves as a method to evaluate both convergent and discriminant validity, with values above 0.5 considered satisfactory. For questionnaire validation, Ghozali (2018) recommends correlating each question's scores with the total scores, where a correlation coefficient exceeding 0.3 indicates validity. Pearson correlation, facilitated by SPLSS software, is employed for this purpose. Regarding reliability, Composite Reliability values above 0.7 signify high reliability, with a range between 0.60 and 0.90 considered acceptable by Ghozali (2017). Values below 0.60 or above 0.95 may necessitate further examination. Cronbach's Alpha, assessing values above 0.6 for all constructs, is crucial for reliable measurements. These rigorous assessments of validity and reliability enhance the robustness and credibility of the research findings.

Inner Model Analysis

The Inner Model, as defined by Ghozali (2017), is the Structural Model that illustrates the relationships between latent variables based on substantive theory. Key indicators for the Inner Model include the Coefficient of Determination (R-Square) and Predictive Relevance (Q-

Square). R-Square measures the model's ability to explain the variation in independent variables, ranging between zero and one. A higher value signifies a stronger explanatory power. Q-Square assesses the alignment between the model's estimates and observed values, with a good predictive relevance indicated by a Q-Square value greater than zero. In structural model testing, parameters such as R-Square, F-Square, and Q-Square are examined to understand the relationships between variables. The hypotheses, centered on the influence of independent variables on the dependent variable, will be tested with a significance level (α) of 0.05. These hypotheses include the impact of System Quality, Information Quality, Service Quality, Perceived Usefulness, and Perceived Ease of Use on User Satisfaction. The analysis will be conducted using SMART PLS.

According to Ghozali (2020) cited by Siswoyo (2017), Structural Equation Modeling (SEM) is a combination of two separate statistical methods: factorial analysis developed in psychology and psychometrics and simultaneous equation modeling developed in econometrics. Partial Least Squares (PLS) analysis, a multivariate statistical technique, allows comparisons between multiple response and explanatory variables. It is one of several covariance-based statistical methods, falling under the umbrella of Structural Equation Modeling (SEM). PLS-SEM is particularly designed to handle multiple regressions when dealing with small samples, missing values, or multicollinearity. This method is flexible and capable of estimating complex models, making it suitable for research in various fields, especially those involving social relationships and human-related data. PLS, a type of SEM, connects sets of variables for analysis with numerous responses. According to Ghozali (2017), PLS is a powerful analysis method that doesn't rely on numerous assumptions. Santoso (2014) describes SEM as a multivariate analysis technique that combines factor analysis and regression (correlation) analysis. It aims to test relationships between variables in a model, both among indicators and constructs. The analysis technique in PLS-based research involves two stages: the measurement model or outer model test, which assesses the validity and reliability of constructs in each indicator, and the structural outer model or inner model test, which examines the influence between variables measured using T-tests in PLS.

4. Result and Discussion

This study was conducted based on the responses of 199 participants who filled out the questionnaire distributed from November 29, 2022, to January 15, 2023. As outlined in Chapter 3, the respondents in this study were users of ARIS Tools, aiming to gain insights into user satisfaction with the utilization of ARIS Tools. The demographic information about the respondents provides details on the number of participants based on age, gender, and the duration of their usage of ARIS Tools.

The percentage distribution of respondents based on age. The data reveals that the majority, approximately 61.5% or 155 respondents, fall within the age group of 18-28 years. Following this, there are 30.5% or 57 respondents in the 28-38 age group, 5.9% or 11 respondents in the 38-48 age group, 1.1% or 2 respondents aged over 48, and below 18. Based on the obtained data, it can be inferred that ARIS Tools users predominantly belong to the age range of 18 to 28 years, with 187 respondents completing the Google Form, and 11 respondents eliminated from the data. **T**he percentage distribution of respondents based on gender. The data indicates that 61.4% of the 187 respondents, or 113 individuals, are female, while 38.6% of the respondents, or 71 individuals, are male. This suggests that ARIS Tools is generally used more by female users.

The data on respondents based on their current usage experience with ARIS Tools. The results indicate that the majority of ARIS Tools users are employees with less than 1 year of experience, constituting 50% or 92 respondents. Following this, there are 16% or 29

respondents with 1-3 years of experience, 13% or 25 respondents with 3-8 years of experience, 13% or 24 respondents with 8-10 years of experience, 6% or 11 respondents with 10-15 years of experience, and 1.3% or 3 respondents with over 15 years of experience.

The research employed a sample size of 176 respondents who have previously used ARIS Tools, with the obtained results serving as evidence for the hypotheses in the study. The tabulation of responses for each indicator, categorized into System Quality (SQ), Information Quality (IQ), Service Quality (SEQ), Perceived Usefulness (PU), Perceived Ease of Use (PEoU), and User Satisfaction (US), reveals insightful data. For example, in System Quality (SQ), respondents demonstrated high satisfaction with ARIS Tools in terms of responsiveness, clear navigation, and effective functionality during operation. Similarly, Information Quality (IQ) received positive feedback, indicating that ARIS Tools excels in integrating accurate information, improving information quality, ensuring verified information presentation, and enhancing the precision and reliability of information. Moreover, Service Quality (SEQ) responses highlighted the assurance of data security, smooth functionality of all ARIS Tools features, and the provision of helpful features in facilitating work tasks.

In the realm of Perceived Usefulness (PU), respondents expressed overwhelming agreement that ARIS Tools significantly contributes to operational efficiency, productivity improvement, efficient data management, and job analysis simplification. The Perceived Ease of Use (PEoU) category revealed that users find ARIS Tools instrumental in simplifying work processes, easy to adapt to, and equipped with user-friendly features. Lastly, User Satisfaction (US) responses indicated a high likelihood of users recommending ARIS Tools to colleagues, satisfaction with the tool's design, fulfillment of individual needs, alignment of tool usage with expectations, and overall contentment with the user experience. This comprehensive analysis provides a nuanced understanding of user perceptions and satisfaction levels with ARIS Tools across various dimensions, offering valuable insights for further research or improvements in the tool's design and functionality.

The research model comprises six variables with 23 indicators, and the analysis was conducted using SmartPLS 3 software. The Path Model in Figure 4.4 illustrates the relationships among the variables. The evaluation of Convergent Validity ensures the consistency and reliability of the modeling used in the analysis. This test examines the consistency between the measurement tools used in the modeling and ensures they represent the same concepts.

Figure 2. Path Model dengan Outer Loading

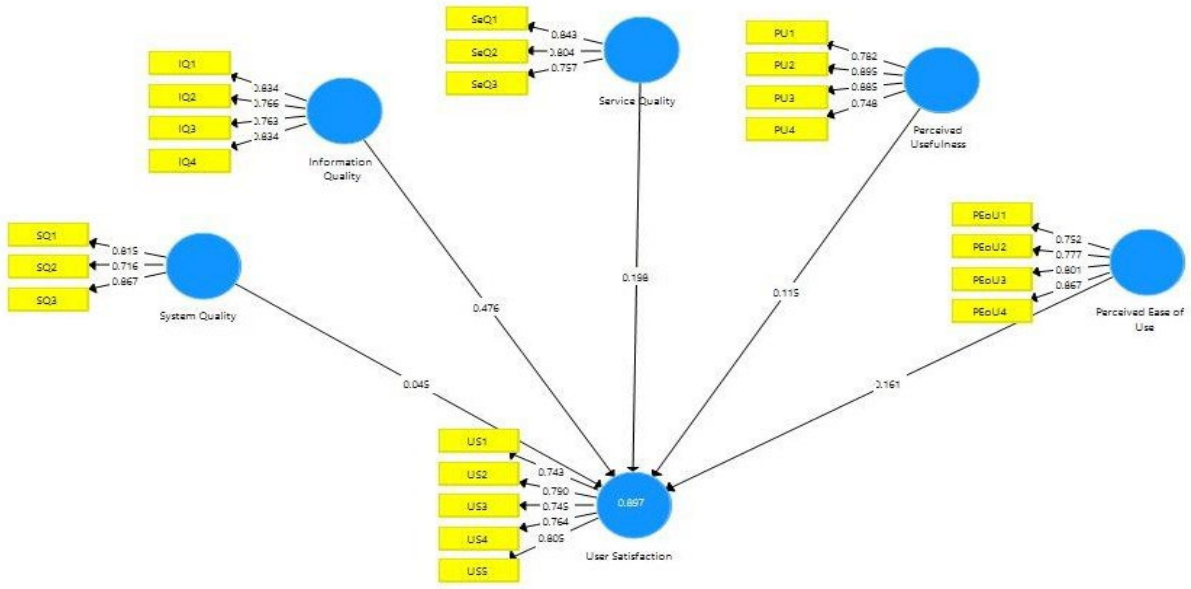


Table 1. Hasil Outer Loading

	IQ	PEoU	PU	SEQ	SQ	US	Syarat	Keterangan
IQ1	0,834						>0,5	VALID
IQ2	0,766						>0,5	VALID
IQ3	0,763						>0,5	VALID
IQ4	0,834						>0,5	VALID
PEoU1		0,752					>0,5	VALID
PEoU2		0,777					>0,5	VALID
PEoU3		0,801					>0,5	VALID
PEoU4		0,867					>0,5	VALID
PU1			0,782				>0,5	VALID
PU2			0,895				>0,5	VALID
PU3			0,885				>0,5	VALID
PU4			0,748				>0,5	VALID
SQ1					0,815		>0,5	VALID
SQ2					0,716		>0,5	VALID
SQ3					0,867		>0,5	VALID
SeQ				0,843			>0,5	VALID

1				
SeQ 2	0,804		>0,5	VALID
SeQ 3	0,757		>0,5	VALID
US1		0,743	>0,5	VALID
US2		0,79	>0,5	VALID
US3		0,745	>0,5	VALID
US4		0,764	>0,5	VALID
US5		0,805	>0,5	VALID

Source: Questionnaire Testing Results with SmartPLS

The Outer Loading results, as shown in Table 4.7, indicate the validity of the model's measurements, with all values exceeding 0.5.

Table 2. Hasil Average Variance Extracted

Exogen Variabel	Average Variance Extracted (AVE)	Rule	Decision
Information Quality	0,639	>0,5	VALID
Perceived Ease of Use	0,64	>0,5	VALID
Perceived Usefulness	0,689	>0,5	VALID
Service Quality	0,643	>0,5	VALID
System Quality	0,643	>0,5	VALID
User Satisfaction	0,592	>0,5	VALID

Source: Questionnaire Testing Results with SmartPLS

Subsequently, the researcher calculated the Average Variance Extracted (AVE) for each indicator, as presented in Table 4.8, with all values surpassing 0.5, confirming the discriminant validity of the model.

Table 3. Hasil Cronbach's Alpha

Exogen Variable	Cronbach's Alpha	Decision
Information Quality	0,811	Reliable
Perceived Ease of Use	0,813	Reliable
Perceived Usefulness	0,847	Reliable
Service Quality	0,726	Reliable
System Quality	0,719	Reliable
User Satisfaction	0,828	Reliable

Source: Questionnaire Testing Results with SmartPLS

Table 4. Hasil Composite Reliability

Exogen Variabel	Composite Reliability	Decision

Information Quality	0.876	Reliable
Perceived Ease of Use	0.877	Reliable
Perceived Usefulness	0.898	Reliable
Service Quality	0.844	Reliable
System Quality	0.843	Reliable
User Satisfaction	0.879	Reliable

Source: Questionnaire Testing Results with SmartPLS

Moving on to Reliability Testing, Cronbach's Alpha and Composite Reliability were examined. The values, displayed in Tables 4.9 and 4.10, respectively, all exceeded 0.70, indicating the reliability of the variables. In conclusion, the research successfully validated the model, ensuring its reliability and suitability for further analysis.

The Structural Model Evaluation is a critical process in assessing the validity of a theoretical model or hypothesis explaining the relationships among variables in a system. This evaluation aims to determine how well the model can explain and predict the behavior of the studied system. The evaluation involves coefficients between variables and R-square and Q-square values. R-square ($R2$) measures the level of variation among independent variables concerning the dependent variable, with higher values indicating a better-fitting model. In this study, the R-square for User Satisfaction was found to be 0.897, signifying that 89.7% of the variance in User Satisfaction is explained by the latent variables System Quality (SQ), Information Quality (IQ), Service Quality (SQ), Perceived Usefulness (PU), and Perceived Ease of Use (PEoU), while the remaining 10.3% is influenced by external variables.

Table 5. Hasil Path Coefficient

Path	Original Sample (O)
Information Quality -> User Satisfaction	0,476
Perceived Ease of Use -> User Satisfaction	0,161
Perceived Usefulness -> User Satisfaction	0,115
Service Quality -> User Satisfaction	0,198
System Quality -> User Satisfaction	0,045

Source: Questionnaire Testing Results with SmartPLS

Table 6. Hasil T-static

Path	T Statistics
Information Quality -> User Satisfaction	3.317
Perceived Ease of Use -> User Satisfaction	1.299
Perceived Usefulness -> User Satisfaction	1.039
Service Quality -> User Satisfaction	1.993
System Quality -> User Satisfaction	0.352

Source: Questionnaire Testing Results with SmartPLS

Moving on to Hypothesis Testing, the Path Coefficient results (Table 5) indicate that Information Quality, Service Quality, Perceived Ease of Use, and Perceived Usefulness have

coefficients larger than 0.1, signifying their significance. However, System Quality has a coefficient smaller than 0.1, suggesting insignificance. The T-Statistical results (Table 6) show that Information Quality -> User Satisfaction and Service Quality -> User Satisfaction paths are significant.

Table 7. Hasil Uji Hipotesis

	Path	Original Sample (O)	T Statistics	P Values	Decision
H1	Information Quality -> User Satisfaction	0.476	3.317	0.001	Support
H2	Perceived Ease of Use -> User Satisfaction	0.161	1.299	0.196	Not Support
H3	Perceived Usefulness -> User Satisfaction	0.115	1.039	0.300	Not Support
H4	Service Quality -> User Satisfaction	0.198	1.993	0.048	Support
H5	System Quality -> User Satisfaction	0.045	0.352	0.725	Not Support

Source: Questionnaire Testing Results with SmartPLS

Further Hypothesis Testing (Table 4.14) reveals the following conclusions: H1 (Information Quality -> User Satisfaction) is accepted, indicating a significant positive influence. H2 (Perceived Ease of Use -> User Satisfaction), H3 (Perceived Usefulness -> User Satisfaction), and H5 (System Quality -> User Satisfaction) are rejected, suggesting no significant positive impact. H4 (Service Quality -> User Satisfaction) is accepted, indicating a significant positive effect. These findings align with or contradict previous research, providing insights into the impact of Information Quality, Service Quality, Perceived Ease of Use, Perceived Usefulness, and System Quality on User Satisfaction in the context of ARIS Tools application usage at PT XYZ.

The analysis of data in this research aimed to explore the variables influencing User Satisfaction, starting from the creation of the path diagram to the hypothesis testing in the research model. The path diagram revealed an R Square value of 89.7%, indicating the substantial influence of exogenous latent variables on the endogenous latent variable, with 10.3% explained by external factors. The effect size ($f2$) testing showed that some variables, such as Information Quality, Perceived Usefulness, and System Quality, had a low impact on User Satisfaction, while Perceived Ease of Use demonstrated a medium impact. Further testing for predictive relevance ($Q2$) confirmed that Information Quality, Perceived Ease of Use, Perceived Usefulness, System Quality, and Service Quality held predictive relevance for User Satisfaction.

In-depth examination of the data unveiled that System Quality does not significantly affect User Satisfaction. Recommendations include enhancing responsiveness to user requests and improving application navigation for a more user-friendly experience with ARIS Tools. On the other hand, Information Quality significantly influences User Satisfaction. The application's provision of accurate and beneficial information enhances user satisfaction, recommending a focus on further improving information quality for effective use of ARIS Tools. Additionally, Service Quality was found to have a significant impact on User

Satisfaction, attributed to secure data handling and well-functioning features within ARIS Tools. To enhance User Satisfaction, a recommendation is to maintain and improve the application's service quality. Perceived Usefulness, however, did not significantly impact User Satisfaction, suggesting a need for improvement in this aspect to boost user satisfaction. Operational efficiency in various business processes could be enhanced to improve perceived usefulness. Perceived Ease of Use also did not significantly influence User Satisfaction, indicating a need for efforts to enhance user-friendliness, potentially through online training for ARIS Tools users to familiarize themselves with various features and improve overall satisfaction.

5. Conclusion and Suggestion

Conclusion

The objective of this research is to identify the factors influencing user satisfaction with ARIS Tools at PT XYZ. The methodology employed a modification of the Information System Success model by DeLone and McLean proposed by Joel S. Mtebe and Christina Raphael, supplemented with Perceived Usefulness and Perceived Ease of Use factors from the Technology Acceptance Model (TAM). The research model consists of six variables and 23 indicators, translated into statements for the distributed questionnaire. The hypotheses were tested using Partial Least Squares - Structural Equation Modeling (PLS-SEM). The results revealed that System Quality did not significantly affect User Satisfaction (Hypothesis 1 not accepted), while Information Quality (Hypothesis 2 accepted) and Service Quality (Hypothesis 3 accepted) demonstrated positive and significant impacts. However, Hypotheses 4 and 5, stating that Perceived Usefulness and Perceived Ease of Use, respectively, have a positive significant effect on User Satisfaction, were not supported by the findings. The questionnaire data, validated through outer loading and reliability tests (Cronbach's alpha, Composite reliability), were considered valid. The influential factors on User Satisfaction were identified as Information Quality and Service Quality, supported by Path Coefficient and T-statistics values exceeding the minimum threshold.

Suggestion

Based on the findings of the conducted research, the following recommendations can be provided: The ARIS Tools application could significantly enhance its contribution to information quality and service quality, as these factors positively influence user satisfaction. Therefore, a focus on improving information provision within the application is crucial. Enhancements may include ensuring that the information is easily understandable, providing accurate and up-to-date information, and offering guidance to users, facilitating their understanding of the application's features and functionalities. Quality of service improvements can be achieved by ensuring the seamless operation of all features, eliminating potential issues. Additionally, responsiveness to user requests is essential for maintaining a high level of service satisfaction in the use of ARIS Tools. Management efforts should be directed towards these aspects to optimize user satisfaction and overall application effectiveness.

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