COSTING: Journal of Economic, Business and Accounting
Volume 8 Nomor 5, Tahun 2025
e-ISSN : 2597-5234

ANALYSIS OF THE TECHNOLOGY READINESS AND ACCEPTANCE MODEL (TRAM) WITH TRUST IN DIGITAL SERVICES TOWARDS THE ADOPTION OF THE JAKI APPLICATION FOR SUSTAINABLE DIGITAL INFRASTRUCTURE (SDGs 9)

Inkreswari Retno Hardini[1], Stanny Dewanty Rehatta[2], Meta Bara Berutu[3], Regina Humaningtyas Purba[4], Ariska Novianti[5]
Program Studi Bisnis Digital Fakultas Ekonomi dan Bisnis Universitas Negeri Jakarta
E-mail: inkreswari.retno@unj.ac.id[1], stannydr@gmail.com[2], metabara@unj.ac.id[3], humaningtyasregina@gmail.com[4], ariskaopi.05@gmail.com[5]

ABSTRACT
Digital transformation in public services requires systems that are not only useful but also capable of building user trust. This study aims to analyze the influence of Technology Trust (TTR) on Perceived Usefulness (PU) and the role of Perceived Usefulness in enhancing Intention to Use (ITU) digital systems. The research employed a quantitative approach using Partial Least Squares – Structural Equation Modeling (PLS-SEM) with SmartPLS. Data were collected through questionnaires distributed to respondents who had experience using digital services. The findings reveal that Technology Trust has a positive and significant effect on Perceived Usefulness, while Perceived Usefulness strongly affects Intention to Use. These results emphasize that trust is a strategic factor in shaping the perceived usefulness of technology, which ultimately drives user intention to adopt digital systems. The practical implications suggest that organizations should strengthen trust ecosystems, highlight tangible system benefits, and improve user experience to ensure the successful adoption of digital technologies.

Keywords: Technology Acceptance Model, Trust, Perceived Usefulness, Intention to Use, PLS-SEM.

INTRODUCTION

The era of digital transformation has prompted governments around the world to adopt information and communication technology in the delivery of public services [1], [2]. Digital government has emerged as a new paradigm emphasizing the use of technology to enhance efficiency, transparency, and accessibility of public services for citizens [3], [4]. In the context of Indonesia, the Jakarta Provincial Government has been a pioneer in implementing the smart city concept through various digital innovations, one of which is the Jakarta Kini (JAKI) application launched on September 27, 2019 [3].

JAKI is a super-app that integrates more than 50 digital public services from various Regional Government Agencies (OPD) in Jakarta [5], [6]. The app offers various key features such as JakLapor for citizen reporting, JakWarta for up-to-date information, JakPangan for monitoring staple goods prices, JakSehat for health services, and JakLingko for public transportation [7], [8]. With the vision of becoming a “one-stop service” for

Jakarta residents, JAKI has successfully won various awards, including the 2023 Digital Government Award in the category of Implementation of Electronic-Based Government Services (SPBE) [9].

Despite achieving various accomplishments, the adoption of digital government technology still faces complex challenges related to user acceptance. Research shows that the success of e-government system implementation is not only determined by the quality of the technology itself, but is also influenced by psychological and social factors that affect users' intentions to adopt the technology. In this context, the Technology Acceptance Model (TAM) has become the most widely used theoretical framework for understanding and predicting technology adoption behavior [10].

However, recent research indicates that the classical TAM model has limitations in explaining the complexity of technology adoption in the digital age, particularly for government applications [11], [12]. A systematic literature review analyzing 36 articles published between 2020 and 2025 revealed that external factors such as trust, system quality, perceived enjoyment, service quality, and technological self-efficacy significantly influence user satisfaction and enhance the explanatory power of the TAM model [13].

Technology Readiness emerges as an important construct that needs to be integrated with TAM to provide a more comprehensive understanding of technology adoption. The concept developed by Parasuraman (2000) measures individuals' tendency to adopt new technology based on four dimensions: optimism, innovativeness, discomfort, and insecurity. The integration of the Technology Readiness Index (TRI) and TAM results in the Technology Readiness and Acceptance Model (TRAM), which has been shown to have an R-squared value of up to 92% in explaining the variance in intention to use [14], [15].

In addition, trust in digital services is a critical factor in the context of government application adoption. Research shows that digital trust has declined globally, with only the banking (44%) and government (41%) sectors still trusted by consumers. Trust in digital services encompasses aspects of reliability, security, data integrity, and privacy protection, all of which are important considerations for the public in adopting government applications [16], [17].

In the context of mobile government applications, research shows that perceived usefulness and perceived ease of use remain the main predictors of behavioral intention, but additional constructs such as trust, service quality, and information quality make a significant contribution to the technology acceptance model [18]. An empirical study on the Peduli Lindungi app in Indonesia confirms that integrating the TAM model with the Information Systems Success Model provides a better understanding of the factors influencing the adoption of m-government apps [19].

Previous research on the implementation of the JAKI application has yielded mixed results. A study by [20] found that the implementation of JAKI to achieve excellent service has been quite successful, although there are still challenges in inter-organizational relationships within the government, inadequate socialization, and privacy policy issues. Meanwhile, other studies have identified that the effectiveness of e-government implementation in the JAKI application in public services as a manifestation of a smart city in DKI Jakarta is not yet optimal due to several problems in its implementation [6], [21].

Although various studies have been conducted on the JAKI application, there is still a significant research gap in understanding the factors that influence technology acceptance from the user's perspective. Previous studies have focused more on policy implementation aspects and system effectiveness, but have not comprehensively analyzed the psychological and social factors influencing the public's intention to use the JAKI application [22]. Additionally, no research has integrated the constructs of technology readiness and trust in digital services into a technology adoption model for government applications in Indonesia.

The urgency of this research is increasing given the rapid development of digital technology and public demand for more efficient and accessible public services. With JAKI downloads reaching over 1 million on Google Play Store and a rating of 4.6, it is important to understand the factors that encourage or hinder the adoption of this application. A deep understanding of technology adoption behavior will provide valuable insights for policymakers and practitioners to increase the adoption rate and user satisfaction with government digital services.

Based on these conditions, this study aims to analyze the factors that influence the acceptance of the JAKI application using an extended Technology Acceptance Model that integrates the constructs of Technology Readiness and Trust in Digital Services. The proposed model will test two hypotheses that describe the relationship between constructs, namely (H1) The combined construct (Technology Readiness, PEOU, and Trust) has a positive effect on Perceived Usefulness. (H2) Perceived Usefulness has a positive effect on Intention to Use.

This study is expected to contribute theoretically in the form of a more comprehensive technology acceptance model for digital government applications. The results of this study can also serve as a reference for other local governments seeking to implement similar applications in order to achieve sustainable smart cities and digital governments.

LITERATURE REVIEW AND HYPOTHESIS

Technology Readiness

The original Technology Readiness is rooted in literature on the adoption of new technologies and human-technology interactions [23]. Technology Readiness (TR) is defined as “a person's tendency to accept and use new technologies to achieve goals in their home and workplace.” TR is an individual difference variable that resembles a trait, reflecting an individual's general attitude toward the adoption of new technology. TR is often used as a psychographic variable in decision-making-oriented research and by marketing managers in contexts where technology-based innovation is key [24].

Technology Readiness (TR) is a construct that measures the extent to which individuals feel prepared and capable of using new technology. TR consists of four main dimensions: optimism, innovativeness, discomfort, and insecurity [25]. Previous research has shown that technology readiness levels can enhance perceived usefulness and perceived ease of use toward a digital application [26]. The Technology Readiness and Acceptance Model (TRAM) integrates the concept of readiness into the technology acceptance model and has been shown to significantly improve the explanation of the variance in intention to use digital applications [26].

Perceived Ease of Use

Perceived Ease of Use refers to the extent to which a person believes that using a particular system does not require much effort. In other words, perceived ease of use is the extent to which a system is considered easy to understand and use. This is in line with the definition of "ease" as "free from difficulty or great effort." Effort is a limited resource that a person can allocate to various activities that are their responsibility. Assuming other factors remain the same, we state that an application that is perceived as easier to use than others tends to be more readily accepted by users [10]. Several studies have found that ease of use significantly influences intention to use, both directly and indirectly through a mediating relationship [11], [27].

Perceived Usefulness

Perceived Usefulness is a key concept in the Technology Acceptance Model (TAM) that refers to the extent to which an individual believes that using a system or technology will improve their performance or productivity [28]. This concept originates from motivation theory, which states that individuals tend to be motivated to perform an action if that action is perceived as a means to achieve goals they value or consider important. In this context, Perceived Usefulness becomes a strong motivational factor in encouraging someone to adopt new technology. Studies have shown that perceived usefulness significantly influences intention to use, both directly and indirectly through mediating relationships [11], [27].

Trust in Digital Service

Trust is used in human society to deal with high-risk situations, where individuals involved in interactions have little or no information about each other. In other words, trust plays an important role as a social mechanism when uncertainty is high and available information is limited, allowing individuals to continue making decisions and engaging in interactions despite potential risks [29].

Trust in digital services refers to users' belief that digital applications or systems are reliable, secure, protect privacy, and will not be misused. Trust is an important factor in the adoption of digital government systems due to the high perceived risks to security and privacy. Research shows that trust can directly influence perceptions of the usefulness and ease of use of applications, as well as encourage usage intentions [20], [30]. In the e-government domain, the level of public trust in the security and credibility of digital services has an impact on the level of adoption and successful implementation of government applications [20].

Intention to Use

Intention to use refers to an individual's desire or intention to use a digital application or system in the near future. Intention to use is often directly influenced by perceived usefulness and perceived ease of use, as well as external factors such as trust and technology readiness [25], [31], [32]. Studies in the context of mobile government, including the JAKI application, also show a consistent relationship between the above constructs [33], [34].

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) has evolved into a key model for understanding the factors that predict human behavior toward the acceptance or rejection of a technology. This model provides a systematic framework for explaining how and why individuals decide to use or reject technology, particularly through two main constructs: Perceived Usefulness and Perceived Ease of Use [35]. The primary objective of TAM is to explore the factors influencing user acceptance of product development models within an organizational environment. This model is designed to identify and explain the key elements that drive individuals to decide to accept or reject the use of a new system or technology.

Based on the Technology Acceptance Model (TAM), Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) play an important role in shaping the Intention to Use a technology [10]. Several studies have expanded TAM by adding external variables, such as Technology Readiness (TR), which has been shown to significantly influence PU and Intention to Use, as individuals' psychological and technical readiness affects their perception of technology [23], [36]. Additionally, Trust in Digital Services has a positive influence on PU and PEOU, as trust in the system and service providers can enhance users' confidence and comfort [37], [38]. Furthermore, PU and PEOU were also found to influence each other, where ease of use strengthens the perception of usefulness [39]. These studies reinforce the assumption of a causal relationship between the five constructs used in this study.

In this study, Technology Readiness (TR), Trust in Digital Service (Trust), and Perceived Ease of Use (PEOU) are combined into a second-level construct called Technology Trust and Readiness (TTR). This decision is based on conceptual and methodological considerations. Conceptually, these three variables represent distinct yet complementary dimensions of an individual's readiness and comfort in adopting digital technology. TR reflects an individual's psychological readiness and optimism toward technology [23], Trust reduces psychological barriers caused by perceived risk and enhances a sense of security [29], while PEOU reduces cognitive barriers by ensuring that the system is easy to use [10]. Combined, the three form a comprehensive construct that reflects an overall positive predisposition toward technology adoption.

From a methodological perspective, previous studies have shown that TR, Trust, and PEOU have high correlations and similar influence paths on the variables of Perceived Usefulness and Intention to Use [15], [24]. These high correlations have the potential to cause multicollinearity issues in the PLS-SEM model. Therefore, following the guidelines of [40], these constructs were combined into a second-order construct to enhance model parsimony and avoid data redundancy, without losing the theoretical meaning of each constituent dimension. With the formation of the TTR construct, this study can test the overall influence of technological readiness and comfort on Perceived Usefulness while maintaining the detail of the indicators from each of its constituent dimensions.

Based on the above description, the hypothesis proposed in this study is as follows:

H1: The combined construct (Technology Readiness, PEOU, and Trust) has a positive effect on Perceived Usefulness.

H2: Perceived Usefulness has a positive effect on Intention to Use.

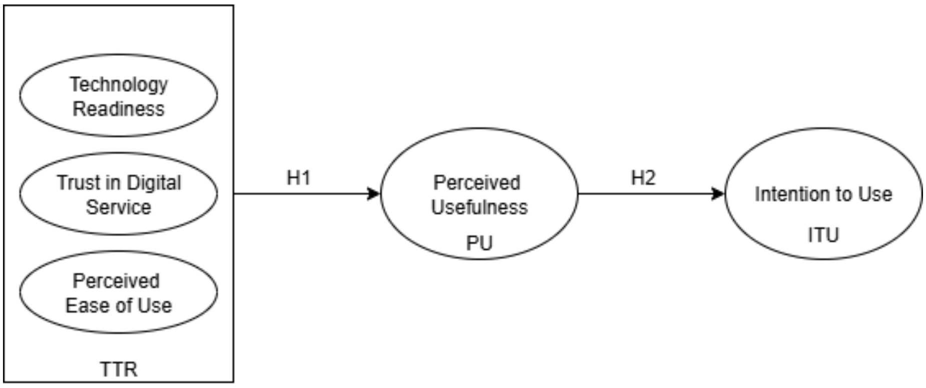

Figure 1. Research Theoretical Framework Model

METHOD

This study is a quantitative study with an explanatory research approach that aims to examine the relationship and influence between variables using a developed theoretical model.

Population and Sample

The population used in this study was all potential and actual users of the JAKI application in the DKI Jakarta Province from the general public. The sample in this study was active users or those who had used the JAKI application at least once in the last 6 months. The sampling technique used in this study is purposive sampling, with criteria including being at least 17 years old, having accessed or used the JAKI app, and residing in the Jakarta Special Capital Region. The sample size used is a minimum of 100 respondents, following the minimum requirement for SEM-PLS analysis, which is at least 5-10 times the number of research indicators [41].

Data Collection Techniques

The instrument used in this study was a questionnaire distributed through social media and to communities and the general public. The questionnaire was distributed non-randomly using purposive sampling techniques to reach respondents who had used the JAKI application at least once in the last six months. The questionnaire was designed using a 4-point Likert scale, where respondents were asked to indicate their level of agreement with the statements presented, with response options ranging from 1 (Strongly Disagree) to 4 (Strongly Agree).

Instrument testing was conducted in two stages: validity testing and reliability testing. Construct validity was evaluated using outer loading values and Average Variance Extracted (AVE) values, with minimum thresholds of 0.7 and 0.5, respectively. Meanwhile, construct reliability was tested using Cronbach's Alpha and Composite Reliability values, with a recommended threshold of ≥ 0.7 to indicate good internal consistency among indicators within a single variable. The entire analysis process was conducted using a Partial Least Squares-based Structural Equation Modeling (SEM-PLS) approach through SmartPLS software.

Analysis Method

The data were analyzed using the Structural Equation Modeling - Partial Least Squares (SEM-PLS) method with the help of SmartPLS software. The analysis steps included [11], [26], [27]:

- Evaluation of the measurement model (outer model): validity and reliability tests.
- Evaluation of the structural model (inner model): path coefficient tests, R^2 and Q^2 values, and significance tests using bootstrapping.
- Hypothesis testing was conducted by examining the t-statistic and p-value (cut-off: $t > 1.96$ and $p < 0.05$).

Operational Variables

The variables used in this study include:

1. Dependent Variable
   Intention to Use (Y): Users' intention to use the JAKI application continuously in the future [27].
2. Independent Variable
   TTR (Technology Trust and Readiness) (X): A second-order construct representing readiness, trust, and perceived ease of use of technology, formed by:
   - Technology Readiness (X1): The level of individual readiness to accept and use new technology [23].
   - Trust in Digital Service (X2): The level of user trust in the system, security, and JAKI application provider [17].
   - Perceived Ease of Use (X3): Individuals' perceptions that the JAKI application is easy to use and understand [10].
3. Intervening Variables
   Perceived Usefulness (X4): Individuals' perceptions that the JAKI application is useful in daily activities and improves efficiency [10].

Research Variable Operationalization Table

To measure each construct in the research model, it is necessary to translate the concept into measurable indicators that are compiled in the form of questionnaire items. This process is called variable operationalization. The variable operationalization table serves as a reference to ensure that each variable studied has a clear operational definition and can be measured quantitatively. Each variable in this study, whether independent, dependent, or intervening, is developed based on relevant theory and previous studies, and measured using items that have been validated in previous literature. The formulation of indicators in the following table is also adapted to the context of JAKI as a public digital service owned by the Provincial Government of DKI Jakarta.

Table 1. Research Variable Operationalization

No.		Variable	Operational Definition	Indicators	Statement Item	Scale
1	**Technology Trust and Readiness (TTR)**	**Technology Readiness (X1)** [42]	The level of psychological and mental readiness of users in accepting and using technology	• Optimism • Innovativeness • Discomfort • Insecurity	I am excited to try new apps or features on the JAKI app.	Likert 1-4
		Trust in Digital Service (X2) [37], [43]	Level of user trust in institutions, security, and reliability of public digital service applications	• Trust in system • Trust in institution • Perceived integrity	• I am confident that the JAKI app protects the privacy of its users. • I believe that JAKI provides accurate and reliable information.	Likert 1-4

	Perceived Ease of Use (X3) [10]	Level of perception that the application is easy to learn and operate	• Clarity of interface • Ease of navigation • Ease of learning	• Operating the JAKI app requires little effort. • The menu navigation in the JAKI app is clear and easy to use. • I did not encounter any significant difficulties when using the JAKI feature.	Likert 1-4
2	**Perceived Usefulness (X4)** [44]	The level of perception that the use of the application helps improve the effectiveness or quality of user activities	• Task efficiency • Effectiveness • Productivity	• Using JAKI makes it easier for me to access public services. • JAKI improves the efficiency of my activities related to government services. • JAKI is useful in my daily life.	Likert 1-4
3	**Intention to Use (Y)** [44], [45]	The level of intention or desire of users to use the JAKI application in the future	• Behavioral intention • Future use • Continuance intention	• I intend to use the JAKI app regularly in the future. • I will recommend the JAKI app to others. • I want to use the JAKI app when I need public services.	Likert 1-4

RESULT AND DISCUSSION

Respondent Characteristics

The research questionnaire obtained 235 respondents. The research respondents had various characteristics, which can be seen in the following figure.

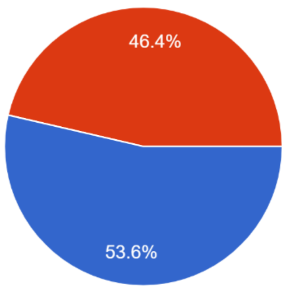

Figure 2. Gender of Respondents

The majority of respondents who completed the questionnaire were male, accounting for 53.6% of the total, or 126 participants. Meanwhile, female respondents accounted for 46.4% of the total, or 109 participants.

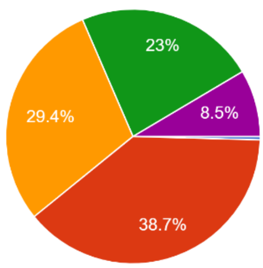

Figure 3. Age of Respondents

Respondents in the study were divided into several age categories. The majority of respondents were aged 17-25 years, accounting for 38.7% or 91 respondents. Next, the 26-35 age group accounted for 29.4% or 69 respondents. The 36-45 age group made up 23% or 54 respondents, and respondents aged over 45 years old accounted for 8.5% or 20 respondents.

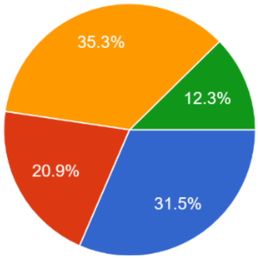

Figure 4. Respondents' Education

Respondents in the study had varying levels of education. Respondents with a bachelor's degree dominated the study, accounting for 35.3% or 83 respondents. Next, respondents with a high school/vocational school education level also dominated the study, accounting for 31.5% or 74 respondents. Meanwhile, respondents with an associate's degree and master's/doctorate degree levels accounted for 49 respondents and 29 respondents, respectively.

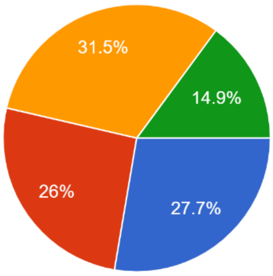

Figure 5. Duration of Using the JAKI App

Research respondents had varying durations of JAKI app usage. The majority of respondents used the JAKI app for 4-12 months.

Validity Test

This section contains research instrument testing, explaining validity testing. The purpose of validity testing is to ensure that the indicators actually measure the intended construct. Validity testing is divided into convergent validity testing and discriminant validity testing. Convergent validity testing aims to ensure that the indicators within a single construct truly converge to measure the same thing. Table 2 shows the results of convergent validity testing, as indicated by the results of the Cross Loadings analysis.

Table 2. Cross Loadings

	ITU	PU	TTR
ITU1	0.904	0.853	0.722
ITU3	0.886	0.772	0.868

ITU4	0.923	0.800	0.773
PU1	0.840	0.907	0.728
PU2	0.793	0.902	0.803
PU4	0.808	0.918	0.770
TTR1	0.617	0.596	0.785
TTR2	0.624	0.625	0.788
TTR3	0.741	0.736	0.843
TTR4	0.793	0.747	0.881
TTR5	0.767	0.798	0.886
TTR6	0.852	0.770	0.906

Source: SmartPLS 4 output, 2025.

Based on the results of discriminant validity testing through cross loadings, it can be seen that each indicator has a higher loading value on the construct it measures compared to the loading on other constructs. In the Intention to Use (ITU) construct, the ITU1, ITU3, and ITU4 indicators show loadings of 0.904, 0.886, and 0.923, respectively, which are higher than the loadings for the Perceived Usefulness (PU) and Trust (TTR) constructs. The same pattern is observed in the PU construct, where indicators PU1, PU2, and PU4 have loadings of 0.907, 0.902, and 0.918, respectively, which are higher than the loadings on other constructs. Meanwhile, in the TTR construct, all TTR1 to TTR6 indicators have the highest loadings in the TTR construct (0.785 to 0.906) compared to the ITU and PU constructs. Thus, it can be concluded that all indicators in this study meet the criteria for discriminant validity through the cross loadings test, so no indicators need to be eliminated.

In addition to the cross-loading analysis results, the convergent validity test also examines the AVE (Average Variance Extracted) analysis results. Table 3 shows the convergent validity test results indicated by the AVE (Average Variance Extracted) analysis results.

Table 3. AVE (Average Variance Extracted)

	Cronbach's alpha	**Composite reliability (rho_a)**	**Composite reliability (rho_c)**	**Average variance extracted (AVE)**
ITU	0,889	0,891	0,931	0,818
PU	0,895	0,895	0,934	0,826
TTR	0,922	0,930	0,939	0,722

Source: SmartPLS 4 output, 2025.

Based on the data analysis results, it can be seen that the AVE (Average Variance Extracted) values for all research constructs have met the convergent validity criteria. The Intention to Use (ITU) construct has an AVE value of 0.818, the Perceived Usefulness (PU) construct has an AVE value of 0.826, and the Trust (TTR) construct has an AVE value of 0.722. All of these values are greater than the minimum threshold of 0.50, so it can be concluded that each construct is able to explain more than 50% of the variance of the indicators that form it. Thus, all constructs in this research model have met the convergent validity requirements, and the instruments used are deemed valid.

Meanwhile, the discriminant validity test aims to ensure that each construct in the model is truly distinct from one another so that there is no overlap in measurement. The discriminant validity test can be seen from the results of the Fornell-Larcker Criterion analysis. The results of the Fornell-Larcker Criterion test can be seen in Table 4.

Table 4. Fornell-Larcker Criterion

	ITU	PU	TTR
ITU	0,905		
PU	0,895	0,909	
TTR	0,868	0,844	0,849

Source: SmartPLS 4 output, 2025.

Based on the results of discriminant validity testing using the Fornell-Larcker criteria, it can be seen that the AVE square root value (shown on the main diagonal) is higher than the correlation between the constructs below it. The Intention to Use (ITU) construct has an AVE root mean square value of 0.905, which is higher than the correlation between ITU and Perceived Usefulness (PU) at 0.895, as well as with Trust (TTR) at 0.868. The PU construct has a √AVE of 0.909, also higher than its correlation with ITU (0.895) and TTR (0.844). Similarly, the TTR construct with an √AVE of 0.849 is greater than its correlation with ITU (0.868) and PU (0.844). Thus, all constructs in this study have met the Fornell-Larcker criteria, meaning that each construct has good discrimination and can be clearly distinguished from other constructs.

Reliability Test

Reliability testing was conducted to determine the internal consistency of the indicators in measuring the construct. To measure reliability, Cronbach's Alpha (α), Composite Reliability (CR or rho_c), and rho_A values were taken into consideration.

Table 5. Reliability Test Results

	Cronbach's alpha	**Composite reliability (rho_a)**	**Composite reliability (rho_c)**
ITU	0,889	0,891	0,931
PU	0,895	0,895	0,934
TTR	0,922	0,930	0,939

Source: SmartPLS 4 output, 2025.

Based on the reliability test results, all constructs in this study have met the reliability criteria. The Intention to Use (ITU) construct has a Cronbach's Alpha value of 0.889, a rho_A value of 0.891, and a Composite Reliability (CR) value of 0.931. The Perceived Usefulness (PU) construct shows a Cronbach's Alpha value of 0.895, a rho_A of 0.895, and a CR of 0.934. Meanwhile, the Trust (TTR) construct obtained a Cronbach's Alpha value of

0.922, a rho_A of 0.930, and a CR of 0.939. All Cronbach's Alpha, rho_A, and Composite Reliability values are above the minimum threshold of 0.70, so it can be concluded that all constructs in this study have high internal consistency. Thus, this research instrument is proven to be reliable and trustworthy for measuring the constructs under study.

Hypothesis Testing

At this stage, hypothesis testing is conducted to determine whether the relationships between variables formulated in the research model are empirically proven. Hypothesis testing is performed through structural model analysis (inner model) using the bootstrapping method in SmartPLS. Through this procedure, path coefficients, T-statistics, and significance values (p-values) can be obtained, which are used to determine whether a hypothesis is accepted or rejected. Thus, the results of this testing will form the basis for answering the research questions and supporting or rejecting the conceptual framework that has been proposed previously.

Table 6. Results of path coefficient analysis using the bootstrapping method

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
PU -> ITU	0,895	0,895	0,011	83,220	0,000
TTR -> PU	0,844	0,844	0,014	58,685	0,000

Source: SmartPLS 4 output, 2025.

Based on the bootstrapping analysis results, it was found that the Perceived Usefulness (PU) variable had a significant effect on Intention to Use (ITU) with an original sample value of 0.895, a T-statistic value of 83.220 (>1.96), and a p-value of 0.000 (<0.05). This indicates that the higher the perceived usefulness, the higher the users' intention to use the system. Furthermore, the Trust (TTR) variable was found to have a significant effect on Perceived Usefulness (PU) with an original sample value of 0.844, a T-statistic value of 58.685 (>1.96), and a p-value of 0.000 (<0.05). Thus, it can be concluded that both research hypotheses are accepted because each relationship between variables has a positive and significant influence.

Discussion

The results of this study strongly support the Technology Acceptance Model (TAM) theory. The findings show that Perceived Usefulness (PU) has a significant effect on Intention to Use (ITU) with a value of 0.895. This figure is higher than the average of previous studies (around 0.6) according to [46]. The very high T-statistic value of 83.220 proves that the relationship between perceived usefulness and intention to use the system is indeed strong and significant. This result is in line with [10], who stated that a system will be accepted if users feel that it helps them in their work. In other words, the more users feel the real benefits, the higher their desire to use it. Additionally, Trust (TTR), which consists of Technology Readiness, Trust in Digital Service, and Perceived Ease of Use, also significantly influences PU with a value of 0.844. This indicates that trust is a crucial factor in shaping an individual's assessment of technology [47].

This analysis uses the bootstrapping method, a statistical technique for testing the significance of results without assuming a specific data distribution. Using this method, a p-value of 0.000 was obtained for both hypotheses, meaning that the research results are highly significant and not coincidental. The results of this study are consistent with many studies on TAM, even showing a stronger relationship. For example, TAM2 and TAM3 studies typically explain 37–53% of the variation in usage intent, while the results of this study have the potential to be higher [48]. In the context of digital banking, the PU value for ITU is usually around 0.276, significantly lower than the results of this study [49]. This means that the system under study truly provides clearer benefits for its users.

Based on the research results, there are several managerial implications that organizations can apply to improve the success of system adoption. First, organizations need to emphasize the value proposition or tangible benefits of the developed system. This can be achieved by showing concrete evidence of how the system can improve user performance, for example through pilot projects or demonstrations of work results. Second, it is important for organizations to build a trust ecosystem by improving users' technological readiness, ensuring transparency in digital services, and guaranteeing data security. High levels of trust will reinforce the belief that the system is truly beneficial. Third, organizations must prioritize usability by designing simple and intuitive interfaces. Usability testing should also be conducted to ensure the system is user-friendly for various types of users. Fourth, technology implementation needs to be accompanied by change management, because digital transformation is not only about technology, but also user behavior. Therefore, leadership support, effective communication about the benefits of the system, and adequate training are essential. Finally, organizations need to conduct ongoing evaluations of user satisfaction, usage levels, and the system's impact on performance. These evaluations can help organizations make improvements and develop the system in the future.

CONCLUSION

Based on the results of the analysis using SmartPLS, all research instruments have met the validity and reliability test criteria. The convergent validity test shows that the outer loadings and AVE values are greater than the minimum limit, indicating that the indicators are able to represent the construct well. Discriminant validity tests through cross loadings, the Fornell-Larcker criterion, and HTMT also yielded adequate results, enabling each construct to be clearly distinguished from one another. Additionally, reliability tests using Cronbach's Alpha and Composite Reliability yielded values above 0.7, indicating that the research instruments are consistent and reliable.

Furthermore, the results of hypothesis testing using the bootstrapping method show that Perceived Usefulness (PU) has a positive and significant effect on Intention to Use (ITU), and Technology Trust (TTR) has a positive and significant effect on Perceived Usefulness (PU). Thus, it can be concluded that trust in technology plays an important role in increasing perceived usefulness, and ultimately, perceived usefulness encourages individuals' intention to use the system.

REFERENCES

[1] S. J. Eom and J. Lee, "Digital government transformation in turbulent times: Responses, challenges, and future direction," *Gov Inf Q*, vol. 39, no. 2, Apr. 2022, doi: 10.1016/j.giq.2022.101690.

[2] I. Mergel, N. Edelmann, and N. Haug, "Defining digital transformation: Results from expert interviews," *Gov Inf Q*, vol. 36, no. 4, Oct. 2019, doi: 10.1016/J.GIQ.2019.06.002.

[3] A. Al Maazmi, S. Piya, and Z. C. Araci, "Exploring the Critical Success Factors Influencing the Outcome of Digital Transformation Initiatives in Government Organizations," *Systems*, vol. 12, no. 12, Dec. 2024, doi: 10.3390/SYSTEMS12120524.

[4] L. Tangi, M. Janssen, M. Benedetti, and G. Noci, "Digital government transformation: A structural equation modelling analysis of driving and impeding factors," *Int J Inf Manage*, vol. 60, Oct. 2021, doi: 10.1016/j.ijinfomgt.2021.102356.

[5] N. W. Riani, K. A. S. Wijaya, I. P. D. Yudartha, and R. Savitri, "Analysis of Public Service Innovation Based on JAKI Application in Realizing the New Public Service," *JPAS (Journal of Public Administration Studies)*, vol. 9, no. 1, pp. 57–66, Jun. 2024, doi: 10.21776/UB.JPAS.2024.009.01.7.

[6] R. F. Subiyanto, M. A. Guffari, A. A. Saputra, and N. Nurdin, "Mengkaji Dampak Implementasi Aplikasi JAKI Terhadap Aksesibilitas Pelayanan Publik di Kota Jakarta," *Indonesian Journal of Social Development*, vol. 1, no. 4, p. 14, Jul. 2024, doi: 10.47134/JSD.V1I4.2801.

[7] Jakarta Smart City, "Jakarta Smart City." Accessed: Aug. 04, 2025. [Online]. Available: https://smartcity.jakarta.go.id/id/

[8] I. P. S. D. Prasetia, K. A. S. Wijaya, I. P. D. Yudartha, and R. Savitri, "Analisis Persepsi Masyarakat Terhadap Aplikasi JAKI (Jakarta Kini) di Provinsi DKI Jakarta," *Ganaya : Jurnal Ilmu Sosial dan Humaniora*, vol. 7, no. 1, pp. 1–12, Jan. 2024, doi: 10.37329/GANAYA.V7I1.2941.

[9] Berita Jakarta, "Jakarta Wins Overall Champion in Indonesia Digital Initiative Award 2023," Berita Jakarta. Accessed: Aug. 04, 2025. [Online]. Available: https://www.beritajakarta.id/en/read/53056/jakarta-wins-overall-champion-in-indonesia-digital-initiative-award-2023

[10] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Quarterly*, vol. 13, no. 3, pp. 319–340, 1989.

[11] D. Belanche, L. V. Casaló, and C. Flavián, "Integrating trust and personal values into the Technology Acceptance Model: The case of e-government services adoption," *Cuadernos de Economía y Dirección de la Empresa*, vol. 15, no. 4, pp. 192–204, Oct. 2012, doi: 10.1016/J.CEDE.2012.04.004.

[12] M. D. Williams, N. P. Rana, and Y. K. Dwivedi, "The unified theory of acceptance and use of technology (UTAUT): a literature review," *Journal of Enterprise Information Management*, vol. 28, no. 3, pp. 443–488, Apr. 2015, doi: 10.1108/JEIM-09-2014-0088.

[13] I. S. Latif, R. E. Saputro, and A. S. Barkah, "Technology Acceptance Model TAM using Partial Least Squares Structural Equation Modeling PLS- SEM," *Journal of Information Systems and Informatics*, vol. 7, no. 2, pp. 1376–1399, Jun. 2025, doi: 10.51519/JOURNALISI.V7I2.1104.

[14] F. N. Afiana, Z. Rifai, and W. A. Frilisia, "Integrasi Technology Readiness dan Technology Acceptance Model Terhadap Kesiapan Pengguna Enterprise Resource Planning (ERP) pada Industri Pengolahan Kelapa Organik," *Jurnal Sistem Informasi Bisnis*, vol. 14, no. 2, pp. 100–110, Apr. 2024, doi: 10.21456/VOL14ISS2PP100-110.

[15] C. H. Lin, H. Y. Shih, and P. J. Sher, "Integrating technology readiness into technology acceptance: The TRAM model," *Psychol Mark*, vol. 24, no. 7, pp. 641–657, Jul. 2007, doi: 10.1002/MAR.20177.

[16] E. Abu-Shanab and A. Al-Azzam, "Trust Dimensions and the Adoption of E-Government in Jordan," *International Journal of Information Communication Technologies and Human Development*, vol. 4, no. 1, pp. 39–51, Jan. 2012, doi: 10.4018/JICTHD.2012010103.

[17] L. Carter and F. Bélanger, "The utilization of e-government services: Citizen trust, innovation and acceptance factors," *Information Systems Journal*, vol. 15, no. 1, pp. 5–25, Jan. 2005, doi: 10.1111/J.1365-2575.2005.00183.X.

[18] D. Kurniasih, P. I. Setyoko, and M. N. Huda, "Insights into Mobile Government Adoption Factors: A Comprehensive Analysis of Peduli Lindungi Application in Indonesia," *CommIT Journal*, vol. 18, no. 1, pp. 53–65, 2024, doi: 10.21512/COMMIT.V18I1.9024.

[19] M. I. Nurmansyah, C. Rosidati, Yustiyani, and N. M. Nasir, "Measuring the Success of PeduliLindungi Application Use for Supporting COVID-19 Prevention: A Case Study among College Students in Jakarta, Indonesia," *Kesmas*, vol. 17, pp. 11–16, Jul. 2022, doi: 10.21109/KESMAS.V17ISP1.6057.

[20] N. A. Kalihva, T.- Yuwono, and D. G. Manar, "Implementasi Aplikasi Jakarta Kini (JAKI) Sebagai Inovasi Pelayanan Publik Dalam Mewujudkan Pelayanan Prima di DKI Jakarta," *Journal of Politic and Government Studies*, vol. 12, no. 3, pp. 447–465, Jul. 2023, Accessed: Aug. 04, 2025. [Online]. Available: https://ejournal3.undip.ac.id/index.php/jpgs/article/view/39886

[21] Anisa Ramadhania, Muradi, and Jajang Sutisna, "Penerapan E-Government Pemerintah Provinsi DKI Jakarta Melalui Aplikasi Jakarta Kini (Jaki) dalam Meningkatkan Kualitas Pelayanan Publik Tahun 2022," *NeoRespublica : Jurnal Ilmu Pemerintahan*, vol. 5, no. 1, pp. 29–48, Aug. 2023, doi: 10.52423/NEORES.V5I1.146.

[22] M. Al-Kautsar Maktub, P. W. Handayani, and F. P. Sunarso, "Citizen acceptance and use of the Jakarta Kini (JAKI) e-government: Extended unified model for electronic government adoption," *Heliyon*, vol. 11, no. 2, p. e42078, Jan. 2025, doi:

10.1016/J.HELIYON.2025.E42078.
[23] A. Parasuraman and C. L. Colby, "An updated and streamlined Technology Readiness Index: TRI 2.0," *J Serv Res*, vol. 18, no. 1, pp. 59–74, 2015, doi: 10.1177/1094670514539730.
[24] M. Blut and C. Wang, "Technology readiness: a meta-analysis of conceptualizations of the construct and its impact on technology usage," *J Acad Mark Sci*, vol. 48, no. 4, pp. 649–669, Jul. 2020, doi: 10.1007/S11747-019-00680-8/TABLES/5.
[25] R. D. Kusumastuti and J. Rouli, "Smart City Implementation and Citizen Engagement in Indonesia," *IOP Conf Ser Earth Environ Sci*, vol. 940, no. 1, p. 012076, Dec. 2021, doi: 10.1088/1755-1315/940/1/012076.
[26] M. R. Hermanto, A. Prasetio, and M. Ariyanti, "The Effect Of User Readiness Acceptance Of Sijagger V2 Using Technology Readiness Acceptance Model (Tram) (CASE Research: KPPBC TMP A Tangerang)," *International Journal of Science, Technology & Management*, vol. 4, no. 5, pp. 1269–1287, Sep. 2023, doi: 10.46729/IJSTM.V4I5.925.
[27] R. N. Rahmawati and I. M. Narsa, "Intention to Use e-Learning: Aplikasi Technology Acceptance Model (TAM)," *Owner : Riset dan Jurnal Akuntansi*, vol. 3, no. 2, pp. 260–269, Jul. 2019, doi: 10.33395/OWNER.V3I2.151.
[28] M. Igbaria, S. J. Schiffman, and T. J. Wieckowski, "The respective roles of perceived usefulness and perceived fun in the acceptance of microcomputer technology," *Behaviour & Information Technology*, vol. 13, no. 6, pp. 349–361, 1994, doi: 10.1080/01449299408914616.
[29] P. Pietrzak and J. Takala, "Digital trust – asystematic literature review," *Forum Scientiae Oeconomia*, vol. 9, no. 3, pp. 59–71, Sep. 2021, doi: 10.23762/FSO_VOL9_NO3_4.
[30] V. Riskasari, A. Z. Rahman, and R. Hanani, "ANALISIS USER EXPERIENCE PADA PENGGUNAAN APLIKASI JAKARTA KINI (JAKI) DI PROVINSI DKI JAKARTA," *Journal of Public Policy and Management Review*, vol. 13, no. 2, pp. 1–11, Mar. 2024, doi: 10.14710/JPPMR.V13I2.43540.
[31] T. Sulistyaningsih, R. A. Purnama, and U. Kulsum, "Smart City Policy: Strategy and Implementation to Realize Smart Urban Governance in Indonesia," *Journal of Governance and Public Policy*, vol. 10, no. 2, pp. 105–117, Jun. 2023, doi: 10.18196/JGPP.V10I1.13840.
[32] A. Q. Wahyu Sulistya *et al.*, "A case study of indonesian government digital transformation: Improving public service quality through E-government implementation," *Proceedings - 2019 5th International Conference on Science and Technology, ICST 2019*, p. 9166234, Jul. 2019, doi: 10.1109/ICST47872.2019.9166234.
[33] M. Choirur Roziqin, D. Putra Darmawan, J. Kesehatan, and P. Negeri Jember, "Analisis Kesiapan Dalam Penerapan SIMPUS dengan Metode TRI di Puskesmas Jenggawah Jember," *Techno.Com*, vol. 20, no. 1, pp. 10–18, Feb. 2021, doi: 10.33633/TC.V20I1.4039.
[34] T. D. Susanto and M. Aljoza, "Individual Acceptance of e-

Government Services in a Developing Country: Dimensions of Perceived Usefulness and Perceived Ease of Use and the Importance of Trust and Social Influence," *Procedia Comput Sci*, vol. 72, pp. 622–629, Jan. 2015, doi: 10.1016/J.PROCS.2015.12.171.

[35] A. Granić and N. Marangunić, "Technology acceptance model in educational context: A systematic literature review," *British Journal of Educational Technology*, vol. 50, no. 5, pp. 2572–2593, 2019, doi: 10.1111/BJET.12864.

[36] A. Mulyanto, S. Sumarsono, T. F. Niyartama, and A. K. Syaka, "Penerapan TAM dalam pengujian model penerimaan aplikasi MasjidLink," *Semesta Teknika*, vol. 26, no. 1, pp. 12–20, 2023, [Online]. Available: https://ejournal.itn.ac.id/index.php/semestatek/article/view/4209

[37] H. Choung, P. David, and A. Ross, "Trust in AI and its role in the acceptance of AI technologies," *arXiv preprint arXiv:2203.12687*, 2022.

[38] A. Hanifa, D. I. Mutaqin, S. Afandi, and S. N. Khasanah, "Analisis kepuasan pengguna aplikasi JAKI di Cengkareng Jakarta Barat menggunakan metode TAM dan EUCS," *Jurnal Ilmiah FIFO*, vol. 15, no. 1, pp. 50–59, 2023, doi: 10.33061/fifo.v15i1.3792.

[39] H. Nugroho, U. Suhud, and R. Rochyati, "Penerapan TAM dan motivasi terhadap intensi mahasiswa di Jakarta untuk menggunakan tablet," *Communicare: Journal of Communication Studies*, vol. 5, no. 1, pp. 15–28, 2019, doi: 10.37535/103005120195.

[40] J. J. F. Hair, G. T. M. Hult, C. M. Ringle, and M. Sarstest, "A primer on partial least squares structural equation modeling (PLS-SEM)," *International Journal of Research & Method in Education*, vol. 38, no. 2, pp. 220–221, 2022, Accessed: Aug. 11, 2025. [Online]. Available: https://www.researchgate.net/publication/354331182_A_Primer_on_Partial_Least_Squares_Structural_Equation_Modeling_PLS-SEM

[41] J. . F. Hair, M. Sarstedt, and C. M. Ringle, "Rethinking some of the rethinking of partial least squares," *Eur J Mark*, vol. 53, no. 4, pp. 566–584, Apr. 2019, doi: 10.1108/EJM-10-2018-0665.

[42] S. Mohd Faizal, N. Jaffar, and A. S. Mohd nor, "Integrate the adoption and readiness of digital technologies amongst accounting professionals towards the fourth industrial revolution," *Cogent Business and Management*, vol. 9, no. 1, Dec. 2022, doi: 10.1080/23311975.2022.2122160; PAGE:STRING:ARTICLE/CHAPTER.

[43] A. Balaskas, M. Panagiotarou, 2022 Rigou, S. Balaskas, A. Panagiotarou, and M. Rigou, "The Influence of Trustworthiness and Technology Acceptance Factors on the Usage of e-Government Services during COVID-19: A Case Study of Post COVID-19 Greece," *Administrative Sciences 2022, Vol. 12, Page 129*, vol. 12, no. 4, p. 129, Sep. 2022, doi: 10.3390/ADMSCI12040129.

[44] L. Padmawidjaja, "The influence of perceived usefulness and perceived ease of use on behavioral intention with TAM approach to users of research management information systems,"

Enrichment : Journal of Management, vol. 13, no. 3, pp. 1759–1771, Jul. 2023, doi: 10.35335/ENRICHMENT.V13I3.1532.

[45] P. Luik and M. Taimalu, “Predicting the Intention to Use Technology in Education among Student Teachers: A Path Analysis,” *Education Sciences 2021, Vol. 11, Page 564*, vol. 11, no. 9, p. 564, Sep. 2021, doi: 10.3390/EDUCSCI11090564.

[46] W. R. King and J. He, “A meta-analysis of the technology acceptance model,” *Information and Management*, vol. 43, no. 6, pp. 740–755, Sep. 2006, doi: 10.1016/J.IM.2006.05.003.

[47] D. H. McKnight, P. Liu, and B. T. Pentland, “Trust Change in Information Technology Products,” *Journal of Management Information Systems*, vol. 37, no. 4, pp. 1015–1046, 2020, doi: 10.1080/07421222.2020.1831772,.

[48] S. Shetty and N. Joshi, “A Bibliometric Analysis of Research Papers Related to AI-powered Agile Project Adoption by Extending UTAUT,” *IJFMR - International Journal For Multidisciplinary Research*, vol. 6, no. 4, Aug. 2024, doi: 10.36948/IJFMR.2024.V06I04.26874.

[49] H. A. Alnemer, “Determinants of digital banking adoption in the Kingdom of Saudi Arabia: A technology acceptance model approach,” *Digital Business*, vol. 2, no. 2, p. 100037, Jan. 2022, doi: 10.1016/J.DIGBUS.2022.100037.