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The influence of digital competence, personal innovation, and the technology acceptance model on nurses in secondary-level hospitals in Java

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Abstract

This study examines how Digital Competence and Personal Innovativeness influence the Technology Acceptance Model (TAM) and its implications for Attitude and Intention to Use digital technology among nurses in secondary-level hospitals in Java, Indonesia. A quantitative causal design was employed, collecting data from 500 nurses with at least an associate degree in nursing and a minimum of two years of work experience, using an online survey via Google Forms. Structural Equation Modeling (SEM) using Partial Least Squares (SmartPLS 4) was applied to test hypothesized relationships. The results indicate that both Digital Competence and Personal Innovativeness significantly enhance TAM, which in turn strongly affects nurses' Attitude and Intention to Use digital technology. The model demonstrated high explanatory power, with R^2 values ranging from 0.75 to 0.82. These findings highlight that nurses' digital readiness and innovative mindset are pivotal in shaping technology acceptance and actual utilization in hospitals. Practically, the study underscores the need for hospitals to invest in digital training, foster innovation among nursing staff, and cultivate a supportive organizational culture that facilitates technology adoption. Such measures can accelerate the successful implementation of national digital health initiatives, including the SATUSEHAT platform, improving efficiency and quality of care in the Indonesian healthcare system.

Keywords: Attitude, Digital competence, Intention to use, Personal innovativeness, Technology acceptance model.

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1. Introduction

Indonesia's healthcare digitalization is entering a strategic phase with a national mandate to implement Electronic Medical Records (EMR). The latest legal framework, Health Law No. 17/2023 and Minister of Finance Regulation No.

24/2022 concerning Medical Records, mandates electronic medical records, guided by the principles of data security and confidentiality, and emphasizes the national transition to EMR. The SATUSEHAT (IHS) policy is positioned as a cross-facility data integration platform to unify the health information ecosystem [1].

On the ground, implementation gaps remain evident. A widely cited indication highlights that of approximately 3,000 hospitals, approximately half have adopted EMR, and only approximately 16% are optimally managed [2] this indicates the "already in use but not yet effective" phase in a number of facilities, especially secondary-level hospitals. On the other hand, the Ministry of Health's release emphasized the obligation of RME with a transition deadline of December 31, 2023, which has shown the urgency of consolidating the quality of implementation [2].

To develop a sharper adoption strategy, this study combines the Technology Acceptance Model (TAM), which consists of perceived ease of use (PEOU) and perceived usefulness (PU), with a Resource Orchestration lens to explain how training, technical support, and leadership orchestrate resources for nurses to achieve meaningful adoption. The theoretical foundation of TAM has been solid since Davis [3] extended to healthcare while UTAUT adds a social–organizational dimension that is relevant in the hospital context.

Three behavioral levers are focused on: digital competence (reducing cognitive friction when operating a system), personal innovativeness (accelerating “value discovery” through feature exploration), and trust (lowering perceived risk through assurance of security, reliability, and an audit trail). Across sectors such as education, services, and logistics, evidence shows that the combination of competence, exploratory habits, and trust increases PEOU/PU, forms positive attitudes, and drives intention and actual usage. In the context of RME, these principles translate to streamlined interfaces, intelligent defaults, repeatable prefill, learning sandboxes, super users, and upstream security and reliability communications.

Integrated contributions and objectives. This study offers (i) theoretical contributions through a hybrid TAM–Resource Orchestration model that simultaneously examines the roles of digital competence, personal innovativeness, and trust; (ii) empirical contributions in an underrepresented context, such as nurses in Indonesian secondary-level hospitals during the SATUSEHAT era; and (iii) practical contributions in the form of implementation prescriptions (scenario-based micro-learning, super user mentoring, and simplified documentation flow). In line with this, we aim to ask the following questions: to what extent digital competence and personal innovativeness increase PEOU and PU; how PEOU/PU shape attitudes; and to what extent attitudes drive intention to use RME by nurses in Class C hospitals, as a basis for increasing actual use and designing more precise interventions [4, 5].

2. Literature Review

2.1. Digital Competence

The development of digital competence theory has evolved from an initial focus on technical skills to a more comprehensive understanding, encompassing cognitive, social, and ethical aspects. In the early stages, Eshet-Alkalai [6], Bawden [7] and Sefton-Green, et al. [8] emphasizes the importance of information, media, and internet literacy in the use of technology. Bawden [9] then expanded this concept by incorporating knowledge, skills, and attitudes as core elements of digital competence, including the ability to evaluate information and software. Ferrari, et al. [10] develop a more comprehensive definition, encompassing knowledge, skills, and awareness in the use of technology for various purposes. Shokaliuk, et al. [11] adding aspects of digital security, problem solving, and critical thinking, while Martin and Grudziecki [12] introducing the stages of development from basic skills to digital innovation. Yunita [13] emphasizes the role of critical skills in digital collaboration and cybersecurity. Overall, this theory continues to evolve with changing technology and information needs, with a focus on critical literacy, innovation, and the safe and responsible use of technology.

2.2. Personal Innovative

The development of the theory of personal innovativeness (PI) began with the introduction of the concept of diffusion of innovation by Rogers and Shoemaker [14] which examines how quickly society adopts new innovations. This diffusion measure measures the adoption of new technologies and ideas by individuals, ranging from early adopters to laggards. Flynn and Goldsmith [15] developed this concept by dividing innovation into two main categories: global and domain-specific. Global innovation refers to a person's tendency to be willing to try new things in general, while domain-specific innovation refers to the readiness to accept innovations in a specific context, such as a particular technology or method. Agarwal and Prasad [16] then introduced Personal Innovativeness in Information Technology (PIIT), which highlights the importance of personal innovativeness in the context of information technology adoption. They demonstrated how personal innovativeness plays a crucial role in influencing one's attitudes and intentions to adopt new technologies, particularly within the framework of the Technology Acceptance Model (TAM), which takes into account factors such as ease of use and usefulness of the technology.

Goldsmith and Hofacker [17] introduced the concept of personal innovation that was more focused on a specific domain, which was then adapted and further developed by Lu, et al. [18]; Thatcher and Perrewe [19] and Pilav-Velic, et al. [20]. These researchers demonstrate how factors such as self-efficacy (confidence in one's ability to use technology) and risk-taking play a crucial role in overcoming the uncertainty that arises when facing new technologies. They argue that individuals who are confident and able to navigate uncertainty are more likely to adopt new technologies. Fagan, et al. [21] integrates the concept of personal innovativeness more deeply into TAM, linking personal innovativeness to ease of technology adoption and perceptions of its benefits. Xu and Gupta [22] and Rogers [23] emphasizes the relevance of personal innovation in the context of information systems, which plays a role in increasing the effectiveness and efficiency of technology use in organizations.

2.3. Technology Acceptance Model (TAM)

The development of the Technology Acceptance Model (TAM) was initiated by Davis [3] which identifies two core elements in technology adoption: perceived usefulness (PU) and perceived ease of use (PEOU). PU reflects the belief that technology can improve work performance, while PEOU refers to the ease of learning and using the technology.

Furthermore, Davis [3] emphasizes that between these two elements, PU has a more significant influence on user intention to adopt technology than PEOU. The emphasis on PU indicates that the practical benefits obtained from using technology are the primary factor that drives someone's decision whether or not to adopt the technology. This approach has become the basis for various studies and theoretical developments on technology adoption that continue to evolve over time.

Fusilier, et al. [24] introduced UTAUT, which is a further development of TAM. This model integrates additional factors not previously explained in TAM, such as social norms (social influence), facilitating conditions (facilitating conditions), and the influence of organizational culture, all of which provide a broader and more comprehensive understanding of the factors that influence technology adoption in social and organizational contexts. Although UTAUT introduces these new elements, PU and PEOU are retained as the two main factors influencing technology acceptance, indicating that both elements remain relevant in understanding technology adoption. This development helps explain that technology adoption is not only influenced by individual factors, but also by social norms, support provided by the organization, and other external factors that influence how technology is accepted in a given context.

2.4. Attitude

The development of attitude theory has gone through various stages, from a psychological perspective to its application in the context of technology acceptance. Spencer [25] as a mental condition encompassing a person's thoughts and feelings, with the influence of social environments such as parents and teachers in shaping an individual's attitudes Supartiningsih, et al. [26]. Fishbein and Ajzen [27] defined attitude as a combination of feelings that indicate acceptance or rejection of an object or behavior, measured using an evaluative scale, which became the basis of the Theory of Rational Action (TRA) and developed into the Theory of Planned Behavior (TPB). Baron and Byrne [28] and Kreitner, et al. [29] expands this concept by defining attitude as a subjective assessment of an object, reflecting a favorable or unfavorable response to an event or behavior. Ajzen [30] emphasizes that attitude is an internal state that influences an individual's actions toward an object or situation, which plays an important role in the Technology Acceptance Model (TAM). In TAM, a positive attitude toward technology predicts an individual's acceptance and intention to use it Bordalba and Bochaca [31] and Yu, et al. [32]. Bhatt and Shiva [33] added that attitudes also determine how a person evaluates the behavior of others in social situations and interacts with them. Recent studies such as research Hu, et al. [34] and Abramson, et al. [35] shows that positive attitudes toward technology can predict technology adoption. Overall, attitude theory has evolved from an initial understanding of mental states to a more complex concept, encompassing cognitive, emotional, and behavioral aspects, with important implications for understanding how attitudes influence one's decisions and behavior.

2.5. Intention to Use

The development of the concept of intention to use can be traced back to several behavioral theories that gradually shaped the understanding of individual intentions in using technology, products, or services. This began with the Theory of Planned Behavior (TPB) developed by Ajzen [30] where intention is considered as the motivation to perform a behavior, influenced by attitudes, subjective norms, and perceived behavioral control. This concept was then developed through the Technology Acceptance Model (TAM) introduced by Davis [3] which focused on two main factors, namely perceived usefulness and perceived ease of use, which shape the intention to use technology. In the late 1990s, TAM2 and the Unified Theory of Acceptance and Use of Technology (UTAUT) expanded this concept by adding performance expectancy, effort, social influence, and facilitating conditions. Furthermore, the concept of intention to use was adapted from intention to purchase in the marketing literature, as explained by Sanitnarathorn [36] where the intention to use technology is not only related to momentary decisions, but also to ongoing use. Wang and Li [37] adding indicators such as user readiness, frequency of use, and recommendations to others. In recent years, Ahmad, et al. [38] emphasizes the role of intentions in predicting behavior, while Al-Hattami and Almaqtari [39] expands on this by highlighting the importance of readiness and willingness to integrate technology into everyday life. New factors such as trust, risk propensity, and behavioral control increasingly influence this intention, as explained by Melati [40] and Arfansyah and Marsasi [41]. Finally, in the modern digital context, Hasan, et al. [42] Research shows that intention to use is expanding across online applications, with indicators such as recommendations, repeated use, and integration into daily routines. This overall development demonstrates how intention to use technology is a crucial element in the successful adoption and continued use of technology in the digital age.

3. Hypothesis Development

3.1. Digital Competence and Technology Acceptance Model (TAM)

Building on the Technology Acceptance Model (TAM), we argue that nurses' digital competence can be defined as the task-specific ability to document with standard templates and order sets, track supporting results, use electronic orders, reconcile medications, and respond to clinical decision support, which can enhance two core TAM beliefs: perceived ease of use and perceived usefulness. Empirical findings across various service contexts indicate that digital efficacy/ability correlates with PEOU, PU, and technology readiness/adoption [43-47]. We use this evidence as a conceptual basis for lowering similar expectations in nursing workflows that demand speed and precision. Mechanistically, digital competency

reduces cognitive load in documentation and handovers, reduces entry errors, accelerates information access, and streamlines interprofessional coordination, making the system feel easier and the clinical benefits more tangible.
From the various literature reviews above, the author proposes the following hypothesis:

H_1: Digital competence has a positive and significant influence on TAM.

3.2. Personal Innovativeness and Technology Acceptance Model (TAM)

Psychologically, more innovative individuals typically have high self-efficacy and curiosity, making learning new systems easier. Operationally, they adapt more quickly to documentation flows, utilize electronic orders and decision support, and discover more efficient ways of working. Consequently, the system is perceived as easier and more useful, which in turn strengthens intention and consistency of use. Empirical evidence across the domains of digital services and finance, while not specific to nursing, consistently links personal innovativeness with increased PEOU/PU and technology adoption, making it feasible to transpose to technology-intensive clinical environments such as hospital EMRs [48-55].
From the various literature reviews above, the author proposes the following hypothesis:

H_2: Personal innovativeness has a positive and significant influence on TAM.

3.3. Technology Acceptance Model (TAM) and Attitude

Nurses' attitudes toward technology reflect a comprehensive assessment of the implementation of digital systems in clinical practice, encompassing both acceptance and rejection. Within the TAM framework, beliefs about the system's ease of use (PEOU) and usefulness (PU) are key drivers of positive attitudes. When EMR modules prove efficient, accurate, informative, and support team coordination without a demanding learning curve, perceptions of "easy and useful" are strengthened, leading to more positive attitudes toward the technology. This effect is often exacerbated by self-efficacy, trust, and motivation to experiment. Evidence across digital services (though not specific to nursing) consistently links PEOU/PU with user attitudes [56].

From the various literature reviews above, the author proposes the following hypothesis:

H_3: TAM has a positive and significant influence on attitude

3.4. Attitude and Intention to Use

Findings in the user behavior literature show a consistent pattern: when technology is perceived as valuable, relevant, and non-burdensome, intentions to use it tend to increase. This pattern aligns with the Technology Acceptance Model (TAM), which positions attitudes as the link to intention to use. For nurses, as direct users, this assessment involves weighing benefits such as accuracy, speed, and coordination against potential burdens on the workflow. Studies also confirm that positive attitudes are reinforced through applicable training, responsive technical support, and user-friendly interfaces [32, 38, 57-60].

From the various literature reviews above, the author proposes the following hypothesis:

H_4: Attitude has a positive and significant influence on intention to use

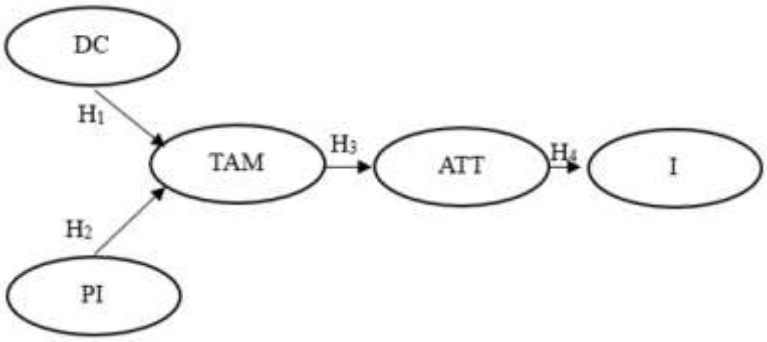

Figure 1.
Research Model.

Information: DC (*Digital Competence),* PI (*Personal Innovative),* TAM (*Technology Acceptance Model),* ATT (*Attitude),* I (*Intention to use)*

4. Methodology

This study uses a hypothesis-based explanatory quantitative research design to examine the relationship between technology acceptance variables among nurses at secondary-level hospitals in Java. The approach used is a causal, non-experimental survey method to validate the theoretical model is the Technology Acceptance Model (TAM) through statistical testing. The study population included nurses working in secondary-level hospitals affiliated with PERSI across provinces on Java Island. A purposive sampling technique was applied, with inclusion criteria of a minimum associate degree in nursing and at least two years of work experience. In total, 500 nurses participated in the final survey, meeting the sample adequacy rule for PLS-SEM and ensuring sufficient statistical power.

Primary data were obtained through a structured questionnaire using a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree). Prior to the main survey, a pilot test was conducted on 30 nurses from six secondary-level hospitals to ensure clarity of questions and a smooth completion process. The final survey was then distributed online and offline, depending on respondent accessibility.

Measurement of variables is carried out by adapting instruments that have been validated from various sources, namely: Digital Competence by Dai [61] as many as 7 items, Personal Innovativeness by Gunasinghe, et al. [62] as many as 4 items, TAM components which include Perceived Ease of Use and Perceived Usefulness by Yee-Loong Chong, et al. [63] 5 points each, Attitude by Yu, et al. [32] as many as 4 items, as well as Intention to Use by Sepasgozar, et al. [64]. There are four items.

Data analysis was conducted through several stages. First, instrument quality testing included construct validity using Exploratory Factor Analysis (EFA) with the help of IBM SPSS 25, where KMO and MSA values ≥ 0.5 were used as eligibility criteria, as well as reliability measured using Cronbach's Alpha with a threshold of ≥ 0.70 (or ≥ 0.60 for exploratory contexts). Second, structural model and hypothesis testing were conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) to obtain path coefficient estimates, statistical significance ($t \geq 1.96$; $p \leq 0.05$), and R^2 values as a measure of the model's explanatory power. Third, a difference test (ANOVA) was conducted to assess variations in construct scores between nurse groups based on demographic characteristics and work context.

This methodological design ensures that the instruments used have adequate validity and reliability, potential method bias is controlled, and the structural model is comprehensively tested. Therefore, the research results are expected to provide a strong empirical basis for implementation recommendations, particularly regarding training needs, technical support, and streamlining the digitalization process in secondary-level hospitals.

5. Results and Discussion

5.1. Descriptive Analysis and Respondent Difference Test

Descriptive analysis was conducted to provide an overview of respondent characteristics and the distribution of research variables. Data were collected through an online questionnaire using Google Forms. The participant criteria were nurses at a secondary-level hospitals in Java, with a minimum associate degree, and at least two years of work experience. A total of 500 respondents met these criteria.

The demographic profile shows that the majority of respondents were female (69%), aged 26–30 years (32%), and had a bachelor's degree (51%). Most had worked for more than two years (76%) and were from Banten Province (74%), followed by Jakarta (10%), West Java (8%), and Central Java (8%). These findings are consistent with the characteristics of the nursing profession in Indonesia, which is dominated by productive-age women with higher education.

Before further analysis, validity and reliability tests were conducted to ensure the instrument's suitability. The results showed two items that were neither valid nor reliable: DC No. 1 in the Digital Competence variable and PI No. 3 in the Personal Innovativeness variable; both were eliminated from subsequent analysis.

Next, Levene's test was used to test for homogeneity of variance between groups, while ANOVA was used to assess mean differences between demographic groups. Interpretation of the results follows the general rule: $p > 0.05$ indicates no significant difference, while $p < 0.05$ indicates a significant difference [65, 66].

The test results showed that based on gender, age, education, and work experience, there were no significant differences in Digital Competence, Personal Innovativeness, Technology Acceptance Model (TAM), Attitude, or Intention to Use (all $p > 0.05$). However, there were significant differences based on hospital location in the variables of Digital Competence ($p = 0.016$) and Personal Innovativeness ($p = 0.021$), which indicates that geographic factors influence the level of digital competence and innovative tendencies of nurses.

Basic statistical analysis was then performed on the study's main variables. Based on the descriptive results (Table 1), all variables had average scores above 3.5, indicating that respondents generally displayed positive attitudes toward all measured constructs, with the Technology Acceptance Model being the most dominant aspect.

Table 1.
Mean and Standard Deviation.

Variables	Average	Standard Deviation
Digital Competence	5.850	1.032
Personal Innovativeness	5.893	1.044
Technology Acceptance Model	5.992	0.997
Attitude	6.002	1.020
Intention to Use	6.037	0.995

The results indicate that Digital Competence and Personal Innovativeness are in the high category with moderate data variation. The Technology Acceptance Model recorded a high average (5.992) with a relatively homogeneous perception of technology acceptance. The Attitude variable had an average of 6.002, indicating the highest positive attitude towards technology use, followed by Intention to Use (6.037) which reflects a very strong and consistent intention to use among respondents.

Overall, all main variables showed high averages (range 5.7–6.0) with low to moderate standard deviations, indicating positive and consistent perceptions among nurses towards digital competence, personal innovation, technology acceptance, attitudes, and intentions to use technology in secondary-level hospitals in Java Island.

5.2. Hypothesis Test Analysis

Hypothesis testing in this study was conducted using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS) with the help of SmartPLS 4 software. Before testing the relationship between latent constructs, validity and reliability tests were conducted to ensure that all indicators used actually measure the intended constructs. This evaluation included outer loadings, Average Variance Extracted (AVE), Composite Reliability (CR), and Cronbach's Alpha.

After the instrument was declared valid and reliable, the analysis continued with testing the structural model (inner model) according to the proposed hypothesis. A bootstrapping procedure with 5,000 resamplings was used to obtain t-statistics and p-values as the basis for determining the significance of the relationship between variables. This approach allows for comprehensive testing of direct, indirect, and moderating effects, thus illustrating the relationship mechanisms that occur empirically within the research context.

5.3. Outer Model Evaluation

The outer model evaluation aims to assess the validity and reliability of the indicators. Reliability is assessed based on Cronbach's Alpha and Composite Reliability (CR) values with a minimum threshold of 0.70, while convergent validity is evaluated through factor loading and AVE values, with minimum criteria of 0.70 and 0.50, respectively [67].

Table 2 presents the outer loadings for all indicators across the five research constructs. All loadings were ≥ 0.70, indicating that each indicator adequately reflects its construct and meets convergent validity.

Table 2.
Outer Loadings.

Construct	Indicator	Loading	Information
Attitude (ATT)	ATT1, ATT4	0.952 – 0.952	Fulfil
Digital Competence (DC)	DC2, DC3, DC4, DC7	0.803 – 0.884	Fulfil
Intention to Use (I)	I2, I4	0.955 – 0.958	Fulfil
Personal Innovativeness (PI)	PI2, PI4	0.941 – 0.946	Fulfil
Technology Acceptance Model (TAM)	TAMD1.2, TAMD1.4, TAMD2.4	0.903 – 0.924	Fulfil

These values indicate that all indicators have high representational power for their respective constructs, so there is no need to delete additional indicators.

Next, convergent validity at the construct level was tested using the Average Variance Extracted (AVE) value. The results are presented in Table 3.

Table 3.
AVE.

Construct	AVE	Information
Attitude (ATT)	0.906	Fulfil
Digital Competence (DC)	0.732	Fulfil
Intention to Use (I)	0.915	Fulfil
Personal Innovativeness (PI)	0.890	Fulfil
Technology Acceptance Model (TAM)	0.836	Fulfil

All constructs had an AVE value ≥ 0.50, indicating that more than 50% of the indicator variance can be explained by the related latent construct. Thus, the convergent validity criteria have been met.

The construct reliability has also been confirmed through three measures, namely Composite Reliability (ρc), ρa, and Cronbach's Alpha, all of which are above the threshold of 0.70 as shown in Table 4.

Table 4.
Construct Reliability.

Construct	rho_c	rho_a	Alpha	Information
Attitude (ATT)	0.951	0.897	0.897	Reliable
Digital Competence (DC)	0.916	0.884	0.877	Reliable
Intention to Use (I)	0.955	0.907	0.907	Reliable
Personal Innovativeness (PI)	0.942	0.878	0.876	Reliable
Technology Acceptance Model (TAM)	0.939	0.902	0.902	Reliable

These values indicate that all constructs have high internal consistency and are reliable for use in testing structural models.

In addition, discriminant validity was also confirmed using the Fornell–Larcker criterion, by comparing the square root of the AVE to the correlation between constructs. The results in Table 4 show that each construct has a higher AVE root than the correlation with other constructs, indicating that discriminant validity has been met.

5.4. Inner Model Evaluation

Inner model evaluation is carried out to assess the strength and direction of the relationship between latent constructs, the model's ability to explain endogenous variables, and to ensure that there is no multicollinearity that interferes with the estimation.

The path coefficient results in Table 5 show that all relationships between constructs are positive and statistically significant ($p < 0.05$).

Table 5.
Path Coefficient.

Relationship between constructs	Original Sample (O)	T Statistics	P Values
Digital Competence → TAM	0.317	3.770	0.000
Personal Innovativeness → TAM	0.590	7.578	0.000
TAM → Attitude	0.898	71.070	0.000
Attitude → Intention to Use	0.905	59.036	0.000

The R^2 and adjusted R^2 values indicate the high predictive ability of the model (Table 6).

Table 6.
R^2.

Endogenous Construct	R^2	Adjusted R^2	Interpretation
Attitude	0.806	0.806	High/Substantial
Intention to Use	0.818	0.818	High/Substantial
TAM	0.757	0.756	High/Substantial

These findings confirm that the model has strong predictive ability in explaining the variance of endogenous variables, without any indication of the need to add new predictor constructs.

The effect size (f^2) in Table 7 shows the relative contribution of each exogenous construct to the endogenous variable.

Table 7.
f^2.

Relationship between constructs	f^2	Category
Attitude → Intention to Use	4.503	Big
Digital Competence → TAM	0.134	Small
Personal Innovativeness → TAM	0.465	Big
TAM → Attitude	4.157	Big

These results show that the greatest influence comes from the Attitude → Intention to Use and TAM → Attitude paths, which indicates that technology acceptance plays a strong role in shaping attitudes and usage intentions.

The model fit indices (SRMR = 0.045–0.065) also indicate a good fit, although the NFI = 0.838–0.852 is slightly below the 0.90 threshold. However, this is acceptable because PLS-SEM is oriented towards prediction, not overall model fit [67].

5.5. Hypothesis Testing Results

The final stage of the analysis is testing the causal hypothesis between latent constructs according to the conceptual framework. With a significance level of 5% ($\alpha = 0.05$) and criteria of t-statistic > 1.96 and p-value < 0.05, the test results are presented in Table 8.

Table 8.
Hypothesis Testing.

Hypothesis	Statement	Original Sample (O)	T Statistics	P Values	Information
H1	Digital Competence → TAM	0.317	3.770	0.000	Supported
H2	Personal Innovativeness → TAM	0.590	7.578	0.000	Supported
H3	TAM → Attitude	0.898	71.070	0.000	Supported
H4	Attitude → Intention to Use	0.905	59.036	0.000	Supported

All hypotheses received significant empirical support. This means that nurses' digital competence and personal innovation positively influence technology acceptance (TAM), which in turn increases positive attitudes toward technology and strengthens their intention to use it.

Figure 2 depicts the structural model and its path coefficient values, showing a strong and consistent relationship between constructs, so that overall this research model can be said to be empirically valid and has substantial explanatory power regarding the phenomenon of technology acceptance among hospital nurses.

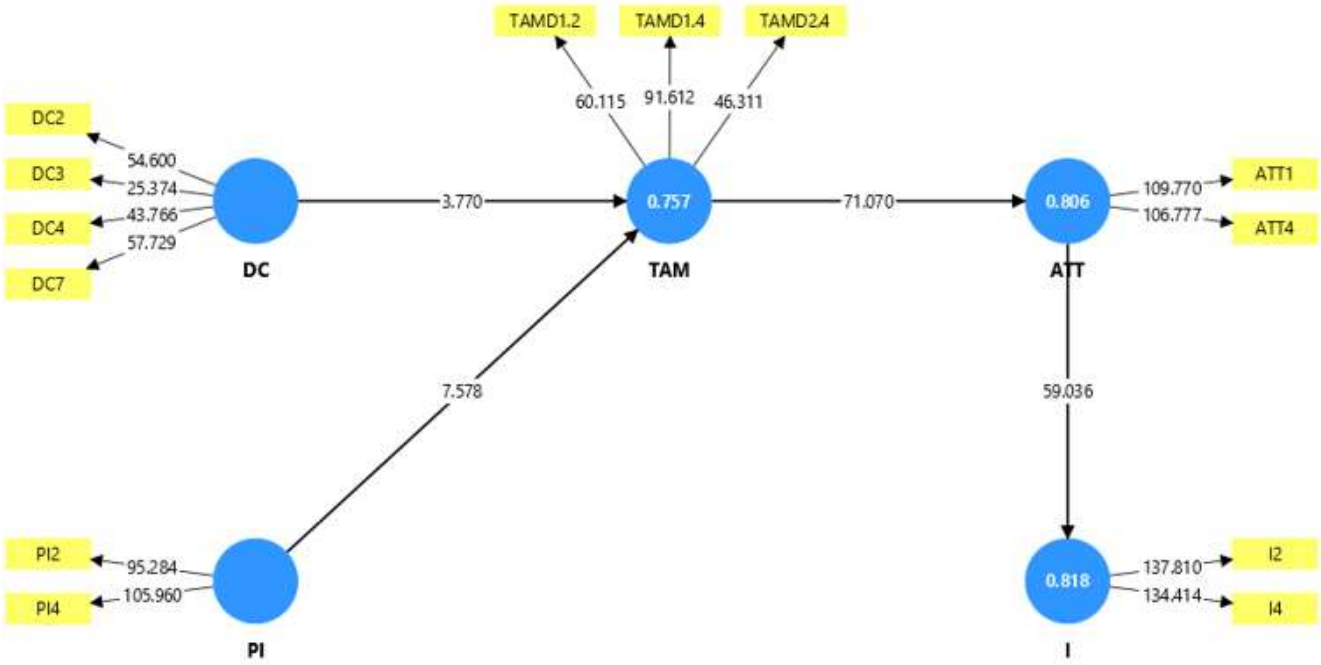

Figure 2.
Path Coefficients Diagram.

5.6. Discussion

The results of this study indicate that all tested variables have a significant and mutually reinforcing effect, as assumed in the research model. In general, nurses working in secondary-level hospitals in Java demonstrate high levels of digital competence, personal innovation, attitude, and intention to use technology. The average value of all variables is above 5.7, indicating that respondents tend to have a positive attitude towards all aspects measured, with the Technology Acceptance Model, Attitude, and Intention to Use occupying the highest positions. These findings illustrate that nurses have a strong readiness and willingness to adapt to digital systems, particularly in the use of Electronic Medical Records (EMR), which is now a crucial part of the transformation of healthcare services.

Interestingly, these results emerge from the context of a secondary-level hospitals, which typically operates with limited resources, both in terms of infrastructure and human resource capacity. The fact that nurses continue to demonstrate a positive acceptance of technology indicates a shift in mindset in the field: digitalization is no longer seen as an additional administrative burden, but rather as a means to improve efficiency, accuracy, and coordination between service units. In this regard, digital competence and personal innovation serve as the foundation that enables nurses to adapt effectively to changing work systems.

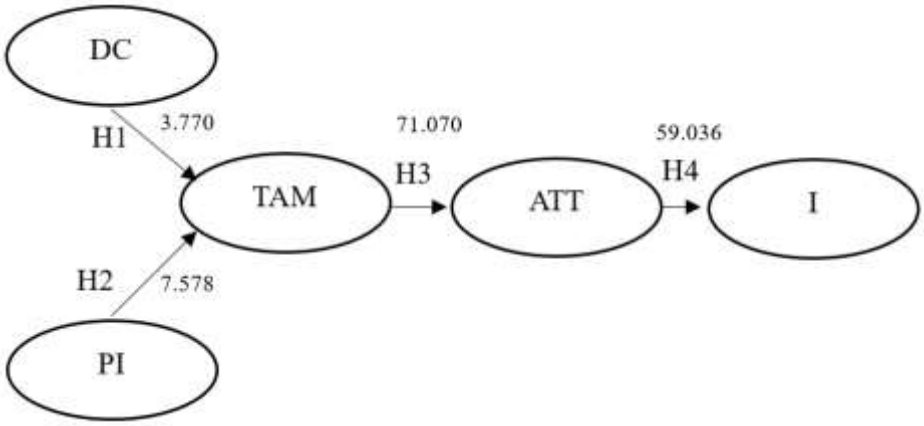

Figure 3.
Conceptual Model of Hypothesis Test Results.

The results of the outer model analysis indicate that almost all research indicators are valid and reliable, except for one statement in the Digital Competence (DC1) variable and one in Personal Innovativeness (PI3) which were declared invalid. This is understandable, considering that some nursing staff still have varying levels of confidence in using new technology. Nevertheless, the strength of the model remains very good, reflected in the high R^2 values for the endogenous constructs

(Technology Acceptance Model = 0.757; Attitude = 0.806; Intention to Use = 0.818), which indicates that the predictor variables have strong explanatory power regarding technology acceptance behavior.

These results show that the higher an individual's digital skills and willingness to try new things, the more positive their perception of the ease and usefulness of digital systems. Nurses with adequate digital literacy tend to understand EMR system functions more quickly, are more efficient in completing administrative tasks, and are more open to technological updates. Meanwhile, personal innovation plays a crucial role in bridging the intergenerational digital divide in the hospital environment. Innovative nurses are often early adopters, encouraging their colleagues to adapt to digital systems.

In the Indonesian context, administrative workloads often pose a challenge for nurses. The implementation of digital systems was initially perceived as burdensome due to the demand for new skills. However, this study shows that when nurses possess digital competency and an innovative attitude, this perception shifts to a positive one. Technology is increasingly seen as a tool that speeds up the recording process, reduces input errors, and facilitates interprofessional coordination. This phenomenon aligns with the spirit of national digital transformation through the SATUSEHAT program of the Indonesian Ministry of Health, which encourages the integration of hospital information systems across Indonesia.

Furthermore, the significant relationship between the Technology Acceptance Model, Attitude, and Intention to Use reinforces the theory that perceived ease and usefulness of technology are key drivers of positive attitudes and long-term usage intentions. When nurses perceive an EMR system as assisting their work, rather than adding to the burden, acceptance of the technology will naturally and sustainably increase. This positive attitude is crucial for coping with high work pressure in a hospital environment, as perceived usefulness can reduce resistance to change and increase job satisfaction.

Overall, the results of this study indicate that the successful implementation of digital systems in secondary-level hospitals depends not only on the availability of infrastructure or organizational policies, but also on individual readiness to learn, innovate, and be open to change. Digital competence and personal innovation were shown to be key drivers of positive perceptions of the system, which in turn strengthened attitudes and intentions to use technology consistently. These findings confirm that enhancing nurses' digital capacity is a strategic step to accelerate the transformation of healthcare services toward a more efficient, integrated, and technologically adaptive system.

From a theoretical perspective, these results enrich our understanding of technology acceptance mechanisms in the healthcare sector, particularly in resource-constrained workplaces. Practically, the study's findings suggest that hospitals need to invest not only in technological devices but also in strengthening individual capacity through digital training, mentoring, and an innovative culture that encourages experimentation. Thus, digital transformation in nursing should not only be a policy agenda but also part of a sustainable work culture shift.

6. Conclusion

This study shows that technology acceptance among nurses in secondary-level hospitals in Indonesia is primarily determined by their level of digital competence and personal innovation. These two factors shape positive perceptions of the ease and usefulness of digital systems (Technology Acceptance Model), which in turn strengthens attitudes and intentions to continue using technology in their daily work. The high average scores for all variables and the relatively homogeneous perceptions of respondents indicate that nurses are well-prepared to support the hospital's digital transformation.

These findings also confirm that a shift in perceptions of technology is underway. Digital systems, once considered to increase administrative burdens, are now being viewed as work tools that improve efficiency, accuracy, and interprofessional collaboration. In the context of national policies encouraging health data integration through the SATUSEHAT platform, the digital readiness of nursing personnel is key to the success of an effective and sustainable healthcare transformation.

7. Implications

Practically, the results of this study provide strategic direction for hospital management and policymakers. Improving digital competence and personal innovativeness should be a priority in developing nursing human resources. Practice-based training programs, mentoring for EMR system implementation, and providing space for small initiatives and innovations within work units will foster a natural acceptance of technology. Hospitals also need to foster a digital culture that encourages experimentation, knowledge sharing, and feedback on new systems without fear of error.

From an organizational perspective, it is crucial for hospital leaders to involve nurses as key users in any system change process. When nurses feel empowered and have a voice in technology-related decisions, adoption and implementation success significantly increase. These findings also provide input for local governments and the Ministry of Health to expand digital literacy and training, particularly in secondary-level hospitals that still face resource constraints.

From a theoretical perspective, this study strengthens the relevance of the Technology Acceptance Model in the context of healthcare services, while also demonstrating that personal factors such as digital competence and individual innovation play a significant role in shaping perceptions and attitudes toward technology. This integration of behavioral and individual competence aspects can form the basis for developing a more contextual and adaptive technology acceptance model for the public sector in Indonesia.

8. Limitations and Future Research

This study has several limitations that warrant consideration. First, the research design is descriptive and uses survey data from a single time period, so the relationships between variables are more associative than causal. Future research

could use a longitudinal approach to capture changes in attitudes and behaviors regarding technology use over time, particularly after the implementation of new digital systems.

Second, the study sample was limited to secondary-level hospitals on the island of Java. Although this region reflects geographic diversity and high levels of technology adoption, generalizations to other regions in Indonesia should be made with caution due to potentially significant differences in infrastructure, organizational culture, and policy support.

Third, this study did not include contextual factors such as organizational support, workload, and perceived technology risk, which could potentially moderate the relationship between digital competence and technology acceptance. Further research is recommended to incorporate these factors to gain a more comprehensive understanding.

Additionally, a mixed methods approach can be used to explore the qualitative dimensions of nurses' experiences with digital systems. Through in-depth interviews or focus group discussions, researchers can capture narratives and emotions not fully captured by quantitative data, such as feelings of awkwardness, initial resistance, or pride in successfully adapting to technology.

By broadening the research approach and scope, future studies can make a stronger contribution to the development of technology acceptance theory and the formulation of more inclusive digital transformation policies in the Indonesian health sector.

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