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THE USE OF THE TECHNOLOGY ACCEPTANCE MODEL (TAM) IN MEASURING USER ACCEPTANCE OF THE MAGELANG SMART CITY APPLICATION (MAGESTY) IN MAGELANG CITY

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ABSTRACT

The Magelang Smart City Application (Magesty) has been adopted by 8,575 users over the last three years. However, its technology acceptance still faces challenges regarding perceived ease of use and perceived usefulness, which subsequently lead to a low sustainability of the actual intention to use. This study aims to measure the extent of influence among the variables within the Technology Acceptance Model (TAM) on user acceptance of the Magesty application in Magelang City. This quantitative research utilized a survey method, collecting data by distributing questionnaires to 156 respondents. The data were analyzed using PLS-SEM with the SmartPLS tool. The research results indicate that all four hypotheses were accepted: perceived ease of use has a very strong influence on perceived usefulness; perceived usefulness has a moderate influence on behavioral intention to use; perceived ease of use has a moderate influence on behavioral intention to use; and behavioral intention to use has a very strong influence on actual system use. The findings also reveal that perceived ease of use and perceived usefulness are the main factors affecting the intention and actual use of the Magesty application for both the general public and MSME (Micro, Small, and Medium Enterprises) actors in Magelang City. Furthermore, user acceptance is significantly influenced by interface design, supporting infrastructure, digital literacy, and the sustainability of application development.

INTRODUCTION

The Era of the Industrial Revolution 4.0 and Society 5.0, which fundamentally relies on digital technology, has pushed governments to leverage Information and Communication Technology (ICT) to deliver quality public services and administration. The impact of this revolution is unavoidable, compelling governments globally to adapt and utilize ICT and digital technology to drive digital innovation (Susilawati *et al.*, 2023).

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In Indonesia, the government is utilizing ICT by implementing the Electronic-Based Government System (Sistem Pemerintahan Berbasis Elektronik—SPBE). Its implementation is mandated by Presidential Regulation Number 95 of 2018 concerning SPBE. This regulation aligns with Presidential Instruction of the Republic of Indonesia Number 3 of 2003 regarding the national policy and strategy for e-government development to enhance transparency, effectiveness, accountability, and efficiency in governance. SPBE, commonly known as e-government, involves using ICT in government administration to optimize performance and improve the quality of services provided to the community. Furthermore, e-government can improve the relationship between the government and the public (Mukhsin, 2020).

Consistent with this mandate, the Magelang City Government places its *e-government* implementation within the smart city concept to provide intelligent and innovative public services through the Magelang Smart City (Magesty) application. The Magesty application, initiated by the Magelang City Communication, Informatics, and Statistics Office (Diskominsta), was launched in June 2021. It serves as the implementation of nine key programs of the Magelang City Government aimed at delivering excellent, integrated, and modern services while strengthening the city's economic competitiveness. Additionally, it benefits the public by allowing them to access necessary public services efficiently through technology.

The Magesty application offers several features to users, including MSME Shopping, Essential Needs Shopping, Plaza Tani (Farmer's Plaza), JSAS Ambulance, CCTV, Simasbagia, Call Center 112, Siluman, RSUD Registration, DataGO, Population Data, Siamor, PBJ Services (Procurement), Legal Services, Public Service Mall, and PPID (Public Information and Documentation).

The Magesty application has been operational for approximately three years. Based on statistical data from the official Magesty website, accessed on October 31, 2024, there are 8,575 registered users. This figure indicates a process of digital technology acceptance by the people of Magelang City. To analyze this phenomenon, the research employs the Technology Acceptance Model (TAM), which is the most widely used theory for analyzing user acceptance of technology (Safitri *et al*., 2022).

TAM is a framework model designed to predict and explain an individual's acceptance of technology (Nugraha *et al*., 2023). This study utilizes a modified TAM model adapted from Venkatesh and Davis (in Fadhilah et al., 2024). Four variables will be used in this research: perceived ease of use and perceived usefulness. These two variables, in turn, are hypothesized to influence behavioral intention to use, and ultimately, actual system use of the Magesty application.

However, the perception of the ease of use of the Magesty application in Magelang City remains questionable, as users still experience difficulties operating it. These include a lack of

integration with other services, limited features for iOS devices, and features that are not intuitive enough. Similarly, the perceived usefulness of the Magesty application is also being questioned. While the application aims to enhance the competitiveness of MSMEs, many business owners report no significant increase in turnover (Satwika *et al*., 2023). Furthermore, Magelang residents often prefer using other *e-commerce* platforms deemed more efficient and trustworthy, which affects their intention to continue using the Magesty application.

Moreover, users exhibit a low intention to use the Magesty application routinely. This is attributed to a lack of engaging features, low public trust in government systems, and minimal government outreach (information dissemination) to the public, all of which hinder the intention to use the application. These issues can negatively impact the actual system use of the Magesty application in Magelang City. If the acceptance rate remains low, the government risks budgetary waste in application development that doesn't yield optimal results and could diminish public trust. Conversely, the community and MSMEs lose opportunities to utilize digital services that could enhance their efficiency and competitiveness.

In light of these issues, the researchers are interested in measuring the extent of influence among the variables in the modified TAM model on user acceptance of the Magesty application in Magelang City. This research is critical because measuring the magnitude of influence among TAM variables provides an understanding of the factors affecting user acceptance of the Magesty application in Magelang City. The findings can then serve as a basis for the application's future development and refinement.

Previous studies have also employed the TAM model to identify factors influencing user acceptance of information technology. For instance, the 2024 study by M. R., Fadhilah, R. Hanani, & A. Z. Rahman applied the TAM model to understand community acceptance and use of the "Magelang Cerdas" application, utilizing a quantitative method and targeting users who had accessed the application. The findings indicated that perceived usefulness and perceived ease of use significantly influenced the acceptance of the "Magelang Cerdas" application, thus validating the TAM model used. It is important to note that the "Magelang Cerdas" application is different from the "Magelang Smart City (Magesty)" application, as confirmed by the Diskominsta of Magelang City's informatics division.

In 2023, A. N. Rohman, M. Mukhsin, & G. Ganika applied the TAM model to investigate factors influencing the actual use of the Tokopedia e-commerce platform, employing a quantitative method. Their results proved that perceived ease of use, perceived usefulness, user attitude, and behavioral intention all positively influenced actual usage. H. Safitri, D. P. Rakhmadani, & S. D. Alika (2022) also used the TAM model to identify factors influencing public acceptance of the WeTV

application in Java Island, using a quantitative method and simple random sampling. Their results affirmed that the most influential factor was the relationship between perceived ease of use and perceived usefulness.

Furthermore, F. S. Rahayu, D. Budiyanto, & D. Palyama (2017) utilized the TAM model to determine factors influencing the acceptance of e-learning by UAJY students, using a quantitative method and simple random sampling. Their findings showed that one hypothesis was rejected: perceived usefulness did not influence behavioral intention to use, attributed to students' lack of interest. The other five hypotheses were accepted, indicating an interrelation among the variables. In another study, I. Mahendra (2016) used the TAM model to identify factors influencing the successful implementation of the GIA information system at PT. ARI. Using a quantitative method, the results showed that three out of seven hypotheses were rejected: perceived ease of use on attitude toward using, attitude toward using on intention to use, and perceived usefulness on actual use.

Thus, the novelty of this research focus is to measure the magnitude of influence among variables in the modified TAM model to provide an understanding of the factors affecting user acceptance of the Magesty application in Magelang City. Based on the description above, the researcher is motivated to study the Magesty application under the title: "The Use of the Technology Acceptance Model (TAM) in Measuring User Acceptance of the Magelang Smart City Application (MAGESTY) in Magelang City."

LITERATURE REVIEW

E-Government

E-government is a method for the government to leverage the most innovative Information and Communication Technology (ICT), particularly through applications and websites, to provide the public with more convenient access to services (Nugraha *et al*, 2023). Udoyo states that implementing e-government in administration can yield several benefits, such as enhancing service quality, transparency, accountability, responsiveness, reducing administrative costs, empowering the community, and improving interaction between the government and the public (Basir & Syamsiar, 2023). However, the success of e-government implementation relies on three factors according to Indrajit et al. (in Anugrah et al., 2023): Support, Capacity, and Value. Indrajit et al. (in Anugrah et al., 2023) further explain that there are several key determinants that dictate the readiness level for implementing e-government in a region, including: telecommunication infrastructure, where networks, computer hardware, and other facilities must be well-maintained as this is a crucial factor; human resource readiness, which requires sufficient expertise and competence from every individual as this significantly influences e-government readiness; availability of funds and budget, where the

government must be ready with the necessary budget for development, maintenance, and operational costs; legal framework, which can ensure a conducive environment, data/information security, and intellectual property rights; and paradigm shift, as a change in mindset can encourage awareness, habits, and the desire to alter attitudes, behavior, and working methods.

For e-government implementation to be effective and sustainable, it naturally requires good governance. According to Indrajit et al. (in Anugrah et al., 2023), effective management must consider six components: content development, competency building, connectivity, cyber laws, citizen interface, and capital. With sound governance, e-government can drive digital transformation at the local level, such as the Magelang Smart City (Magesty) application in Magelang City. However, the success of the Magesty application is inevitably linked to user acceptance of the technology.

E-Government Analysis Model

In 1989, Fred Davis first introduced the Technology Acceptance Model (TAM) as a framework model capable of predicting and explaining user acceptance of a specific technology. The TAM model explains that external factors can influence intention and actual use through their effect on perceived ease of use and perceived usefulness (Nugraha *et al*., 2023). This TAM model is used to provide an understanding of the factors that influence user acceptance of information technology. The TAM model diagram by Davis (Fadhilah et al., 2024) is illustrated below.

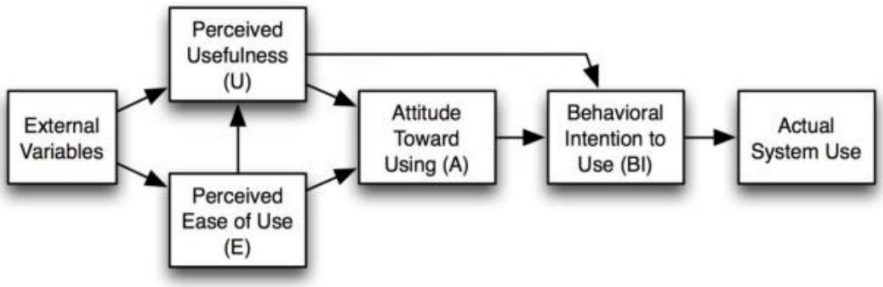

Figure 1. Original Technology Acceptance Model (TAM)
Source: Davis in Fadhilah et al. (2024)

Subsequently, the TAM model above was modified to include only four variables. Venkatesh and Davis in Fadhilah et al., (2024) stated that the variable of attitude toward use should be removed because empirical research results indicated that this attitude did not influence intention.

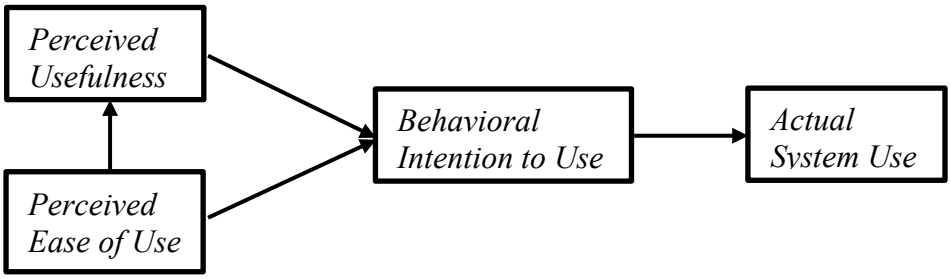

Figure 2. Modification of the TAM Model
Source: Venkatesh and Davis in Fadhilah et al. (2024)

By removing the attitude-toward-use variable, the main focus of the TAM model returns to two core variables: perceived ease of use and perceived usefulness. Subsequently, these two perceptions will directly influence behavioral intention to use, which ultimately impacts actual system use. This modified version of the TAM model will be used to measure and analyze user acceptance of the Magesty application in Magelang City. The explanation of the variables in the modified TAM model by Venkatesh and Davis in Fadhilah *et al.* (2024) is outlined in the following paragraphs.

Perceived ease of use is defined as the user's perception that using a particular technology is free from hard effort and involves no difficulty (Venkatesh and Davis in Fadhilah et al., 2024). This ease reduces the energy, mental effort, and time spent on using the technology. The indicators for Perceived Ease of Use include: ease of learning, ease of achieving goals, clarity and comprehensibility, flexibility, freedom from difficulty, and overall ease of use (Permana, 2018).

Perceived usefulness is an individual's perception that the benefits felt while using a technology can enhance their performance (Venkatesh and Davis in Fadhilah et al., 2024). The indicators for this perception include: faster completion, simplification, performance enhancement, increased productivity, effectiveness, and overall benefit (Permana, 2018).

Behavioral intention to use is the conscious behavioral intent of an individual to continue using a technology (Rahayu *et al*., 2017). The indicators for behavioral intention to use include: using anytime, using under any condition, continuous intention to use, and expectation of using (Rahayu *et al*., 2017).

Actual system use refers to the actual usage of the system (Rahayu *et al*., 2017). The indicators of actual system use include: real usage, frequency of use, and user satisfaction (Rahayu *et al*., 2017).

Smart City

A smart city is the process of developing and managing a city by utilizing information and communication technology (ICT) to connect, monitor, and manage resources more efficiently and effectively (Kurniawan *et al*., 2023). A smart city is closely related to technology application; with the help of technology, data from various sources—including public services, transportation, infrastructure, and other environments—can be collected and managed. This data can then be used to

make wiser and more efficient decisions, and it allows city residents to gain rapid access to information and services. The smart city concept encompasses three main elements: the human, technology, and institutional aspects (Dewi *et al*,. 2021). A city can be designated as "smart" when its definition, components, and performance steps are examined. The definition of a smart city also includes the quality of its society and community in leveraging technology. There are various elements and dimensions that characterize a smart city. According to Boyd Cohen in Kurniawan et al., (2023) six dimensions must be realized for a smart city to come to fruition: smart governance, smart economy, smart mobility, smart environment, smart people, and smart living.

RESEARCH METHODS

This research was conducted using a quantitative method, employing a survey design. The survey involved distributing questionnaires both offline (physical forms) and online (Google Forms) to users of the Magesty application in Magelang City, specifically targeting MSME actors and the general public. Questionnaires served as the primary data source, and the data collection technique involved a predetermined list of statements or questions to be completed by the respondents. This questionnaire instrument was adapted from previous studies that also utilized the Technology Acceptance Model (TAM). The population for this study consisted of Magesty application users—comprising both MSME actors and the general public—totaling 8,575 users. From this population, the sample size was calculated using the Yamane formula with an error tolerance of 8%. The sample calculation yielded 156.25 respondents, resulting in a required sample size of 156 respondents. The sampling technique employed was non-probability sampling, specifically purposive sampling. This type of sampling was chosen because the researchers sought information from specific groups based on predefined criteria. Subsequently, the data in this study were analyzed using the PLS-SEM (Partial Least Squares-Structural Equation Modeling) technique with the SmartPLS 4.1 software tool. PLS-SEM was utilized because each latent construct has indicators measured through various items, allowing the analysis to measure not only the relationship between indicators and constructs (the outer model) but also to illustrate the relationships between the latent constructs themselves (the inner model).

RESEARCH RESULTS

Respondent Distribution

The analysis of respondent distribution covered several pieces of information: gender, age, latest education level, occupation, and address. The results of the researcher's analysis are as follows.

Gender

Table 1. Respondent Data Based on Gender

No	Gender	Quantity	Percentage
1	Male	76	49%
2	Female	80	51%

Source: Data processed by the Researcher, 2025

The data above shows that the average user of the Magesty application in Magelang City is female, totaling 80 respondents, or 51%. This figure represents a slight difference between the number of male and female respondents. It can be concluded that the level of user acceptance of the Magesty application is relatively balanced between the two genders, meaning there are no significant gender-related barriers in accessing and using the application. This demonstrates that the Magesty application has been designed to be user-friendly, allowing anyone to use it.

Age

Table 2. Respondent Data Based on Age

No	Age	Quantity	Percentage
1	18-25	63	40%
2	26-35	31	20%
3	36-45	30	19%
4	>45	32	21%

Source: Data processed by the Researcher, 2025

Based on the table above, the users of the Magesty application are dominated by the young, early productive age group, who are generally very familiar with technology. Consequently, the presence of the Magesty application in Magelang City is highly significant in assisting the fulfillment of public service needs for the 18–25 age group, who tend to be more accustomed to using digital technology.

Latest Education Level

Table 3. Respondent Data Based on Latest Education Level

No	Latest Education Level	Quantity	Percentage
1	Elementary/Equivalent	0	0%
2	Junior High School/Equivalent	0	0%
3	Senior High School/Equivalent	105	67%
4	Diploma 1/Diploma 2/Diploma 3	11	7%
5	Bachelor/Master/Doctor	40	26%

Source: Data processed by the Researcher, 2025

Based on the table above, the users of the Magesty application in Magelang City are dominated by senior high school graduates who are still in their productive years, early career workers, or the general public. This figure also indicates that the Magesty application is easily accepted by users—both MSME actors and the general public of Magelang City—with a secondary education level. This suggests that the Magesty application's design is user-friendly and does not require a high level of technological literacy.

Occupation

Table 4. Respondent Data Based on Occupation

No	Occupation	Quantity	Percentage
1	MSMEs	50	32%
2	Private Sector Employee	21	13%
3	Civil Servant	21	13%
4	University Student	42	27%
5	Contract-Based Government Worker	10	6%
6	Daily Contract Worker	6	4%
7	Army	1	1%

Source: Data processed by the Researcher, 2025

Based on the table above, user acceptance of the Magesty application is strongly influenced by the alignment between user needs, service features, and the digital literacy level of each group. Furthermore, the fact that the Magesty application is used by respondents from the formal, informal, and even military sectors demonstrates that the application is open, accessible to all segments, highly adaptive, and has the potential to enhance the quality of digital public services across various layers of society.

Address

Table 5. Respondent Data Based on Address

No	Address	Quantity	Percentage
1	North Magelang	53	34%
2	Central Magelang	51	33%
3	South Magelang	52	33%

Source: Data processed by the Researcher, 2025

The table above indicates that user acceptance of the Magesty application in Magelang City is not dominantly influenced by geographical factors within the city. Users across all sub-districts of Magelang City have equivalent access to information, technology, and digital services, particularly the Magesty application.

Results of the Measurement Model Evaluation (Outer Model)

Convergent Validity

Convergent validity testing assesses whether each item (statement) is valid in a convergent manner. This test considers two main criteria: the Outer Loading and the Average Variance Extracted (AVE). For an outer loading value to be acceptable and establish validity, it must be greater than 0.7 (Hair *et al*., 2019).

Table 6. Results of the Loading Factor Test

No	Variable	Indikator	*Factor Loading*	Keterangan
1.	*Perceived Ease of Use*	PEOU1	0.794	Valid
		PEOU2	0.803	Valid
		PEOU3	0.725	Valid
		PEOU4	0.716	Valid
		PEOU5	0.725	Valid
		PEOU6	0.816	Valid
2.	*Perceived Usefulness*	PU7	0.784	Valid
		PU8	0.702	Valid
		PU9	0.740	Valid
		PU10	0.831	Valid
		PU11	0.796	Valid
		PU12	0.775	Valid
3.	*Behavioral Intention to Use*	BI13	0.709	Valid
		BI14	0.752	Valid
		BI15	0.828	Valid
		BI16	0.842	Valid
4.	*Actual System Use*	AU17	0.760	Valid
		AU18	0.758	Valid
		AU19	0.737	Valid
		AU20	0.818	Valid

Source: Data processed by the Researcher, 2025

Of the 20 existing indicators, the outer loading values were all greater than 0.70, confirming that every indicator tested is valid in measuring its respective variable. The next step is testing the Average Variance Extracted (AVE) value for each variable. The results are presented in the following table.

Table 7. Results of the Average Variance Extracted (AVE) Test

Variable	*Average Variance Ectracted (AVE)*
Perceived Ease of Use	0.584
Perceived Usefulness	0.597
Behavioral Intention to Use	0.616
Actual System Use	0.591

Source: Data processed by the Researcher, 2025

The Average Variance Extracted (AVE) value for every variable used is greater than 0.50, thus successfully meeting the requirement for convergent validity (Sarstedt *et al*., 2017). This indicates that the variables possess sufficient validity or consistency, meaning they can explain 50% or more of the variance in their indicators.

Discriminant Validity

Discriminant validity testing involves comparing the correlation between constructs with the square root of the Average Variance Extracted (√AVE), a method commonly known as the Fornell-Larcker criterion.

Table 8. Results of the Fornell-Larcker Test

	AU	BI	PEOU	PU
AU	0.769			
BI	0.716	0.785		
PEOU	0.747	0.726	0.764	
PU	0.685	0.697	0.745	0.773

Source: Data processed by the Researcher, 2025

For the Actual System Use (AU) construct, the square root of the AVE (√AVE) is 0.769. This confirms that the discriminant validity for the AU variable is met, as the √AVE value is greater than its correlation with any other variable listed below it. This assessment also holds true for the other variables—Behavioral Intention (BI), Perceived Ease of Use (PEOU), and Perceived Usefulness (PU)—as their √AVE values are all greater than their correlations with other variables. Consequently, the requirement for discriminant validity using the √AVE method has been fulfilled. Next, the Heterotrait-Monotrait Ratio (HTMT) test was performed. According to Henseler et al., (2015) discriminant validity is considered satisfied if the tested HTMT value is less than 0.90.

Table 9. Results of the Heterotrait-Monotrait Ratio (HTMT) Test

	AU	BI	PEOU	PU
AU				
BI	0.887			
PEOU	0.891	0.877		
PU	0.812	0.841	0.854	

Source: Data processed by the Researcher, 2025

The presented table shows that the HTMT values in this study are all satisfied. This is because the HTMT value for every pair of variables is less than 0.90, thus fulfilling the discriminant validity evaluation using the HTMT criterion.

Composite Reliability

According to Sarstedt et al., (2017), a value can be considered reliable if the composite reliability (ρc) value is greater than 0.70. The results of the composite reliability test are displayed in the following table.

Table 10. Results of the Composite Reliability Test

Variable	*Composite Reliability (rho-c)*	Keterangan
Perceived Ease of Use	0.894	Reliabel
Perceived Usefulness	0.899	Reliabel
Behavioral Intention to Use	0.864	Reliabel
Actual System Use	0.852	Reliabel

Source: Data processed by the Researcher, 2025

The table above shows that every variable the researcher used has a value greater than 0.70, meaning the reliability requirement for these variables has been fulfilled.

Cronbach's Alpha

The second stage of reliability testing measured is Cronbach's Alpha. According to Sarstedt et al., (2017), a value can be considered reliable if the Cronbach's Alpha value is greater than 0.70. The table showing the results of the Cronbach's Alpha test is below

Table 11. Results of the Cronbach's Alpha Test

Variable	*Cronbach's Alpha*
Perceived Ease of Use	0.857
Perceived Usefulness	0.864
Behavioral Intention to Use	0.792
Actual System Use	0.772

Source: Data processed by the Researcher, 2025

Based on the results above, all variables have met the standard for reliability because each of them has a Cronbach's Alpha value above 0.70.

Results of the Structural Model Evaluation (Inner Model)

Path Coefficient

The path coefficient test is used to understand the direction of a hypothesis and the magnitude of the influence of one variable on another. If the hypothesis assessment has a positive direction, the value ranges from 0 to 1, while a negative direction ranges from −1 to 0.

Table 12. Results of the Path Coefficient Test

Variable	Original Sample (O)	Sample Mean (M)	5.0%	95.0%
PEOU (X1) -» PU (X2)	0.745	0.748	0.688	0.801
PU (X2) -» BI (Y1)	0.350	0.347	0.181	0.507
PEOU (X1) -» BI (Y1)	0.466	0.470	0.309	0.631
BI (Y1) -» AU (Y2)	0.716	0.722	0.654	0.781

Source: Data processed by the Researcher, 2025

The presented table shows that all values are within the range of 0 to 1. This means that the perceived ease of use variable positively influences perceived usefulness by 0.745. Furthermore, both perceived usefulness and perceived ease of use positively influence behavioral intention to use, with PU valued at 0.350 and PEOU at 0.466. The smaller PU value indicates that perceived usefulness is not yet the primary driver for behavioral intention to use, and that ease of use has a greater influence on behavioral intention to use in this context. Additionally, the behavioral intention to use variable has a value of 0.716, meaning it positively influences actual system use.

Coefficient of Determination (R-Square)

R-Square is used as a measure to test how well the exogenous variables influence the endogenous variables.

Table 13. Results of the R-Square Test

Variable	*R-Square*	*R-Square Adjusted*
AU (Y2)	0.513	0.510
BI (Y1)	0.582	0.577
PU (X2)	0.555	0.552

Source: Data processed by the Researcher, 2025

The table above shows that the R-Square value for Actual System Use (AU) is 0.513. This value indicates that the Behavioral Intention (BI) variable can explain 51.3% of the influence on the AU variable, placing the effect in the moderate category, while the remaining 48.7% is attributed to other variables outside the studied model. Next, the R-Square value for the BI variable is 0.582, showing that the Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) variables simultaneously explain 58.2% of the influence on the BI variable. This influence is also considered moderate, with 41.8% caused by other variables outside the model. Finally, the R-Square value for the PU variable is 0.555, indicating that the PEOU variable can explain 55.5% of the influence on the PU variable. This influence also falls into the moderate category, with 44.5% attributed to other variables outside the model.

These results suggest that the objective of the Magesty application—to provide excellent, integrated, and modern services and to strengthen the city's economic competitiveness—has not yet been fully achieved. There is still room for improvement so that the application can truly contribute maximally to Magelang City's digital transformation.

Hypothesis Testing (Resampling Bootstrapping)

In this test, the criteria used for the hypothesis testing method are that the p-value must not be more than 0.05 and the t-statistic must be greater than 1.96 (Hair et al., 2019). hese criteria are used to determine whether the hypothesis is accepted or rejected.

Table 14. Bootstrapping Data Processing

Hypothesis	Variable	Original Sample (O)	T Statistic	*P-Value*
H1	PEOU (X1) -» PU (X2)	0.745	21.443	0.000
H2	PU (X2) -» BI (Y1)	0.350	3.548	0.000
H3	PEOU (X1) -» BI (Y1)	0.466	4.763	0.000
H4	BI (Y1) -» AU (Y2)	0.716	18.523	0.000

Source: Data processed by the Researcher, 2025

The presented table shows that H1, H2, H3, and H4 all have p-values not greater than α (0.05) and t-statistics greater than 1.96. Therefore, the results confirm that the null hypothesis (H0) is rejected, establishing a significant relationship between all pairs of variables.

Nevertheless, when examining the magnitude of the direct influence coefficients for each variable, the influence of Perceived Usefulness (PU) on Behavioral Intention (BI) is found to be the smallest, at only 0.350, compared to the relationships between the other variables. Conversely, the influence of Perceived Ease of Use (PEOU) on BI is higher, at 0.466, indicating that ease of use is the more dominant factor in driving the behavioral intention to use the Magesty application. This finding affirms that the simplicity of accessing and operating the application is the main appeal. The results of this hypothesis testing are further detailed in the following table.

Table 15. Results of Hypothesis Testing

No	Hypothesis (H_0)	Hypothesis (Ha)	*P- Value*	Remarks
1	H_0 = PEOU does not significantly influence PU	H_1 = PEOU significantly influences PU	0.000	H_0 rejected
2	H_0 = PU does not significantly influence BI	H_2 = PU significantly influences BI	0.000	H_0 rejected
3	H_0 = PEOU does not significantly influence BI	H_3 = PEOU significantly influences BI	0.000	H_0 rejected
4	H_0 = BI does not significantly influence AU	H_4 = BI significantly influences AU	0.000	H_0 rejected

Source: Data processed by the Researcher, 2025

DISCUSSION

Perceived Ease of Use Positively and Significantly Influences Perceived Usefulness

The results of the first hypothesis test (H1) show that Perceived Ease of Use (PEOU) has a very strong influence on Perceived Usefulness (PU) of the Magesty application in Magelang City, with a path coefficient value of 0.745 (or 74.5%). This means that users' perception of the application's ease of use directly contributes 74.5% to their perception of its benefits. The easier the application is to use, the greater the benefits users perceive. This finding is consistent with previous research by Safitri et al. (2022), Rahayu et al. (2017), and Mahendra (2016), which also demonstrated a positive and significant relationship between PEOU and PU.

This finding reinforces that ease of use is a central component in the success of the Magesty application in Magelang City, as the community prioritizes the ease of operation, especially in digital public service systems. The ease of using the Magesty application strongly encourages user acceptance of the digital technology.

The relationship between these two variables is strengthened by several external factors, such as the readiness of the technological infrastructure (availability of public WiFi down to the neighborhood level), technical support from government agencies, and the application's intuitive and user-friendly interface design. The demographic characteristics of users, particularly the relatively digitally literate younger generation, are also a significant supporting factor. Furthermore, social factors, such as community and environmental encouragement, influence the perception of both ease and usefulness.

Users from the general public rate a clear application display, simple navigation, and neat public service structure as the main factors for ease. Meanwhile, MSME actors benefit from the easily operable digital shopping features for product promotion and sales. However, some MSMEs less accustomed to technology still require further training to utilize the features optimally.

Thus, perceived ease of use is proven to be a key factor in increasing perceived usefulness, a relationship strengthened by infrastructure, social support, and design. The differing focus of perceived benefits between the general public and MSME actors highlights the importance of adaptive strategies and improved digital literacy to maintain the sustainable use of the Magesty application in Magelang City.

Perceived Usefulness Positively and Significantly Influences Behavioral Intention to Use

The results of the second hypothesis test (H2) show that Perceived Usefulness (PU) has a moderate influence on Behavioral Intention to Use (BITU) the Magesty application in Magelang City, with a path coefficient value of 0.350 (or 35%). Although falling into the moderate category, this result still indicates that the perception of the application's benefits plays an important role in shaping users' intention to continue using the application sustainably. This finding serves as an early indicator of the effectiveness of *e-government* implementation in Magelang City. This result is consistent with studies by Safitri et al. (2022) and Mahendra (2016), which state a positive relationship between PU and BITU. However, it differs from the finding of Rahayu et al. (2017), which found no significant relationship between the two due to low user enthusiasm for the information system.

In this study, the influence of perceived usefulness on behavioral intention to use is driven by external factors, such as the availability of technological infrastructure through public WiFi, and features like CCTV and DataGO that facilitate access to information. Nevertheless, this influence remains moderate due to several constraints, such as limited market access for MSMEs, competition with other e-commerce platforms, low public trust, and features that do not yet fully align with user needs.

The general public tends to view the Magesty application as an informative tool rather than a productive one. Meanwhile, MSMEs do not yet consider the application capable of significantly increasing business efficiency. System limitations, low digital literacy, and a lack of productive features further weaken the perception of the application's usefulness.

The moderate influence of perceived usefulness on behavioral intention to use suggests that the added value of the Magesty application is not yet sufficient to encourage long-term commitment and usage. The success of e-government is not merely the presence of an application but must be supported by strengthening content, connectivity, competency building, citizen interface, and security. The development strategy for the Magesty application must be adapted to user characteristics. The general public needs improved digital literacy and service relevance, while MSMEs require stronger digital economic features, market integration, and business training. Without these strategic steps, the influence of PU on BITU will remain low, and the optimal potential of the Magesty application cannot be fully realized.

Perceived Ease of Use Positively and Significantly Influences Behavioral Intention to Use

The results of the third hypothesis test (H3) show that Perceived Ease of Use (PEOU) has a moderate influence on Behavioral Intention to Use (BITU) the Magesty application in Magelang City, with a path coefficient value of 0.466 (46.6%). Although also in the moderate influence category, this value is higher than that of Perceived Usefulness, indicating that ease of use plays a more dominant role in driving users' behavioral intention to use the application routinely. This finding aligns with the research of Japarianto et al. (2024), which showed that the ease of use of an application positively and significantly affects behavioral intention to use.

The influence of these two variables suggests that users perceive the Magesty application as having a simple interface, being easy to understand, and having clear menu navigation. The intuitive visual design, neat menu structure, and direct access to features like MSME Shopping, CCTV, and DataGO are important factors that strengthen the perception of ease of use. However, a gap still exists between technical ease and functional convenience. Some users encounter difficulties finding the specific services they need, indicating that ease of use has not fully addressed the real needs of the community and MSME actors.

In this context, external factors such as technology infrastructure support, technical assistance from the government, users' prior technology experience, social factors, and the quality of the interface design play a crucial role in strengthening the relationship between PEOU and BITU. Reliable infrastructure and adequate digital access reinforce the positive perception of ease, while technical support and prior experience accelerate user adaptation to the application. Conversely, low digital literacy, infrastructure limitations, and a lack of service integration and system updates are external barriers that weaken the influence of PEOU on BITU. Therefore, the perception of ease does not only depend on the application's technical characteristics but also on the extent to which the external environment supports the creation of a positive and sustainable user experience.

The general public assesses ease of use based on quick access and a simple display, while MSME actors assess ease from the perspective of operational simplicity and business support. However, limitations in the MSME Shopping feature, minimal technical guidance, and an inefficient transaction flow mean they do not fully experience the maximum benefit.

From the perspective of *e-government* governance, this perception of ease reflects the system's readiness, including components of infrastructure (connectivity), user interface (citizen interface), content development, competency building, security regulations (cyber laws), and funding (capital). Obstacles such as uneven network access, low digital literacy, and limited development budgets also affect the perception of ease.

Thus, although ease of use is a dominant factor influencing behavioral intention to use, strengthening external factors and developing relevant features are highly essential. The perception of ease is not just about the interface design but reflects the overall readiness of the digital system. Therefore, strengthening inclusive and sustainable *e-government* governance is necessary for the Magesty application to truly become an effective and widely accepted digital public service solution in Magelang City.

Behavioral Intention to Use Positively and Significantly Influences Actual System Use

The results of the fourth hypothesis test (H4) show that Behavioral Intention to Use (BITU) has a very strong influence on Actual System Use (ASU) of the Magesty application in Magelang City, with a path coefficient value of 0.716 (71.6%). This means that the higher the user's behavioral intention to use the application, the greater the likelihood they will actually use the application in their daily lives. This finding supports previous research by Rohman et al., (2023), Safitri et al., (2022), Rahayu et al. (2017), and Mahendra (2016), which concluded that behavioral intention to use positively and significantly influences the actual use of a system.

Users from the general public show a high behavioral intention to use because features like CCTV and DataGO are considered relevant, although actual use is still limited to basic functions. On the other hand, MSME actors have a high intention if the application provides tangible benefits, especially from the MSME Shopping feature. However, their actual use is hampered by minimal feature support, such as digital payment options or sales statistics. This indicates that even though the behavioral intention to use is high, the influence on actual use is not fully qualitatively distributed. Consequently, without accompanying adaptive feature development, technical training, and personalization for the needs of the two user segments, the Magesty application in Magelang City risks becoming unsustainable.

The very strong influence between behavioral intention to use and actual system use is also driven by a number of external factors, including: technological infrastructure support, such as stable internet networks and the provision of public WiFi, and the availability of smartphone devices, which are the main means of application access. In addition, technical support from the government, in the form of usage guides, training, and socialization, plays a significant role in strengthening the link between intention and actual behavior. The ease of application access for all segments, including groups with low digital literacy, is also an important factor in ensuring that intention leads to consistent and sustainable use.

Despite this success, the sustainability of the application risks failure if it is not accompanied by adaptive feature development, specific service adjustments based on the needs of each user segment (general public and MSME actors), and progressive application management policies.

Therefore, while intention is an important initial capital, the transformation towards actual use depends on the extent to which the system and the supporting environment can meet user needs effectively and continuously.

CONCLUSION

Based on the results of the testing and discussion of the four hypotheses within the Technology Acceptance Model (TAM), it can be concluded that all relationships between the variables show a positive and significant influence, ranging from strong to moderate, on user acceptance of the Magesty application in Magelang City. Perceived ease of use has a very strong influence (path coefficient=0.745 or 74.5%) on perceived usefulness, indicating that ease of use, particularly interface design and navigation, is the primary factor in forming the perception of the application's benefits, especially for basic features among the general public and the MSME Shopping feature for business actors.

Perceived usefulness has a moderate influence (path coefficient=0.350 or 35%) on behavioral intention to use, suggesting that although the application is considered beneficial, it has not yet fully driven long-term usage, especially in the context of improving MSME productivity. Perceived ease of use also has a moderate influence (path coefficient=0.466 or 46.6%) on behavioral intention to use, which indicates that ease of use forms intention more quickly than perceived usefulness. However, both groups are still influenced by external factors such as infrastructure, digital literacy, and technology training.

Behavioral intention to use has a very strong influence (path coefficient=0.716 or 71.6%) on actual system use, showing that the intention to use plays a critical role in the actual utilization of the application. For the general public, this is related to the need for public services, while for MSME actors, it is related to the impact on business sustainability. Therefore, it can be concluded that, overall, ease of use and perceived usefulness are the main factors in forming the intention and actual use of the Magesty application. The Magelang City Government needs to strengthen infrastructure support, digital literacy, and application development adaptively and inclusively according to the needs of the general public and MSME actors.

Based on the conclusions of the research findings above, there are several recommendations, which are: the Magelang City Communication, Informatics, and Statistics Office (Diskominsta) needs to strengthen e-government governance through the sustainable development of content, interface, competency, connectivity, digital regulation, and funding, and to conduct routine UX evaluations and feature development based on specific community needs. Community-based technology training and socialization of application benefits are also important to be carried out broadly. The general public

is expected to utilize all application features, actively provide input, and participate in digital literacy training. MSME actors need to optimize the MSME Shopping feature for promotion and transactions, provide input for feature development, and enhance their business digital literacy.

This research has the limitation of using only four basic variables in TAM: perceived ease of use, perceived usefulness, behavioral intention to use, and actual system use. Furthermore, the exploratory limitation in this research only used a quantitative approach. The majority of respondents in this study were MSME actors and students with a high school as their latest education, indicating that application acceptance was measured within groups with basic information needs and economic support. Thus, subsequent researchers are advised to develop the TAM model by adding external variables or using TAM2/TAM3, implement a mixed methods approach for a deeper understanding, and conduct user mapping based on demographics and digital literacy levels to produce more precise recommendations.

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