

The Influence of Digital Literacy and Education Level on E-Government Utilization by Village Officials in Desa Cinta Statistik (Desa Cantik) Program, Wonogiri Regency

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Abstract. This study aims to analyze and examine the influence of digital literacy and educational level, both partially and simultaneously, on the utilization of e-government by village officials in three villages participating in the Desa Cinta Statistik (Desa Cantik) Program, namely Kepatihan, Keloran, and Wonoharjo Villages, Wonogiri Regency. This study employed a quantitative associative approach using purposive sampling to determine the research locations and saturated sampling to select the respondents, resulting in a total of 70 respondents. Data were collected through a Likert-scale questionnaire and analyzed using validity and reliability tests, classical assumption tests, and multiple linear regression analysis with the assistance of SPSS software. The findings reveal that digital literacy has a significant positive effect on the utilization of e-government, whereas educational level does not have a significant partial effect. However, the two variables simultaneously have a significant effect on the utilization of e-government, explaining 61.5% of the variance. These findings indicate that strengthening the digital literacy competencies of village officials plays a more decisive role in the successful implementation of the Village Information System than formal educational attainment alone. Therefore, strategies to enhance the capacity of village government personnel should prioritize continuous technical training and digital mentoring programs.

Keywords: *Digital Literacy, Education Level, E-Government, Village Information System (SID), Village Officials.*

A. INTRODUCTION

The rapid development of technology and information has become one of the driving factors of digital transformation in the administration of government, including at the village level. This effort is reinforced by Presidential Regulation Number 95 of 2018 on the Electronic-Based Government System (SPBE), which aims to realize effective, efficient, transparent, and integrated governance, along with the target of 100% village digitalization by 2025 through the Digital Village Program (KSP, 2023). One manifestation of e-government implementation at the village level is the Village Information System (SID), which is regulated under Article 86 of the Village Law as the village's right to access information, and encompasses administrative service systems, village websites, population data, and village financial management (Mardinata et al., 2023).

However, the utilization of e-government or SID in the field has not been evenly distributed. The ability of village officials to operate digital systems still varies, and gaps in human resource competence often become a factor in the failure of government digitalization in rural areas (Assaf & Abbas, 2021). This condition indicates that the success of village digitalization is not solely about the availability of technology, but also the readiness of its human resources, particularly the digital literacy and education level of village officials (Assaf & Abbas, 2021; Ombudsman RI, 2022).

This issue becomes increasingly relevant within the context of the Desa Cinta Statistik (Desa Cantik) Program, which encourages village officials to enhance their capacity in statistical data management to support development planning and public services (Fisabilillah

& Setiawan, 2025; Pranata et al., 2025). In Wonogiri Regency, this study focuses on Kepatihan, Keloran, and Wonoharjo Villages as villages fostered under the Desa Cinta Statistik (Desa Cantik) Program, which hold significant potential for technology-based village development.

Although previous studies have highlighted the importance of human resource competence in village government digitalization, research specifically examining the combined influence of digital literacy and education level on e-government utilization—particularly in villages fostered under the Desa Cinta Statistik (Desa Cantik) Program—remains limited, especially in Wonogiri Regency. This gap forms the basis for the necessity of this study.

Based on the foregoing description, this study aims to analyze and examine the influence of digital literacy and education level, both partially and simultaneously, on e-government (village information system) utilization by village officials in Desa Cinta Statistik (Desa Cantik), Wonogiri Regency. This study is expected to provide an empirical contribution regarding strategies for developing the capacity of village apparatus human resources in the era of digital village governance.

In general, the conceptual framework of this study can be illustrated as follows:

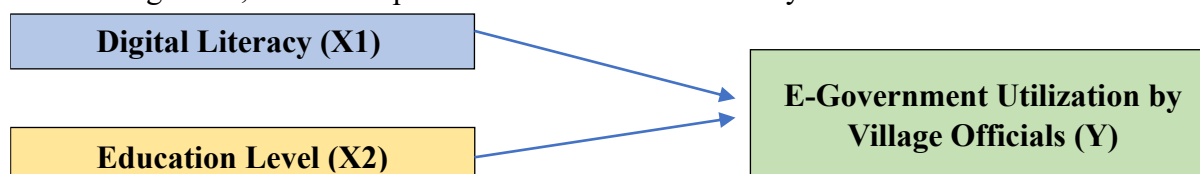


Figure 1. Conceptual Framework

Based on the conceptual framework outlined above, the hypotheses in this study are formulated as follows:

- H₁: Digital literacy has a positive effect on e-government utilization by village officials.
- H₂: Education level has a positive effect on e-government utilization by village officials.
- H₃: Digital literacy and education level simultaneously affect e-government utilization by village officials.

B. LITERATURE REVIEW

1. Digital Literacy Theory

Ng (2012) explains that digital literacy encompasses three main dimensions, namely technical, cognitive, and social-emotional. The technical dimension relates to the skills required to proficiently utilize information technology, the cognitive dimension relates to the skills of searching for, evaluating, and critically synthesizing digital information, as well as awareness of ethical and legal issues, while the social-emotional dimension relates to the skills of socializing appropriately in online environments.

These three dimensions are then developed into four operational indicators in this study, namely technical skills (the ability to operate digital devices and systems), information literacy (the ability to search for, understand, and evaluate information), digital communication (the ability to communicate through digital media), and digital ethics and safety (awareness of using technology safely and responsibly). In the context of village governance, the digital literacy of village officials is reflected in their ability to operate administrative applications, manage digital data, and convey public service information online—a competency that serves as a prerequisite for the digital systems provided by the government to be utilized optimally (Ombudsman RI, 2022).

2. Technology Acceptance Model (TAM)

To examine how digital literacy can influence e-government utilization, this study employs the Technology Acceptance Model (TAM) developed by Davis (1986) as the theoretical foundation for technology acceptance. TAM is derived from the Theory of Reasoned Action and has been widely used as a theoretical basis in various empirical studies on user acceptance of technology. The original TAM model consists of five constructs, namely perceived usefulness, perceived ease of use, attitude, behavioral intention, and actual use, in which perceived usefulness and perceived ease of use shape an individual's attitude and behavioral intention to use a system, which ultimately influences the actual use of that system.

This study adapts three main constructs relevant to the context of SID utilization by village officials, namely perceived usefulness, perceived ease of use, and actual technology use. The higher an individual's digital literacy, the higher their perceived ease of use of digital systems, so that digital literacy can be regarded as an individual factor shaping village officials' readiness to accept and use SID as well as other e-government services.

3. Human Capital Theory: Education as Human Capital

In addition to digital literacy, the formal education level of village officials can be explained based on human capital theory. Schultz (1961), in his work *Investment in Human Capital*, argued that investment in education, training, and other forms of human capital holds a role of equal importance to investment in physical capital for economic growth, contending that investment in education is just as important as investment in physical capital for economic development.

This idea was later further developed by Becker (1993), who viewed education as a form of long-term investment capable of enhancing an individual's ability, productivity, and well-being. From this perspective, the formal education level held by village officials is regarded as an accumulation of human capital that shapes their cognitive capacity and adaptive ability toward new developments, including digital technology, such that the higher the education level attained, the greater their potential readiness to adopt and utilize e-government systems.

4. The Concept of E-Government and Village Information System (SID)

E-government is a system of utilizing information and communication technology by the government to enhance public access to information, transparency, and the accountability of government institutions (Putriani & Fanida, 2022). In Indonesia, this policy is reinforced through Presidential Regulation Number 95 of 2018 on the Electronic-Based Government System (SPBE), which aims to create effective, efficient, transparent, and integrated governance. At the smallest level of government, the implementation of e-government is realized through the Village Information System (SID), a set of tools comprising hardware, software, networks, and human resources managed by the village government to support the management and utilization of village data as regulated under Article 86 of the Village Law.

SID utilizes information technology to collect, manage, and disseminate information related to village services and management (Mardinata et al., 2023). In this study, e-government utilization is operationalized as SID, defined as the entirety of digital systems used in village government administration, encompassing administrative service systems, village websites, population data management, and village financial record-keeping.

5. Previous Research

A number of previous studies have examined the relationship between village information systems, digital literacy, and e-government utilization from various perspectives. Mardinata, Cahyono, and Rizqi (2023) found that the development of SID helps manage village asset data, optimizes the transparency of data management, facilitates public access to information, and supports the improvement of public service delivery as well as community participation in village development. In line with this, Ashar, Irwan, and Dema (2025), in their study in Sipodeceng Village, showed that the presence of digital systems such as the SIBERAS application and village websites had a positive impact on the efficiency and effectiveness of services, optimized administrative processes, and facilitated public access to information—supporting the achievement of transparent, accountable, and participatory e-government objectives.

From the perspective of digital literacy, Sutikno and Pribadi (2024) found a significant relationship between community digital literacy and online media accessibility with the quality of e-government implementation in population administration services at the Population and Civil Registration Office of Banyumas Regency. This finding is reinforced by Mappisabbi, Haris, and Zuhri (2025), who found a significant positive correlation ($r = 0.742$; $p < 0.001$) between digital literacy and the level of participation in digital governance, in which communities with high digital literacy were recorded to be 3.2 times more active in online public consultations and more optimal in using e-government services.

When synthesized, these studies, whether focusing on SID (Mardinata et al., 2023; Ashar et al., 2025) or digital literacy (Sutikno & Pribadi, 2024; Mappisabbi et al., 2025), consistently show that the success of e-government is strongly determined by the readiness of the system on one hand and the readiness of its users on the other. Nevertheless, these studies generally examine digital literacy as a single variable at the level of the general public, and have not tested it simultaneously alongside the formal education level variable, nor have they targeted village officials as the primary unit of analysis. In fact, village officials serve as the spearhead and primary gatekeepers of successful digital bureaucratic transformation at the village level, and the diversity of their educational backgrounds as well as gaps in digital literacy among them often become major obstacles in adopting new systems. This gap forms the basis of the present study, using a case study of Kepatihan, Keloran, and Wonoharjo Villages, Wonogiri Regency, as villages fostered under the Desa Cinta Statistik (Desa Cantik) Program, where the demand for e-government utilization by their apparatus is far more critical compared to other villages.

C. METHOD

This study employs a quantitative method with an associative approach aimed at analyzing the influence between the variables of digital literacy and education level on e-government utilization by village officials. This approach was chosen because the study aims not only to describe the existing conditions but also to analyze the relationships between variables formulated in the research hypotheses. This study was conducted on village officials located in three villages fostered under the Desa Cinta Statistik (Desa Cantik) Program in Wonogiri Regency, namely Kepatihan, Keloran, and Wonoharjo Villages. The subjects of the study consist of hamlet heads, section heads, division heads, village secretaries, and administrative staff who are still actively serving in the administration of village government and public services. The determination of the research area was based on the status of these three villages as villages fostered under the Desa Cinta Statistik (Desa Cantik) Program, in which the demands for statistical data management capacity and digital

system utilization by their apparatus are more critical compared to other villages in Wonogiri Regency.

The study population encompasses all village officials in the three villages. The sample was determined through two stages: purposive sampling for determining the research locations, with the criterion of being villages fostered under the Desa Cinta Statistik (Desa Cantik) Program, and saturated sampling (total sampling) for determining the respondents, such that all actively serving village officials were involved as respondents in the study. Primary data collection was conducted by directly distributing questionnaires to all respondents.

The independent variables in this study consist of two components, namely digital literacy (X1) and education level (X2). The digital literacy variable (X1) is measured based on the concept proposed by Ng (2012), which encompasses the technical, cognitive, and social-emotional dimensions. These three dimensions are then developed into four operational indicators to be measured through the research instrument, namely technical skills (the ability to operate digital devices and systems), information literacy (the ability to search for, understand, and evaluate information), digital communication (the ability to communicate through digital media), and digital ethics and safety (awareness of using technology safely and responsibly). Meanwhile, education level (X2) refers to the last formal educational level attained by village officials, which is regarded as an accumulation of human capital that shapes their adaptive capacity toward new technology (Becker, 1993).

The dependent variable used in this study is the utilization of the Village Information System (Y), measured based on the Technology Acceptance Model (TAM) developed by Davis (1986). This model was used because it is capable of analyzing technology acceptance and use by individuals within an organization. Of the five original TAM constructs (Perceived Usefulness, Perceived Ease of Use, Attitude, Behavioral Intention, and Actual Use), this study adapts three main indicators relevant to the context of SID utilization by village officials, namely perceived usefulness (measuring the extent to which SID helps with work, improves efficiency, accelerates service delivery, and enhances service quality), perceived ease of use (measuring the ease of understanding and operating SID), and actual technology use (measuring the frequency and intensity of SID use in daily work). Variables X1 and Y were measured using a 1–5 Likert scale, while X2 was measured using a 1–5 ordinal scale based on the last formal education level, with 1 = elementary school (SD), 2 = junior high school (SMP), 3 = senior high school/vocational school (SMA/SMK), 4 = diploma (D1/D2/D3), and 5 = bachelor's degree/D4 (D4/S1).

Data were analyzed using SPSS through several stages. The first stage involved testing instrument quality through validity testing (Pearson Product Moment) and reliability testing (Cronbach's Alpha) to ensure the level of instrument feasibility (Ghozali, 2018). The second stage consisted of classical assumption testing, comprising a normality test using the Kolmogorov-Smirnov Test, a multicollinearity test using Tolerance and Variance Inflation Factor (VIF) values, and a heteroscedasticity test using the Glejser Test. The next stage involved multiple linear regression analysis with the equation $Y = a + b_1X_1 + b_2X_2 + e$ to determine the influence of the independent variables on the dependent variable. The final stage was hypothesis testing, comprising the t-test to determine the partial influence (H1 and H2), the F-test to examine the simultaneous influence (H3), and the coefficient of determination (R^2) to measure the ability of the independent variables to explain the dependent variable.

D. RESULTS AND DISCUSSION

This study was conducted on village officials in three villages fostered under the Desa Cinta Statistik (Desa Cantik) Program in Wonogiri Regency, namely Kepatihan, Keloran, and Wonoharjo Villages. Through the saturated sampling (total sampling) technique, all village officials actively serving in the administration of government and public services were made respondents of the study, resulting in a total research sample of 70 respondents. Primary data were collected through a questionnaire measuring three variables, namely digital literacy (X1), education level (X2), and e-government utilization by village officials (Y).

1. Respondent Characteristics

Based on the questionnaire results, the majority of respondents were of productive age and possessed an adequate educational background. This indicates that the respondents have sufficient capability to support technology utilization, particularly the implementation of e-government through the Village Information System (SID).

Table 1. Respondent Characteristics

Characteristic	Category	Frequency
Age	21 – 40 years	48
	> 40 years	22
Education	SMA/SMK	25
	Diploma/Bachelor's Degree	45
Position	Staff	40
	Hamlet Head	12
	Section Head, Division Head, Admin	12
	Village Treasurer & Secretary	3
	Village Head	3

Source: Author, 2026

2. Validity Test

The validity test was conducted using the Pearson Product Moment technique, namely by comparing the calculated r value of each question item against the r table value at a significance level of 5% with the number of respondents (n) = 70 and degrees of freedom ($df = n-2 = 68$), yielding an r table value of 0.2352. A question item is declared valid if the calculated r value > r table value and the significance value < 0.05 (Ghozali, 2018).

Based on the test results of 15 statement items on the digital literacy variable (X1), the calculated r values ranged from 0.465 to 0.848, with all significance values below 0.05. Therefore, all items on variable X1 are declared valid because the calculated r value is greater than the r table value (0.2352).

Table 2. Validity Test Results of Digital Literacy (X)

Item	r calculated	r table	Description
LD1	0,826	0,2352	Valid
LD2	0,680	0,2352	Valid
LD3	0,848	0,2352	Valid
LD4	0,764	0,2352	Valid
LD5	0,767	0,2352	Valid
LD6	0,532	0,2352	Valid
LD7	0,750	0,2352	Valid
LD8	0,747	0,2352	Valid
LD9	0,689	0,2352	Valid
LD10	0,708	0,2352	Valid

LD11	0,631	0,2352	Valid
LD12	0,485	0,2352	Valid
LD13	0,512	0,2352	Valid
LD14	0,649	0,2352	Valid
LD15	0,465	0,2352	Valid

Source: Author, 2026

For the e-government utilization by village officials variable (Y), all 12 statement items also met the validity criteria with calculated r values between 0.724 and 0.838 and a significance value of 0.000 for all items. Thus, all items on both variables can be used for further analysis.

Table 3. Validity Test Results of E-Government Utilization by Village Officials (Y)

Item	r calculated	r table	Description
PE1	0,797	0,2352	Valid
PE2	0,805	0,2352	Valid
PE3	0,817	0,2352	Valid
PE4	0,750	0,2352	Valid
PE5	0,773	0,2352	Valid
PE6	0,775	0,2352	Valid
PE7	0,731	0,2352	Valid
PE8	0,838	0,2352	Valid
PE9	0,724	0,2352	Valid
PE10	0,830	0,2352	Valid
PE11	0,787	0,2352	Valid
PE12	0,728	0,2352	Valid

Source: Author, 2026

3. Reliability Test

The reliability test was conducted using the Cronbach's Alpha technique, where an instrument is declared to have good reliability if the Cronbach's Alpha value > 0.60 (Ghozali, 2018).

Table 4. Reliability Test Results

Variable	Cronbach's Alpha	Description
Digital Literacy (LD)	0,914	Reliabel
E-Government Utilization by Village Officials (PE)	0,940	Reliabel

Source: Author, 2026

Based on the table, both variables have Cronbach's Alpha values > 0.90 , which according to Ghozali's (2018) criteria are classified as high. These results indicate that the research instrument is consistent and reliable for measuring digital literacy as well as e-government utilization by village officials.

4. Normality Test

The normality test was conducted by testing Kolmogorov-Smirnov on the residual values of the regression model. Data is said to be normally distributed if the significance Asymp. Sig. 2-tailed > 0.05 .

Table 5. Results of the Kolmogorov-Smirnov Normality Test

N	Kolmogorov-Smirnov	Asymp.Sig. (2-tailed)	Description
70	0,961	0,314	Normally Distributed

Source: Author, 2026

The test results show an Asymp. Sig. (2-tailed) value of 0.314, which means > 0.05 . Therefore, it can be concluded that the residual data in this research model is normally distributed, thus fulfilling one of the requirements for using multiple linear regression analysis.

5. Multicollinearity Test

The multicollinearity test was conducted to determine whether or not there is a strong relationship between independent variables in the regression model. This test was carried out by examining the Tolerance and Variance Inflation Factor (VIF) values. A regression model is declared free from symptoms of multicollinearity if the Tolerance value > 0.10 and the Variance Inflation Factor (VIF) value < 10 (Ghozali, 2018).

Table 6. Multicollinearity Test Results

Variable	Tolerance	VIF	Description
Digital Literacy (X1)	0,660	1,514	Free from Multicollinearity
Education Level (X2)	0,660	1,514	Free from Multicollinearity

Source: Author, 2026

Based on the table above, the VIF value for the digital literacy and education level variables is 1.514, with a Tolerance value of 0.660. From the analysis results, it can be concluded that there are no symptoms of multicollinearity between the digital literacy variable (X1) and the education level variable (X2) in this study's regression model.

6. Heteroscedasticity Test

The heteroscedasticity test was conducted using the Glejser Test, namely by regressing the absolute residual values (Abs_RES) on the independent variables. A regression model is declared free from symptoms of heteroscedasticity if the significance value of each variable > 0.05 .

Table 7. Heteroscedasticity Test Results

Variable	Sig.	Description
Digital Literacy (X1)	0,082	Free from Heteroscedasticity
Education Level (X2)	0,661	Free from Heteroscedasticity

Source: Author, 2026

The Glejser test results show significance values for the digital literacy variable of 0.082 and education level of 0.661, both of which are > 0.05 . Thus, it can be said that no symptoms of heteroscedasticity occur in the regression model, so the residual variance is homogeneous across all observations.

Based on the results of the three classical assumption tests above, the regression model in this study has met the BLUE requirements (normally distributed data, absence of multicollinearity, and absence of heteroscedasticity), thus qualifying for use in further hypothesis testing.

7. Multiple Linear Regression Analysis

The influence of digital literacy and education level on e-government utilization, both partially and simultaneously, was tested using multiple linear regression analysis.

Table 8. Multiple Linear Regression Analysis Results

Variable	(B)	Std. Error	Beta	t calculated	Sig.
(Constant)	8,210	4,433	-	1,852	0,068
Digital Literacy	0,641	0,079	0,753	8,071	0,000
Education Level	0,296	0,523	0,053	0,566	0,573

Source: Author, 2026

Based on the analysis results in the table above, the multiple linear regression equation can be formulated as follows: $Y = 8,210 + 0,641 X_1 + 0,296 X_2 + e$. The constant value of 8.210 indicates that if digital literacy and education level are constant or equal to zero, e-government utilization by village officials would be 8.210. The regression coefficient of X_1 at 0.641, with a positive sign, indicates that every one-unit increase in digital literacy will increase e-government utilization by 0.641 units, assuming other independent variables remain constant. Meanwhile, the regression coefficient of X_2 at 0.296, also positively signed, shows a positive direction of influence, although, as will be discussed further, this influence is not statistically significant. The standardized Beta coefficient values also show that digital literacy (0.753) contributes a much greater influence than education level (0.053) on e-government utilization.

8. t-Test (Partial Test)

The t-test was used to analyze the partial influence of each independent variable on the dependent variable. Based on a 5% significance level and degrees of freedom ($df = n - k - 1 = 70 - 2 - 1 = 67$), a t table value of 1.996 was obtained. A variable is declared to have a significant effect if the significance value < 0.05 or the calculated t value $> t$ table value.

Table 9. t-Test Results

Variable	Coefficient (B)	t calculated	Sig.	Decision
(Constant)	8,210	1,852	0,068	-
Digital Literacy	0,641	8,071	0,000	H1 Accepted
Education Level	0,296	0,566	0,573	H2 Rejected

Source: Author, 2026

The Influence of Digital Literacy (X_1) on E-Government Utilization (Y): The analysis results yield a calculated t value of $8.071 > t$ table 1.996 with a significance value of $0.000 < 0.05$. Thus, H1 is accepted, meaning that digital literacy has a positive and significant influence on e-government utilization by village officials.

The Influence of Education Level (X_2) on E-Government Utilization (Y): The test results show a calculated t value of $0.566 < t$ table 1.996 with a significance value of $0.573 > 0.05$. Thus, H2 is rejected, meaning that education level partially has no significant influence on e-government utilization by village officials.

9. F-Test (Simultaneous Test)

The F-test was conducted to test the influence of the independent variables and dependent variable jointly (simultaneously) on e-government utilization. Based on $df_1 = k = 2$ and $df_2 = n - k = 68$, an F table value of 3.13 was obtained.

Table 10. F-Test Results

F calculated	F table	Sig.	Description
53,599	3,13	0,000	Significant

Source: Author, 2026

Based on the test results, an F calculated value of $53.599 > F$ table 3.13 was obtained with a significance value of $0.000 < 0.05$. Thus, H3 is accepted, meaning that digital literacy

and education level simultaneously have a significant influence on e-government utilization by village officials.

10. Coefficient of Determination (R^2)

The coefficient of determination serves to see how much contribution the independent variables simultaneously make in explaining the dependent variable.

Table 11. Coefficient of Determination Results

R	R Square	Adjusted R Square
0,784	0,615	0,604

Source: Author, 2026

The analysis results in the table show an R Square value of 0.615 or 61.5%. This value indicates that digital literacy and education level simultaneously are able to explain the variation in e-government utilization by village officials by 61.5%. Meanwhile, the remaining 38.5% is explained by other variables outside this research model, such as technological infrastructure support, village leadership policy, organizational culture, and staff work motivation.

The research findings prove that digital literacy has a positive and significant influence on e-government utilization by village officials in Kapatihan Village, Keloran Village, and Wonoharjo Village, with a dominant standardized contribution ($\text{Beta} = 0.753$). This finding is consistent with the Technology Acceptance Model (Davis, 1986), which explains that the acceptance and actual use of a technology system is greatly determined by perceived ease of use, which in this context is formed by an individual's digital literacy ability. The higher the ability of village officials to understand, operate, and evaluate digital information, the easier it is for them to feel the benefits and ease of operating the Village Information System (SID) or e-government.

This finding also reinforces the research results of Sutikno and Pribadi (2024), who found a significant relationship between community digital literacy and e-government service quality, as well as the research by Fadli Mappisabbi, Abd Haris, and Wahyudin Zuhri (2025), which showed a significant positive correlation between digital literacy and the level of participation in digital governance. Thus, this research confirms that user readiness in terms of digital competence is the main determinant of the success of village government digital transformation, in line with the findings of Assaf and Abbas (2021), who cite the human resource competence gap as a determinant of digitalization failure in rural government.

The insignificance of the influence of education level can be explained from several perspectives. First, the ability to operate practical digital systems (such as SID and village administration applications) tends to be acquired more through work experience, technical training, and daily habituation, rather than through formal education alone. This means formal education builds general cognitive capacity but does not directly guarantee operational technical competence for a particular system. Second, most village officials in this study likely have a relatively homogeneous range of education levels, so the variation in education level is not large enough to produce a significant difference in e-government utilization. Third, this finding also indicates that digital literacy plays a more proximal role in relation to technology use behavior compared to education level, which is more distal, since digital literacy inherently already covers cognitive dimensions relevant to technology use (Ng, 2012).

This finding adds a new nuance to previous studies that generally focus on digital literacy as a single variable at the general public level (Sutikno & Pribadi, 2024; Mappisabbi et al., 2025), by showing that at the village official level, formal education level alone is not sufficient to drive e-government utilization without being accompanied by direct strengthening of digital literacy.

The F-test results show that digital literacy and education level simultaneously have a significant influence on e-government utilization, with a contribution of 61.5% (R Square = 0.615). This shows that although education level has no partial effect, its presence together with digital literacy in one model still makes a meaningful contribution to e-government utilization. This substantial simultaneous contribution reinforces the study's conceptual framework, which views human resource readiness in terms of digital competence together with educational background as a unified set of individual factors shaping the readiness of village officials to adopt the e-government system (Assaf & Abbas, 2021).

The remaining 38.5% influence not explained by the two variables in this study opens room for future research to explore other factors, such as the quality of internet network infrastructure, policy support and leadership of the village head, availability of village digitalization budget, and staff work culture, which theoretically also affect the successful implementation of the Village Information System (SID) in villages assisted by the Desa Cinta Statistik (Desa Cantik) Program. This finding is relevant to the context of the Desa Cinta Statistik (Desa Cantik) Program, which emphasizes technical guidance and mentoring in data management as an effort to build the digital capacity of village officials (Fisabilillah & Setiawan, 2025). Overall, the results of this study imply that strategies to improve the capacity of village official human resources in supporting digital village governance should be more prioritized on directly strengthening digital literacy through technical training and continuous mentoring, rather than solely relying on increasing formal education levels.

E. CONCLUSION

This research aims to test and prove the influence of digital literacy and education level, both partially and simultaneously, on e-government (village information system) utilization by village officials in three villages assisted by the Desa Cinta Statistik (Desa Cantik) Program, namely Kepatihan Village, Keloran Village, and Wonoharjo Village in Wonogiri Regency. Based on the results of multiple linear regression analysis on 70 respondents, this study concludes that digital literacy is proven to have a positive and significant influence on e-government utilization by village officials, with a dominant contribution of influence compared to other independent variables. This finding confirms that the technical, cognitive, social, and emotional abilities of village officials in operating digital technology are the main determinants driving the optimization of Village Information System (SID) utilization, in line with the principle of the Technology Acceptance Model that perceived ease of technology use is greatly determined by the digital competence of its users.

Conversely, the formal education level of village officials is not proven to have a partially significant influence on e-government utilization. This finding shows that formal education level alone is not yet sufficient to guarantee village officials' readiness to adopt and utilize digital government systems, so that technical-practical competence gained through work experience and continuous training becomes a more determining factor than the education level attained. Nevertheless, simultaneously, digital literacy and education level are still proven to have a significant influence on e-government utilization, with both variables able to explain 61.5% of the variation in e-government utilization, while the remainder is explained by other factors outside this research model.

Thus, this research answers the problem posed at the outset, that the gap in Village Information System utilization by village officials is not solely caused by technology availability, but by human resource readiness, particularly the digital literacy competence possessed by village officials, while formal education level acts as a supporting factor whose significance is only apparent when combined with digital literacy in a complete model.

This research has a number of limitations that need attention in interpreting the results as well as in developing future research. This study only involved 70 respondents from three villages assisted by Desa Cinta Statistik (Desa Cantik) in Wonogiri Regency, so the results cannot necessarily be generalized to village officials in other regions with different social, geographic, or digitalization characteristics. The variation in respondents' education levels in this study was relatively limited, since the majority of respondents had secondary education or higher with no respondents having only basic education, so the results of the education level influence test need to be interpreted carefully and may differ if tested on a population with a more heterogeneous education distribution. Furthermore, this study only tested two independent variables, namely digital literacy and education level, so that the 38.5% variation in e-government utilization by village officials that remains unexplained is potentially influenced by other factors not included in the model, such as network infrastructure quality, policy support and village head leadership, availability of digitalization budget, and staff work culture. In this study, data was collected through a perception-based questionnaire, so there is a possibility of subjective bias in respondents' self-assessment of their digital literacy ability as well as the actual intensity of digital system utilization.

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