Eduvest – Journal of Universal Studies
Volume 6 Number 6, June, 2026
p- ISSN 2775-3735 - e-ISSN 2775-3727

The Effect of Digital Literacy on Readiness for Digital Change with Resistance to Change as a Mediating Variable (A Study of Civil Servants at the Ministry of Communications and Digital Technology's Human Resource Development Agency)

Shera Mayangsari Suwito*, Pantius Drahen Soeling
Universitas Indonesia
Email: shera.mayangsari31@ui.ac.id*, pantiusdrahen@gmail.com

Keywords:
digital literacy;
resistance to change;
readiness for digital change;
SEM-PLS;
public sector digital transformation

ABSTRACT

This study aims to analyze the effect of digital literacy on readiness for digital change, both directly and indirectly through resistance to change as a mediating variable, among Aparatur Sipil Negara (ASN) at the Badan Pengembangan Sumber Daya Manusia (BPSDM) of the Kementerian Komunikasi dan Digital (Kemkomdigi). The study employed a quantitative approach with an explanatory, cross-sectional design. Data were collected through a 5-point Likert-scale online questionnaire administered to 282 ASN respondents from BPSDM, selected using a proportional quota sampling technique from a population of 945 ASN across 15 work units. Data were analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method with SmartPLS 4.0 software. The results showed that digital literacy had a positive and significant effect on readiness for digital change ($\beta = 0.226$; $p = 0.001$), digital literacy had a negative and significant effect on resistance to change ($\beta = -0.605$; $p < 0.001$), and resistance to change had a negative and significant effect on readiness for digital change ($\beta = -0.568$; $p < 0.001$). In addition, resistance to change was found to partially mediate the relationship between digital literacy and readiness for digital change, with an indirect effect ($\beta = 0.344$) greater than the direct effect. These findings confirm that enhancing ASN readiness for digital change depends not only on strengthening digital competencies but also on organizational efforts to manage employees' psychological resistance to change.

INTRODUCTION

The Industrial Revolution 4.0 and the acceleration of digital transformation are driving fundamental changes in the way governments plan, manage, and deliver public services. Digital transformation is no longer merely technological modernization; it has become a new governance paradigm that requires bureaucracies to work more agilely, collaboratively, transparently, and in a data-driven manner. Mergel (2019) emphasized that the success of public-sector digital transformation is not determined solely by the technology used, but rather by the ability of organizations and officials to adapt work processes, manage information, and

deliver public services through increasingly complex digital mechanisms. Thus, digital transformation is essentially a process of organizational change that requires human readiness, not merely infrastructure readiness. Ng (2021) expanded on this concept by emphasizing that individuals must not only be able to use technology but also understand the social and cultural environment in which it is used.

Within the institutional context of the Kementerian Komunikasi dan Digital (Kemkomdigi), the urgency of digital transformation has become increasingly clear with the issuance of Ministerial Regulation No. 1 of 2025 concerning the Organization and Work Procedures of the Ministry of Communication and Digital. This regulation affirms that Kemkomdigi is tasked with administering government affairs in the communication and digital sectors, including policy formulation and implementation, digital government technology management, and the development of communication and digital human resources. Consequently, the successful implementation of this mandate depends heavily on the capacity of the apparatus to work within the digital ecosystem, employees' readiness to adapt to technology-based organizational changes, and the organization's ability to manage resistance that may arise from changes in work methods.

In the context of the Indonesian bureaucracy, digital literacy is a crucial competency for civil servants to navigate these changes. According to Aiken and Bucy (2021), digital literacy encompasses not only technical knowledge and skills but also digital behaviors and attitudes, such as the ability to search for information ethically, uphold communication ethics, and understand the social impact of digital actions. In 2025, the Ministry of Communication and Digital, through the Indonesian Digital Society Index (Indeks Masyarakat Digital Indonesia/IMDI) framework, established three main pillars of digital literacy: basic digital literacy, digital safety, and digital ethics (Kemkomdigi, 2025a). Basic digital literacy encompasses an individual's ability to use digital devices, communicate digitally, and think critically about digital information. Digital safety reflects an individual's ability to protect devices, accounts, personal data, and digital activities from various security risks. Meanwhile, digital ethics emphasizes responsible behavior when interacting in the digital space, including respect for privacy, data protection, and intellectual property rights.

Digital transformation in the public sector is a complex form of organizational change because it is related not only to technology adoption but also to changes in work processes, coordination patterns, organizational culture, and the way public services are designed and delivered (Mergel et al., 2019; Haug et al., 2024). Mergel et al. (2019) explain that when public organizations implement digital technology and new work models, employees are often faced with role uncertainty, changes in work processes, and demands for new competencies. Haug et al. (2024) refer to this phenomenon as digitally induced change, namely change caused by digitalization that requires employees to adjust their mindsets, competencies, and professional behaviors relatively quickly. Therefore, digital change requires not only digital competence but also psychological readiness to accept and implement change.

In the change management literature, readiness for change refers to an individual's psychological preparedness to accept, support, and engage in organizational change. Holt et al. (2007) define readiness for change as an individual's psychological readiness to accept, support, and engage in organizational change. This readiness includes the belief that the changes made by the organization are appropriate, supported by management, feasible, and

beneficial to both individuals and the organization. In this study, this concept is directed toward readiness for digital change, namely the readiness of civil servants to accept, support, and adapt to organizational changes caused by digitalization. Conversely, organizational change can also give rise to resistance to change. Oreg (2006) explains that resistance to change is an individual's attitude toward change, reflected in three dimensions: cognitive, affective, and behavioral. In the context of digitalization, Scholkmann (2020) shows that resistance to digital change can arise from individual, systemic, and technological factors, such as anxiety about technology, a rigid organizational culture, the complexity of digital systems, or discomfort due to changes in work routines.

A recent study by Çulhaoğlu Uluđağ (2023) serves as an important reference because it examined the relationship among digital literacy, resistance to change, and readiness for organizational change within a single research model. The study's results indicate that digital literacy influences readiness for organizational change, both directly and indirectly through resistance to change as a mediating variable. However, the study was conducted in the context of non-governmental organizations and focused on readiness for organizational change in general. Therefore, further testing is needed in the context of the Indonesian bureaucracy, with a specific focus on readiness for digital change as a form of readiness to face organizational change triggered by digitalization.

In fact, the urgency of this research is reinforced by empirical findings regarding the digital literacy status of civil servants within the Ministry of Communication and Digital Technology. Rumata and Nugraha (2020) showed that digital literacy among civil servants at the Ministry of Communication and Digital Technology is not yet fully equitable. Some civil servants are in the "good" digital literacy category, but a significant proportion still fall between the "sufficient" and "very poor" categories, as shown in Table 1.

Table 1. Digital Literacy Level of Civil Servants at the Ministry of Communication and Digital 2019

Work unit	Very less	Not enough	Enough	Good	Very well	Total
Secretariat General	9	36	45	70	23	183
Directorate General of SDPPI	4	11	16	49	15	95
Directorate General of PPI	0	8	11	18	11	48
Directorate General of APTIKA	5	6	23	36	16	86
Directorate General of IKP	6	5	14	50	14	89
Inspectorate General	4	6	9	21	4	44
Human Resources Research and Development Agency	1	15	19	24	11	70
Human Resources Research and Development Unit	1	7	11	28	12	59
UPT SDPPI	0	9	21	42	6	78
Total	30	103	169	338	112	752

Percentage (%)	4.0	13.7	22.5	44.9	14.9	100.0

Source: Processed by researchers from Rumata and Nugraha (2020)

Rumata and Nugraha (2020) conducted a digital literacy survey of civil servants (*Aparatur Sipil Negara/ASN*) at *Kementerian Komunikasi dan Digital (Kemkomdigi)* and found that 44.9% of ASN were in the "good" category and 14.9% were in the "very good" category, while 40.2% were in the "sufficient" to "very poor" categories. A more important finding is that the Digital Behavior dimension had the lowest average score compared with the Digital Insight and Digital Skills dimensions, as shown in Table 2. The Digital Behavior dimension covers aspects of digital communication ethics, risk awareness, and the use of technologies such as the Internet of Things, big data, and artificial intelligence in public policy decision-making.

Table 2. Average Digital Literacy Level for Each Dimension of ASN Kemkomdigi 2019

Dimensions of Digital Literacy	Aspect Coverage	Average Literacy Level	Information
Digital Insight	Basic knowledge of ICT, understanding of digital concepts, understanding of digital rights & obligations	High (Best)	The highest average score, ASN relatively understands basic digital insights
Digital Skills	Use of work applications, navigation of digital platforms, operational technical skills	Moderate (Good Enough)	There are still variations; some ASN are not yet proficient in advanced technology.
Digital Behavior	Digital ethics, risk awareness, data security, IoT utilization, Big Data, AI	Low (Weakest)	Lowest score; ASN has not optimally implemented digital ethics and security

Source: Processed by researchers from Rumata and Nugraha (2020)

Furthermore, Rumata and Nugraha (2020) revealed that only 50.53% of the 752 respondents had good awareness of the limitations and ethical implications of digital communication. Table 3 shows, in greater detail, the level of understanding and use of digital technology among Kemkomdigi civil servants.

Table 3. Level of Understanding and Utilization of Digital Technology by ASN Kemkomdigi 2019

Aspects of Digital Literacy & Utilization	Category	Percentage (%)
Understanding the weaknesses and ethical consequences of digital communication	Understand	50.53
	Don't Understand	49.47
Adoption of digital technology in work	Adopt	55.60
	Not Adopted	44.40

Use of Big Data for work/decisions	Use	34.60
	Do not use	65.40
Use of Artificial Intelligence (AI)	Use	24.06
	Do not use	75.94

Source: Processed by researchers from Rumata and Nugraha (2020)

This means that although some civil servants have adopted digital technology in their work, the use of advanced technologies such as big data and artificial intelligence in decision-making remains relatively low. This finding indicates a gap between basic technological skills and the ability to use digital technology more strategically, analytically, and responsibly. In the context of organizational digital transformation, this situation can be challenging because readiness for digitalization requires not only technical skills but also a strong mindset, an adaptive attitude, and mature digital behavior.

Another empirical finding comes from the SMERU Research Institute Report (2024), which shows an imbalance between the demand for and supply of digital talent, particularly information and communication technology (ICT) officers, in central government agencies, as shown in Table 4.

Table 4. Supply, Demand, and Gap in the Number of ICT Officers in Central Government Agencies

ICT Officer Category	Supply	Demand	Gap
Skilled Level	601	5,674	-5,073
Expert Level	2,230	11,074	8,844
Total	2,831	16,348	13,517

Source: BPS (2022), restated by SMERU Research Institute (2024)

Table 4 clearly illustrates the significant imbalance between the demand and supply of ICT officers across all ministries and central government agencies. Based on data collected from the Statistics Indonesia (BPS) as of November 2022, only 2,831 ICT officers were available, far fewer than the optimal requirement of 16,348 based on the findings of the Workload Analysis (ABK) and Job Analysis (Anjab) for the 2020–2024 period. This creates a deficit of 13,517 employees, meaning that nearly all central government agencies lack digital talent to support the implementation of the e-government agenda (SPBE). The table also shows that the need for expert-level ICT officers is more than double the need for skilled-level ones, confirming that the role of expert-level digital talent is becoming increasingly strategic in supporting the government's digital transformation.

This factual gap becomes even more strategic when linked to the position of the Ministry of Communication and Digital Technology, particularly within the Human Resources Development Agency (BPSDM). As a unit mandated to develop human resources in communication and digital competencies, BPSDM is expected to be a driving force for strengthening digital literacy, shifting digital work culture, and preparing civil servants for digital transformation. However, as part of a bureaucratic organization undergoing internal digitalization, BPSDM civil servants not only serve as implementers of digital HR development

programs but also as subjects of change who need to possess digital literacy, readiness for change, and the ability to manage resistance to digital change.

Based on the conceptual and factual descriptions, this study attempts to explain the relationship between digital literacy, resistance to change, and readiness for digital change in ASN BPSDM Kemkomdigi. Conceptually, this study integrates digital literacy as an individual competency with resistance to change and readiness for digital change as psychological constructs in change management. Factually, this study responds to the challenges of ASN digital literacy and the gap in government digital human resource capacity, with the background of Kemkomdigi's institutional mandate in digital human resource development. Based on the description, the formulation of the research problem is: (1) how does digital literacy influence ASN's readiness for digital change in BPSDM Kemkomdigi; (2) how does digital literacy influence ASN's resistance to change in BPSDM Kemkomdigi; (3) how does resistance to change influence ASN's readiness for digital change in BPSDM Kemkomdigi; and (4) what is the mediating role of resistance to change in the relationship between digital literacy and ASN's readiness for digital change in BPSDM Kemkomdigi.

The objectives of this study are to: (1) analyze the influence of digital literacy on readiness for digital change of ASN at BPSDM Kemkomdigi; (2) analyze the influence of digital literacy on resistance to change of ASN at BPSDM Kemkomdigi; (3) analyze the influence of resistance to change on readiness for digital change of ASN at BPSDM Kemkomdigi; and (4) analyze the mediating role of resistance to change in the relationship between digital literacy and readiness for digital change of ASN at BPSDM Kemkomdigi. The results of the study are expected to be the basis for designing strategies for developing ASN digital competencies, managing resistance to change, and strengthening readiness for digital change in the bureaucratic environment, so that the development of human resources of the apparatus is not only directed at improving digital technical capabilities, but also at forming psychological readiness and adaptive behavior needed to support the success of the government's digital transformation.

METHOD

This study used a positivist paradigm to examine the causal relationship between digital literacy, resistance to change, and readiness for digital change among Aparatur Sipil Negara (ASN) as the main actors in governance. These three constructs were treated as measurable variables that could be examined objectively at the individual level within the digital governance framework (Creswell, 2014; Neuman, 2014).

This study employed a quantitative approach. The effects of digital literacy and resistance to change on readiness for digital change were examined using a questionnaire based on the indicators of each variable as the data collection instrument.

Based on its objectives, this study was classified as explanatory research because it aimed to explain causal relationships among variables through hypothesis testing, including the mediating role of resistance to change (Neuman & Robson, 2015). Based on its purpose, this study was categorized as basic research because it contributed to the development of public administration knowledge, particularly in the fields of digital literacy and organizational change readiness. Based on the time dimension, this study used a cross-sectional design. The research activities, including questionnaire preparation and testing, questionnaire distribution,

data collection, data processing and analysis, and the preparation of research results, were conducted from April to July 2026.

This study used a survey and literature review to obtain data. The survey was conducted using an online closed-ended questionnaire developed through Google Forms and distributed via WhatsApp Messenger to the target respondents. The questionnaire was self-administered, allowing respondents to complete it independently. In addition to primary data from the survey, this study used secondary data obtained from the literature review to support the analysis.

The population of this study consisted of all ASN at the Badan Pengembangan Sumber Daya Manusia (BPSDM) of the Ministry of Communication and Digital, including Pegawai Negeri Sipil (PNS) and Pegawai Pemerintah dengan Perjanjian Kerja (PPPK), totaling 945 people across 15 work units, as shown in Table 5.

Table 5. Population in Each BPSDM Kemkomdigi Work Unit

No.	Work Unit Name	Number of ASN
1	BBPSDMP Makassar	65
2	BBPSDMP Medan	43
3	BPPTIK	57
4	BPSDMP Bandung	32
5	BPSDMP Banjarmasin	37
6	BPSDMP Jakarta	25
7	BPSDMP Manado	32
8	Surabaya Human Resources Development Agency	36
9	BPSDMP Yogyakarta	33
10	Komdigi Apparatus Development Center	82
11	Komdigi Human Resources Ecosystem Development Center	49
12	Digital Literacy Development Center	89
13	Digital Talent Development Center	69
14	BPSDM Secretariat	94
15	Multimedia College	202
	Total	945

Source: Secretariat of BPSDM Kemenkomdigi, 2026

The sample size for this study was determined based on the requirements of Partial Least Squares Structural Equation Modeling (PLS-SEM), a predictive, variance-based SEM technique suitable for medium-sized samples and data that do not require multivariate normality assumptions (Hair et al., 2019; Hair et al., 2021). A total of 69 indicators were used to measure the research constructs, consisting of 29 indicators for digital literacy, 15 indicators for resistance to change, and 25 indicators for readiness for digital change.

The sample size was calculated using the Slovin formula (Consuelo et al., 1993, in Prasetyo & Jannah, 2005), with a 5% margin of error and a population of 945 respondents. The calculation produced a minimum sample size of 281.04, which was rounded to 282 respondents. Because the population was distributed across 15 work units, the sample for each

work unit was allocated proportionally. The results of the proportional sample allocation are shown in Table 6.

Table 6. Number of Samples in Each BPSDM Kemkomdigi Work Unit

Work unit	Number of Samples
BBPSDMP Makassar	19
BBPSDMP Medan	13
BPPTIK	17
BPSDMP Bandung	10
BPSDMP Banjarmasin	11
BPSDMP Jakarta	7
BPSDMP Manado	9
Surabaya Human Resources Development Agency	11
BPSDMP Yogyakarta	10
Komdigi Apparatus Development Center	24
Komdigi Human Resources Ecosystem Development Center	15
Digital Literacy Development Center	26
Digital Talent Development Center	21
BPSDM Secretariat	28
Multimedia College	61
Total	282

Source: Researcher's Processed Results, 2026

This study used proportional quota sampling, a non-probability sampling technique, to ensure that each work unit was represented according to the proportion of its ASN population (Sugiyono, 2021; Sekaran & Bougie, 2016). This technique was selected because the ASN population at BPSDM Kemkomdigi was heterogeneous and distributed across various work units. After the quota for each work unit was determined, respondents were selected non-randomly based on availability, accessibility, and their willingness to complete the questionnaire.

In this study, digital literacy was treated as the exogenous variable, readiness for digital change as the endogenous variable, and resistance to change as the mediating variable.

The research questionnaire consisted of three parts: screening questions to ensure respondent suitability, basic respondent information, and research statements representing the three main variables: digital literacy, resistance to change, and readiness for digital change. Respondent information included gender, age, position, education level, and work unit. The variables were measured using a 5-point Likert scale, ranging from 1 = “Strongly Disagree” to 5 = “Strongly Agree,” as shown in Table 7.

Table 7. Measurement Scale in the Questionnaire

Mark	Answer Categories	Variables
1	Strongly Disagree	Digital Literacy, Resistance to Change, Readiness for Digital Change

2	Don't agree
3	Neutral
4	Agree
5	Strongly agree

Source: Researcher's Processed Results, 2025

The digital literacy (DL) variable is operationalized based on the 2025 Indonesian Digital Society Index (IMDI) framework, which views digital literacy as a multidimensional capability encompassing technical, cognitive, security, and ethical aspects in the use of digital technology. This variable is measured through three dimensions: basic digital literacy with 11 indicators (BDL1–BDL11) covering ICT mastery, digital communication, and critical thinking; digital safety with 9 indicators (DS1–DS9) covering device security and personal security; and digital ethics with 9 indicators (DE1–DE9) covering privacy and data protection, digital interaction ethics, and plagiarism and intellectual property rights, resulting in a total of 29 indicators for the digital literacy variable (Kemkomdigi, 2025a).

The resistance to change (RTC) variable is measured referring to the conceptual framework developed by Oreg (2006), which operationalizes resistance to change through three main dimensions: cognitive (CO1–CO5) which represents an individual's assessment and beliefs about digital change, affective (AF1–AF5) which reflects an individual's emotional response to digital change, and behavioral (BE1–BE5) which describes an individual's tendency to take concrete actions in responding to change, so that there are a total of 15 indicators for the resistance to change variable.

The readiness for digital change (RFDC) variable is measured using the organizational change readiness model developed by Holt et al. (2007) and modified for the context of digital transformation. This variable is operationalized through four main dimensions: appropriateness (AP1–AP10) with 10 indicators, management support (MS1–MS6) with 6 indicators, change efficacy (CE1–CE6) with 6 indicators, and personal benefits (PB1–PB3) with 3 indicators, resulting in a total of 25 indicators for the readiness for digital change variable.

The validity and reliability of the research instrument were tested in the pre-test phase involving 30 respondents who met the research target criteria, using SPSS software version 27.0. The validity test was conducted using the Pearson Product Moment Correlation technique, by comparing the calculated r-value with the table r-value; an item is declared valid if the calculated r-value is greater than the table r-value (Sugiyono, 2021; Prasetyo & Jannah, 2005). The reliability test was conducted using Cronbach's Alpha, with a variable declared reliable if the Cronbach's Alpha value is greater than 0.6 (Ghozali, 2016; Nunnally & Bernstein, 1994; Pallant, 2001), although Hair et al. (2021) suggest a minimum acceptable value of 0.7.

The data analysis techniques in this study consisted of descriptive analysis and inferential analysis. Descriptive analysis was used to characterize the respondents' demographic information (age, gender, length of service, position, education level, and work unit) using percentages and frequencies, and to show the pattern of respondents' answers to each indicator using the average score (mean). Determination of the average value category was carried out using the formula Range Scale (RS) = (m – n) / b, where m is the highest value of the scale, n is the lowest value of the scale, and b is the number of categories. With a 5-point Likert scale

and 5 interpretation categories, RS = (5 – 1) / 5 = 0.8 was obtained, so that the average value category was divided into five classes as shown in Table 8.

Table 8. Class Category Average Value (Mean)

Mean	Category
1.00 – 1.80	Very Low
1.81 – 2.60	Low
2.61 – 3.40	High enough
3.41 – 4.20	Tall
4.21 – 5.00	Very high

Source: Researcher Processed Results (2026)

Inferential analysis was used to investigate the relationship between research variables and validate the established hypotheses, using the Structural Equation Modeling-Partial Least Squares (SEM-PLS) approach with the help of SmartPLS software version 4.0. This approach was chosen because the research model has many latent constructs with simultaneous causal relationships, and SEM-PLS can handle complex research models without assuming a normal data distribution. SEM-PLS analysis consists of two main stages, namely the evaluation of the measurement model (outer model) and the evaluation of the structural model (inner model).

In this study, all research variables (digital literacy, resistance to change, and readiness for digital change) used a reflective measurement model, because latent constructs are considered to influence their measurement indicators, so the direction of the relationship moves from the latent construct to the indicators (Henseler et al., 2009). Convergent validity was assessed through the outer loading and average variance extracted (AVE) values, with the outer loading value considered valid if it is 0.60 or greater (Chin, 1998), although the recommended value is 0.50 or higher (Hair et al., 2021). Discriminant validity was assessed using the Fornell-Larcker criteria and the Heterotrait-Monotrait Ratio (HTMT), where discriminant validity is considered met if the square root of the AVE of a construct is higher than its association with other constructs and the HTMT value is less than 0.90 (Hair et al., 2021). Construct reliability is assessed by calculating Cronbach's Alpha (CA) and Composite Reliability (CR), where a construct is considered reliable if its CR and CA values are greater than or equal to 0.70 (Hair et al., 2021).

The structural model (inner model) was evaluated through three stages, namely the R-Square (R^2) test to measure the ability of independent variables to explain dependent variables, the path coefficient significance test using the bootstrapping approach where the t-statistic value is more than 1.96 or the p-value is less than 0.05 indicating a significant influence between latent variables, as well as the 95% confidence interval test of the path coefficient to describe the range of influence values between variables at a 95% confidence level.

This research is quantitative and uses a Likert-scale questionnaire, so the data obtained are based on respondents' subjective perceptions (self-report) and may be influenced by response bias. Furthermore, the data were collected at a single point in time (cross-sectional), so the results do not indicate a long-term causal relationship, but rather interpret the interactions between variables as theoretical relationships based on a structural model.

RESULTS AND DISCUSSION

The Influence of Digital Literacy on Readiness for Digital Change

The results of the study indicate that digital literacy has a positive and significant effect on readiness for digital change ($\beta = 0.226$; $p = 0.001$). This finding proves that the higher the digital literacy level of civil servants at the Ministry of Communication and Information Technology's Human Resources Development Agency (*BPSDM Kemkomdigi*), the higher their readiness to face digital changes occurring in the organizational environment. This finding indicates that digital literacy not only functions as a technical ability in using digital devices and applications, but also serves as an important asset that helps employees understand, accept, and adapt to changes resulting from digital transformation. Civil servants with good digital skills tend to be more confident in using new technologies, more easily understand the benefits of digital change, and are better prepared to carry out digitalized work processes.

The results of this study align with the views of Van Laar et al. (2017, 2020), who assert that digital literacy is a multidimensional competency that enables individuals to participate effectively in a digital work environment. Strong digital skills enhance employees' ability to access information, solve problems, collaborate digitally, and adapt to changing job demands. These findings also support research by Çulhaoğlu Uluđağ (2023), which found that digital literacy positively influences readiness for organizational change. In the context of this study, these results indicate that civil servants with higher digital skills tend to demonstrate greater readiness for organizational digital transformation. However, the path coefficient value of 0.226 indicates that the direct effect of digital literacy on readiness for digital change is relatively moderate. This finding indicates that improving digital literacy alone is not sufficient to produce optimal readiness for digital change, and that other psychological factors contribute to determining how digital competence translates into readiness for change.

The Influence of Digital Literacy on Resistance to Change

The results showed that digital literacy had a negative and significant effect on resistance to change ($\beta = -0.605$; $p < 0.001$). This means that the higher the level of digital literacy of civil servants, the lower their level of resistance to digital change. This finding is one of the strongest results in the study, as it produced the largest influence coefficient among all the direct relationships tested. The effect size value ($f^2 = 0.576$) also indicates that the influence of digital literacy on resistance to change is in the large category.

These results indicate that digital literacy serves as a factor capable of reducing employee uncertainty, anxiety, and fear regarding digital change. Employees who understand technology tend to be more confident in their abilities to navigate new systems, thus not viewing digital change as a threat to their jobs. This finding is consistent with the theory of resistance to change developed by Oreg (2006), which explains that resistance arises when individuals perceive change as risky, disruptive to routines, or uncomfortable. In the context of digital transformation, high digital literacy helps reduce these negative perceptions because employees feel more capable of facing the demands of change. Thus, the results of this study show that increasing digital literacy not only improves employees' technical competence but also acts as a psychological mechanism that reduces employees' tendency to resist change.

The Influence of Resistance to Change on Readiness for Digital Change

The results showed that resistance to change had a negative and significant effect on readiness for digital change ($\beta = -0.568$; $p < 0.001$). The higher the level of employee resistance to change, the lower their readiness to face the organization's digital transformation. The effect size value ($f^2 = 0.434$) indicates that resistance to change has a significant influence on readiness for digital change. This finding suggests that psychological factors play a crucial role in determining the success of digital transformation.

These results support the readiness for change model developed by Holt et al. (2007), which explains that readiness for change is influenced by an individual's belief in their own abilities, perceptions of the benefits of change, organizational support, and the belief that change will benefit them. When employees have high levels of resistance, they tend to view change as a threat, resist the adaptation process, and are reluctant to participate in change implementation. Conversely, when resistance is suppressed, employees become more open to innovation, more ready to accept change, and more willing to participate in the digital transformation process. These findings strengthen the argument that the success of digital transformation is not solely a matter of technology, but also a matter of managing human behavior and attitudes within the organization.

The Mediating Role of Resistance to Change in the Relationship between Digital Literacy and Readiness for Digital Change

The test results show that resistance to change significantly mediates the relationship between digital literacy and readiness for digital change. The indirect effect of digital literacy on readiness for digital change through resistance to change is $\beta = 0.344$, which is greater than the direct effect of $\beta = 0.226$. Because the direct and indirect effects are both significant, the type of mediation that occurs is partial mediation.

This finding constitutes the research's primary theoretical contribution. The results demonstrate that digital literacy not only directly increases readiness for digital change but primarily works by reducing resistance to change. In other words, civil servants (ASN) are not automatically ready for digital change simply because they possess high digital skills. This readiness will be optimally enhanced when their digital skills can reduce fear, doubt, discomfort, and resistance to change. This finding reinforces the research of Çulhaoğlu Uluđağ (2023), which demonstrated that resistance to change is an important psychological mechanism that bridges the relationship between digital literacy and readiness for change.

In the context of the Human Resources Development Agency (BPSDM) of the Ministry of Communication and Digital (Kemkomdigi), these results indicate that digital literacy improvement programs need to be integrated with change management strategies. Organizations need to address more than just digital training; they also need to manage employee psychological well-being through change communication, mentoring, employee engagement, and strengthening an adaptive organizational culture. A summary of the results of this research hypothesis testing is shown in Table 9.

Overall, these four findings complement each other in explaining the dynamics of the relationship between digital literacy, resistance to change, and readiness for digital change in ASN BPSDM Kemkomdigi. The effect of digital literacy on resistance to change ($\beta = -0.605$), which is much greater than its direct effect on readiness for digital change ($\beta = 0.226$), indicates that the main contribution of digital literacy to readiness for change lies in its ability to reduce employee psychological resistance. This is in line with Piderit's (2000) view that individual

attitudes toward organizational change are multidimensional and ambivalent, so that interventions that only target cognitive aspects or technical skills without considering the affective and behavioral dimensions tend to be less effective in encouraging readiness for change as a whole.

The findings regarding the partial mediation role of resistance to change also have important implications for the formulation of digital human resource development policies within the Human Resources Development Agency (BPSDM) of the Ministry of Communication and Digital Technology. Because the indirect effect (β = 0.344) is greater than the direct effect (β = 0.226), strategies to increase readiness for digital change that focus solely on technical training without efforts to reduce resistance tend to be less than optimal. Conversely, a combination of digital capacity building and change management interventions that target the cognitive, affective, and behavioral dimensions of civil servants is expected to have a greater impact on civil servant readiness in facing organizational digital transformation.

The practical implications of these findings are also relevant to the strategic position of BPSDM as the unit responsible for developing the competencies of communication and digital human resources within the Ministry of Communication and Digital Technology. As a unit that also serves as a role model for other agencies, BPSDM needs to ensure that digital literacy improvement programs for its internal employees are not only oriented towards fulfilling technical competencies according to the IMDI 2025 framework, but also accompanied by change mentoring programs, discussion forums, and employee involvement in digital transformation planning, so that resistance to change can be proactively managed from the early stages of implementation.

Table 9. Summary of Hypothesis Testing Results

Hypothesis	Relationship between variables	Path Coefficient (β)	Significance	Information
H1	Digital Literacy → Readiness for Digital Change	0.226	p = 0.001	Significant (positive)
H2	Digital Literacy → Resistance to Change	-0.605	p < 0.001	Significant (negative)
H3	Resistance to Change → Readiness for Digital Change	-0.568	p < 0.001	Significant (negative)
H4	Digital Literacy → Resistance to Change → Readiness for Digital Change	0.344	Significant	Partial mediation

Source: Researcher Processed Results (2026)

CONCLUSION

Based on the results of a study of 282 civil servants (Aparatur Sipil Negara/ASN) at the Badan Pengembangan Sumber Daya Manusia (BPSDM) of the Kementerian Komunikasi dan Digital (Kemkomdigi), it can be concluded that digital literacy has a positive and significant effect on readiness for digital change. This means that the higher the employees' level of digital literacy, the greater their readiness to face digital change. Digital literacy also has a negative and significant effect on resistance to change, indicating that increased digital literacy can reduce employee resistance to digital change. Furthermore, resistance to change has a negative

and significant effect on readiness for digital change, meaning that the higher employees' resistance to change, the lower their readiness to face organizational digital transformation. This study also proves that resistance to change partially mediates the relationship between digital literacy and readiness for digital change, with the indirect effect through resistance to change being greater than the direct effect. Thus, civil servants' readiness for digital change is determined not only by their digital capabilities but also by the organization's success in reducing employee resistance to change. Therefore, the success of digital transformation in the bureaucratic environment requires the simultaneous strengthening of digital competencies and management of the psychological aspects of change. Based on these findings, it is recommended that BPSDM Kemkomdigi integrate digital literacy improvement programs with a more comprehensive change management strategy through intensive change communication, continuous mentoring, active employee involvement in the digital transformation process, and the strengthening of an organizational culture that is adaptive to change. This will ensure that improvements in digital technical competence are accompanied by reduced psychological resistance and optimal improvement in ASN readiness to face government digital transformation.

REFERENCE

Aiken, M., & Bucy, E. P. (2021). Digital literacy and the challenges of fake news. Political Communication, 38(1), 1–23.

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), Modern methods for business research (pp. 295–336). Lawrence Erlbaum Associates.

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). SAGE.

Çulhaoğlu Uluđağ, C. (2023). Digital literacy (competency) and readiness for organizational change: The mediator role of resistance to change. Journal of Business Research-Turk, 15(1), 704–717. https://doi.org/10.20491/isarder.2023.1613

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18(1), 39–50.

Ghozali, I. (2016). Multivariate analysis application with IBM SPSS 23 program (8th ed.). Diponegoro University Publishing Agency.

Hair, J.F., Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2019). A primer on partial least squares structural equation modeling (PLS-SEM) (2nd ed.). SAGE.

Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M., Danks, N.P., & Ray, S. (2021). Partial least squares structural equation modeling (PLS-SEM) using R: A workbook. Springer.

Haug, N., Dan, S., & Mergel, I. (2024). Digitally-induced change in the public sector: A systematic review and research agenda. Public Management Review, 26(7), 1963–1987. https://doi.org/10.1080/14719037.2023.2234917

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In RR Sinkovics & PN Ghauri (Eds.), New challenges to international marketing (Vol. 20, pp. 277–319). Emerald Group Publishing.

Holt, D.T., Armenakis, A.A., Feild, H.S., & Harris, S.G. (2007). Readiness for organizational change: The systematic development of a scale. The Journal of Applied Behavioral Science, 43(2), 232–255. https://doi.org/10.1177/0021886306295295

Ly, N.T., & Huong, N.T. (2024). Exploring the nexus of organizational culture, digital capabilities, and organizational readiness for change in primary school in digital transformation: A quantitative analysis. International Journal of Educational Methodology, 10(2), 325–336. https://doi.org/10.12973/ijem.10.2.325

Mergel, I. (2019). Digital transformation in the public sector: A quick overview. Public Administration Review, 79(6), 1045–1051.

Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. Government Information Quarterly, 36(4), 101385. https://doi.org/10.1016/j.giq.2019.06.002

Neuman, W. L. (2014). Social research methods: Qualitative and quantitative approaches (7th ed.). Pearson.

Neuman, W. L., & Robson, K. (2015). Basics of social research: Qualitative and quantitative approaches (3rd Canadian ed.). Pearson Canada.

Nunnally, J. C., & Bernstein, I. H. (1994). Psychometric theory (3rd ed.). McGraw-Hill.

Oreg, S. (2006). Personality, context, and resistance to organizational change. European Journal of Work and Organizational Psychology, 15(1), 73–101. https://doi.org/10.1080/13594320500451247

Pallant, J. (2001). SPSS survival manual. Open University Press.

Piderit, S. K. (2000). Rethinking resistance and recognizing ambivalence: A multidimensional view of attitudes toward an organizational change. Academy of Management Review, 25(4), 783–794.

Prasetyo, B., & Jannah, LM (2005). Quantitative research methods: Theory and application. RajaGrafindo Persada.

Rumata, VM, & Nugraha, DA (2020). Low levels of digital behavior among civil servants at the Ministry of Communication and Information: A digital literacy survey in government agencies. Journal of Communication Studies, 4(2), 467–484. https://doi.org/10.25139/jsk.v4i2.2230

Scholkmann, A. B. (2020). Resistance to (digital) change: Individual, systemic and technological perspectives. In A. Bondarouk & H. Lepak (Eds.), Advances in digital work (pp. 55–78). Springer.

Sekaran, U., & Bougie, R. (2016). Research methods for business: A skill-building approach (7th ed.). John Wiley & Sons.

SMERU Research Institute, GIZ, & Blavatnik School of Government, University of Oxford. (2024). Analysis of digital skills development in the public sector in Indonesia. The SMERU Research Institute.

Sugiyono. (2021). Quantitative, qualitative, and R&D research methods. Alfabeta.