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Digital Competence as a Predictor of AI Readiness in Public Sector Organizations: Evidence from Indonesian Civil Servants

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A B S T R A C T

The growing use of artificial intelligence (AI) in government institutions requires public employees to possess competencies that enable them to work effectively with emerging digital technologies. Digital competence is therefore increasingly relevant to the development of an AI-ready public workforce. This study examines whether digital competence influences AI readiness among civil servants at the Regional Office of the Ministry of Law of West Java, Indonesia. A quantitative approach was applied using a census method involving 131 civil servants. Digital competence was operationalized through the five competency areas of DigComp 2.2, while AI readiness was represented by AI Knowledge and Literacy, AI Capability, and Responsible AI Orientation. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results show that digital competence has a positive and statistically significant effect on AI readiness ($\beta = 0.841$, $t = 33.880$, $p < 0.001$). The model explains 70.8% of the variance in AI readiness ($R^2 = 0.708$), while the effect size indicates a large contribution of digital competence to AI readiness ($f^2 = 2.423$). The predictive assessment also produced a positive Q^2predict value of 0.704 for AI readiness. These findings indicate that digital competence represents an important individual capability in preparing civil servants to understand, use, and respond appropriately to AI technologies in the workplace. The study highlights the need for public organizations to strengthen digital competency development as part of broader efforts to establish an AI-ready workforce.

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INTRODUCTION

Artificial intelligence (AI) is increasingly becoming part of how public institutions formulate policies, carry out administrative work, and provide services. Governments are applying AI to activities such as data processing, workflow assistance, service enhancement, and decision support. OECD evidence shows that AI applications are expanding across government functions, although the degree of preparedness and implementation differs among countries. For that reason, introducing AI in government involves more than providing technological infrastructure. Public institutions also need suitable governance, organizational capacity, workforce skills, and employees who can operate AI-supported systems effectively (OECD, 2024; Mergel et al., 2023).

The adoption of AI has distinctive implications for public organizations because government operations are subject to accountability, transparency, public value, and citizen data protection requirements. Although AI can improve public-sector performance, its application may also raise concerns related to privacy, bias, transparency, accountability, and human oversight. The OECD therefore identifies workforce skills and talent as key enablers of trustworthy government AI, alongside governance, data, digital infrastructure, investment, procurement, and partnerships (OECD, 2024). More recent OECD evidence also points to capability gaps as a major obstacle to AI adoption. Public employees consequently need AI-specific knowledge together with supporting capabilities such as problem solving, critical thinking, collaboration, and continuous learning (OECD, 2026).

These conditions place greater attention on the capabilities of employees who are expected to work with AI rather than on technology availability alone. Digital competence is relevant because it forms part of the foundation needed to operate in technology-rich workplaces. DigComp 2.2 organizes digital competence into five areas: information and data literacy, communication and collaboration, digital content creation, safety, and problem solving (Vuorikari et al., 2022). The framework treats digital competence as a combination of knowledge, skills, and responsible practices. These capabilities are directly relevant to AI-supported work because employees need to assess digital information, communicate through digital platforms, create and manage content, protect information, and identify suitable technological solutions.

The link between digital competence and AI readiness is also important for understanding how government organizations can implement AI. Mergel et al. (2023) argue that public-sector AI implementation involves organizational and managerial adjustments, not merely the introduction of a new technology. Public organizations must modify work practices and build the capacity needed to incorporate AI into existing processes. In the same direction, the OECD framework for an AI-ready public workforce emphasizes that public employees generally need sufficient AI literacy to interact with AI tools in an effective and responsible manner. Problem solving, critical thinking, teamwork, and continuous learning remain important supporting capabilities (OECD, 2026). This perspective indicates that existing digital capabilities can serve as a foundation for developing readiness to work with AI.

Although AI has received growing attention in public administration, empirical studies that directly examine the relationship between general digital competence and AI readiness among civil servants are still limited. Previous research has largely focused on AI adoption, acceptance, implementation, and digital transformation, while workforce readiness has received greater attention in education and other organizational contexts. Studies involving public-sector managers have also examined factors affecting intentions to adopt AI, showing that both individual and organizational conditions matter for adoption (2024). However, fewer studies have examined whether a broad portfolio of digital competencies can explain employees' readiness to understand, use, and respond to AI within government organizations. This gap matters because successful public-sector AI implementation depends not only on policies and infrastructure but also on the capabilities of employees who use and interact with the technology.

In response to this gap, this study investigates the effect of Digital Competence on AI Readiness among civil servants at the Regional Office of the Ministry of Law of West Java, Indonesia. Digital Competence is measured using the five DigComp 2.2 areas, namely Information and Data Literacy, Communication and Collaboration, Digital Content Creation, Safety, and Problem Solving. AI Readiness is represented by AI Knowledge and Literacy, AI Capability, and Responsible AI Orientation. By focusing on civil servants as the unit of analysis, the study shifts attention from a technology-centered view of AI readiness toward the capabilities of employees who are expected to use AI. The study therefore asks: To what extent does Digital Competence influence AI Readiness among civil servants in a public-sector organization?

LITERATURE REVIEW

Digital Competence

Digital Competence describes an individual's capacity to use digital technologies in an effective, critical, and responsible manner across different situations. It is broader than basic technical proficiency because it includes evaluating information, communicating and working with others in digital environments, producing digital content, protecting digital resources, and resolving technology-related problems. DigComp 2.2 offers a comprehensive structure for these capabilities through five competence areas: Information and Data Literacy, Communication and Collaboration, Digital Content Creation, Safety, and Problem Solving (Vuorikari et al., 2022).

The five areas in DigComp 2.2 capture different but related capabilities required in contemporary digital work. Information and Data Literacy concerns the ability to locate, assess, and manage digital information and data. Communication and Collaboration concerns interaction and cooperation through digital technologies. Digital Content Creation covers the production and modification of digital materials, whereas Safety relates to protecting devices, data, privacy, and digital well-being. Problem Solving concerns recognizing technological needs, choosing suitable digital solutions, and dealing with technology-related difficulties (Vuorikari et al., 2022). Taken together, these dimensions describe a broad capacity to engage with digital technologies.

Digital Competence becomes increasingly important as public organizations expand digital technologies across administrative activities and service delivery. Digital transformation requires civil servants to adjust established work practices and develop capabilities suitable for technology-enabled environments. The OECD (2024) identifies digital skills as an important element of workforce development for digital government, while Mergel et al. (2023) explain that public-sector digital transformation also requires changes in organizational practices and workforce capabilities. Accordingly, this study treats Digital Competence as a multidimensional higher-order construct based on the five DigComp 2.2 areas. This construct provides the basis for examining employees' preparedness to work with emerging technologies, including artificial intelligence.

AI Readiness

AI Readiness refers to the degree to which employees are prepared to understand, use, and respond appropriately to artificial intelligence in their work. In public organizations, readiness cannot be reduced to whether AI technology is available. Employees also require adequate knowledge, practical capability, and awareness of the risks that may accompany AI use. The OECD (2024) emphasizes that trustworthy AI implementation in government depends on workforce capabilities in addition to governance, data, infrastructure, and organizational support. Employee preparedness is therefore a relevant element of public-sector AI implementation.

For civil servants, AI readiness involves understanding fundamental AI concepts, recognizing the technology's potential and limitations, and applying AI tools appropriately to work activities. The OECD (2026) identifies AI literacy as an important requirement for public employees and also highlights critical thinking, problem solving, data protection, and independent judgment as complementary capabilities. AI readiness therefore contains both functional and responsible-use elements. Employees need to work with AI effectively while retaining professional judgment and recognizing possible risks associated with its use.

Drawing on this perspective, the study defines AI Readiness as a multidimensional higher-order construct consisting of AI Knowledge and Literacy, AI Capability, and Responsible AI Orientation. AI Knowledge and Literacy reflects employees' understanding of AI concepts, functions, opportunities, and limitations. AI Capability concerns the ability to apply AI technologies to relevant work activities. Responsible AI Orientation represents awareness of ethical, privacy, accountability, transparency, and human-oversight considerations. This formulation treats AI Readiness as a broader employee capability that combines knowledge, practical application, and responsible engagement with AI.

The Relationship between Digital Competence and AI Readiness

Digital Competence may help employees establish the capabilities required when they encounter emerging technologies such as artificial intelligence. The ability to evaluate information, communicate through digital systems, solve

technology-related problems, and manage digital resources responsibly can support adaptation to changing technological demands. Social Cognitive Theory provides a theoretical basis for this argument because previous knowledge and experience can influence individual capability and responses to new situations. Employees who possess stronger digital competence may therefore have greater capacity to learn about and engage with AI technologies.

This relationship is especially relevant in public-sector settings. The OECD (2026) identifies digital skills as a foundation for employees who interact with AI and simultaneously emphasizes AI literacy, critical thinking, problem solving, data protection, and independent judgment. Several of these requirements correspond with DigComp 2.2, particularly Information and Data Literacy, Safety, and Problem Solving (Vuorikari et al., 2022; OECD, 2026). Digital competence can consequently assist employees in interpreting digital information, assessing AI-generated outputs, resolving technology-related problems, and applying AI with appropriate care.

AI implementation also requires employees to adjust established work practices and develop capabilities that complement technological systems (Mergel et al., 2023). Civil servants with stronger digital competence can therefore be expected to have greater preparedness to understand AI, apply relevant tools, and deal with both the opportunities and risks associated with them. On the basis of these theoretical and empirical considerations, the following hypothesis is proposed:

H1: Digital Competence has a positive effect on AI Readiness.

Drawing on the theoretical arguments and empirical evidence discussed above, the study develops a conceptual framework that combines DigComp 2.2 with AI Readiness perspectives from OECD, UNESCO, and Mergel et al. Digital Competence is specified as the independent construct and represented through five dimensions, while AI Readiness is specified as the dependent construct and represented through AI Knowledge and Literacy, AI Capability, and Responsible AI Orientation. The framework proposes that stronger digital competence is associated with greater readiness among public employees to adopt and use AI effectively in their organizational work.

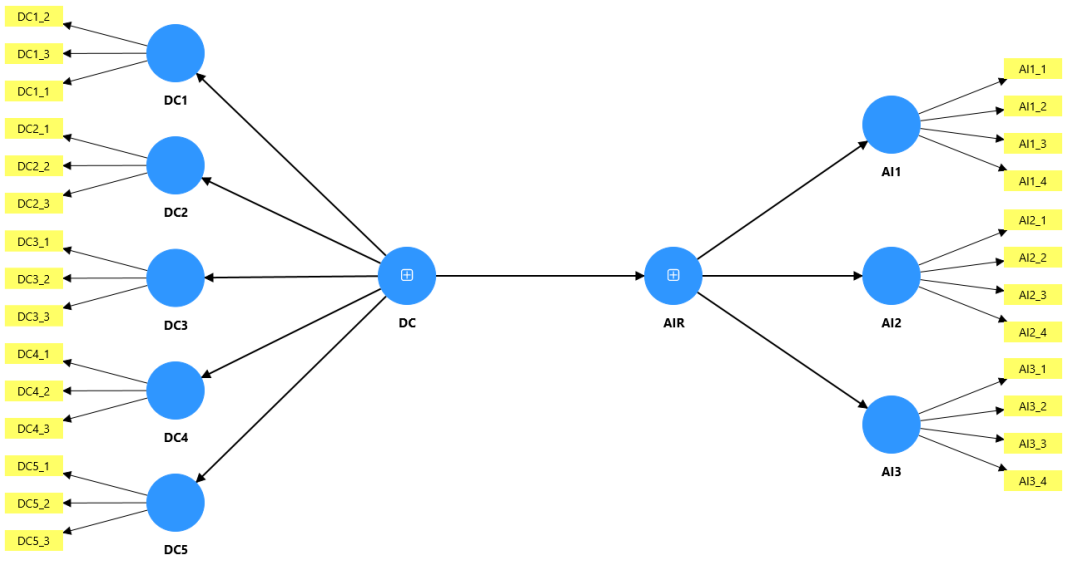

Figure 1. Conceptual Framework

METHODOLOGY

Research Design

A quantitative research design was used to investigate the relationship between Digital Competence and AI Readiness among civil servants. This approach is suitable for testing relationships among predefined constructs through numerical observations and statistical analysis (Creswell & Creswell, 2023). The study employed a cross-sectional design, with data gathered during one research period to capture respondents' perceptions of their digital competence and preparedness to work with artificial intelligence.

The research model specifies Digital Competence as the exogenous construct and AI Readiness as the endogenous construct. Both were modeled as reflective-reflective higher-order constructs. Digital Competence consists of the five dimensions derived from DigComp 2.2, whereas AI Readiness contains three dimensions developed from literature concerning AI-related competencies and responsible AI use. This multidimensional design permits assessment at both the dimension level and the higher-order construct level (Hair et al., 2022).

The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4.1. PLS-SEM was chosen because the proposed model contains higher-order constructs and requires simultaneous assessment of latent-variable relationships and measurement properties (Hair et al., 2022). The analysis comprised measurement-model evaluation, structural-model assessment, and bootstrapping to determine the significance of the proposed relationship between Digital Competence and AI Readiness.

Population and Sample

The study population consisted of 131 civil servants employed at the Regional Office of the Ministry of Law of West Java, Indonesia. Because the population was small and accessible in its entirety, the study used a census approach and included all members of the target population as respondents. Census sampling is suitable when researchers can collect information from every

member of the population of interest, allowing the resulting analysis to describe the defined population rather than a selected sample (Sugiyono, 2022).

The final dataset therefore contained 131 respondents and represented the complete target population. Since every eligible member was invited to participate, a separate sample-size calculation was not required. This approach was applied to ensure that the analysis covered all members of the population defined in the study.

Data Collection Technique

Data were obtained through a structured questionnaire distributed to the 131 civil servants included in the population. Responses were recorded on a five-point Likert scale from 1 = strongly disagree to 5 = strongly agree. The scale was used to measure respondents' perceptions of Digital Competence and AI Readiness. A structured questionnaire supports quantitative research by applying the same measurement format across respondents and producing data suitable for statistical analysis (Creswell & Creswell, 2023).

The collected responses were screened before analysis to confirm completeness and suitability. After screening, 131 responses were retained as valid observations. The complete dataset was then analyzed using PLS-SEM.

Operational Definitions

The operationalization of the research constructs was based on established theoretical frameworks. Digital Competence was measured using the Digital Competence Framework for Citizens, DigComp 2.2, developed by Vuorikari et al. (2022). AI Readiness was operationalized by integrating the AI readiness perspectives of OECD (2026), UNESCO (2024), and Mergel et al. (2024). Both constructs were measured through reflective indicators adapted to the public-sector context. Respondents rated each statement on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The operational definitions are summarized in Table 1.

Table 1. Operational Definitions

Variable	Dimensions	Indicators	Code	References
Digital Competence	Information and Data Literacy	Ability to search, evaluate, and manage digital information	DC1_1 – DC1_3	Vuorikari et al. (2022)
	Communication and Collaboration	Ability to communicate and collaborate using digital technologies	DC2_1 – DC2_3	Vuorikari et al. (2022)

Variable	Dimensions	Indicators	Code	References
	Digital Content Creation	Ability to create and modify digital content while respecting intellectual property	DC3_1 – DC3_3	Vuorikari et al. (2022)
	Safety	Ability to protect devices, personal data, privacy, and digital well-being	DC4_1 – DC4_3	Vuorikari et al. (2022)
	Problem Solving	Ability to solve technical problems and adapt to new digital technologies	DC5_1 – DC5_3	Vuorikari et al. (2022)
AI Readiness	AI Knowledge & Literacy	Understanding AI concepts, opportunities, limitations, and applications	AI1_1 – AI1_4	UNESCO (2024); OECD (2026)
	AI Capability	Ability to use AI tools to support work tasks and decision-making	AI2_1 – AI2_4	OECD (2026); Mergel et al. (2024)
	Responsible AI Orientation	Readiness to use AI ethically, transparently, securely, and responsibly	AI3_1 – AI3_4	UNESCO (2024); OECD (2026)

RESULT AND DISCUSSION

Respondent Characteristics

The study included 131 civil servants from the Regional Office of the Ministry of Law of West Java, with all members of the population participating through total sampling. Respondent characteristics were examined to describe the composition of the research participants and provide context for interpreting the empirical results. The demographic variables considered were gender, age, educational attainment, position, and years of service. The distribution of respondents is reported in Table 2.

Table 2. Respondent Characteristics

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	63	48%
	Female	68	52%
Age	≤ 30 years	14	11%
	31–40 years	46	35%
	41–50 years	54	41%
	> 50 years	17	13%
Educational Attainment	High School	19	15%
	Diploma	5	4%
	Bachelor's Degree	95	73%
	Master's Degree	11	8%
	Doctoral Degree	1	1%
Position	Administrative Staff	32	24%
	Functional Officer	93	71%
	Structural Officer	6	5%
Years of Service	< 5 years	19	15%
	5–10 years	26	20%
	11–20 years	49	37%
	> 20 years	37	28%

Measurement Model Evaluation

The measurement model was evaluated before the structural relationships were interpreted. Because both research constructs were specified as reflective-reflective higher-order constructs, the assessment covered indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. The evaluation criteria followed established recommendations for reflective measurement models (Hair et al., 2022).

Indicator Reliability

Indicator reliability was examined using the outer loadings of the dimensions that form each higher-order construct. An outer loading greater than 0.70 is generally considered sufficient to show that a dimension adequately represents its associated construct (Hair et al., 2022).

Table 3. Indicator Reliability

Higher-Order Construct	Dimension	Outer Loading
AI Readiness	AI Capability	0.889
AI Readiness	AI Knowledge & Literacy	0.897
AI Readiness	Responsible AI Orientation	0.872
Digital Competence	Communication & Collaboration	0.866
Digital Competence	Digital Content Creation	0.807
Digital Competence	Information & Data Literacy	0.818
Digital Competence	Problem Solving	0.850
Digital Competence	Safety	0.851

The outer loadings ranged from 0.807 to 0.897, and every value was above the 0.70 criterion. These results indicate that each dimension provides an adequate representation of its respective higher-order construct. Consequently, no dimension was removed on the basis of indicator reliability.

Internal Consistency Reliability

Internal consistency reliability was evaluated using Cronbach's alpha, rho_A, and composite reliability (rho_C). For reflective constructs, coefficient values above 0.70 are generally interpreted as indicating acceptable internal consistency (Hair et al., 2022).

Table 4. Internal Consistency Reliability

Construct	Cronbach's Alpha	rho_A	rho_C
AI Readiness	0.863	0.864	0.916
Digital Competence	0.894	0.896	0.922

All three reliability coefficients exceeded the 0.70 criterion for both higher-order constructs. AI Readiness recorded Cronbach's alpha of 0.863, rho_A of 0.864, and rho_C of 0.916. The corresponding values for Digital Competence were 0.894, 0.896, and 0.922. The results therefore indicate satisfactory internal consistency for both constructs.

Convergent Validity

Convergent validity was evaluated through the Average Variance Extracted (AVE). An AVE of 0.50 or higher indicates that a construct accounts for at least half of the variance in its indicators (Hair et al., 2022).

Table 5. Convergent Validity

Construct	AVE	Assessment
AI Readiness	0.785	Valid
Digital Competence	0.703	Valid

The AVE for AI Readiness was 0.785, whereas Digital Competence produced an AVE of 0.703. Both coefficients are above the 0.50 criterion. The two higher-order constructs therefore satisfy the convergent validity requirement.

Discriminant Validity

Discriminant validity was examined using the Heterotrait-Monotrait ratio (HTMT) together with the Fornell-Larcker criterion. Under the commonly applied HTMT guideline, values below 0.90 indicate acceptable discriminant validity (Hair et al., 2022).

Table 6. HTMT Results

Criterion	AI Readiness	Digital Competence
Fornell-Larcker: AI Readiness	0.886	
Fornell-Larcker: Digital Competence	0.841	0.839
HTMT: Digital Competence ↔ AI Readiness	0.956	

The Fornell-Larcker assessment shows that the square root of AVE for each construct is greater than its correlation with the other construct. This criterion is therefore satisfied. In contrast, the HTMT coefficient of 0.956 is above the commonly used 0.90 threshold. The result points to a potential discriminant-validity concern because Digital Competence and AI Readiness are empirically very close. This issue should be taken into account when interpreting the measurement model and the strength of the structural relationship.

Structural Model Evaluation

Following the measurement-model assessment, the structural model was evaluated in terms of collinearity, explanatory power, effect size, predictive performance, and hypothesis testing.

Collinearity Assessment

Structural collinearity was assessed through the Variance Inflation Factor (VIF). The VIF for the path from Digital Competence to AI Readiness was 1.000, showing no indication of a collinearity problem in the structural relationship.

Table 7. Collinearity Statistics (VIF)

Structural Relationship	VIF
Digital Competence → AI Readiness	1.000

The structural VIF of 1.000 is well below the commonly used threshold of 5.00. Collinearity therefore does not appear to distort the estimation of the proposed structural path.

At the outer-model level, the VIF values for the eight dimensions ranged between 1.977 and 2.569, which are also below the recommended threshold. The findings do not indicate problematic collinearity at either the measurement or structural level.

Coefficient of Determination (R^2)

The coefficient of determination, R^2, was used to evaluate how much variance in the endogenous construct can be explained by the predictor. In this model, R^2 represents the proportion of AI Readiness variance accounted for by Digital Competence (Hair et al., 2022).

Table 8. Coefficient of Determination

Endogenous Construct	R^2	Adjusted R^2
AI Readiness	**0.708**	**0.706**

The model yielded an R^2 of 0.708, meaning that Digital Competence accounts for approximately 70.8% of the variance in AI Readiness. The remaining 29.2% reflects influences not represented in the proposed model. The adjusted R^2 of 0.706 shows that the explanatory capability remains essentially stable after adjustment.

Effect Size (f^2)

The f^2 statistic was used to determine the magnitude of Digital Competence's contribution to the explained variance of AI Readiness. Hair et al. (2022) use values of 0.02, 0.15, and 0.35 as reference points for small, medium, and large effects, respectively.

Table 9. Effect Size

Structural Relationship	f^2	Assessment
Digital Competence → AI Readiness	**2.423**	Large

The obtained f^2 of 2.423 is considerably higher than the 0.35 reference value. It therefore represents a large effect and indicates that Digital Competence contributes substantially to explaining variation in AI Readiness.

Predictive Assessment (PLSpredict)

PLSpredict was applied to examine the model's out-of-sample predictive performance. In contrast to conventional in-sample measures, this procedure compares prediction errors from the PLS-SEM model with errors produced by a linear-model benchmark, providing additional information about predictive performance (Hair et al., 2022).

Table 10. Summary of PLSpredict Results

Construct / Dimension	Q^2predict	PLS-SEM RMSE	LM RMSE
AI Readiness	**0.704**	**0.554**	0.558
AI Capability	0.538	0.685	0.684
AI Knowledge & Literacy	0.589	0.645	0.647
Responsible AI Orientation	0.518	0.700	0.711

AI Readiness produced a Q^2predict value of 0.704, indicating positive predictive relevance. The three dimensions of AI Readiness also showed positive Q^2predict values, ranging from 0.518 to 0.589.

For AI Readiness overall, AI Knowledge and Literacy, and Responsible AI Orientation, the PLS-SEM model generated lower RMSE values than the linear benchmark. For AI Capability, however, the PLS-SEM RMSE was slightly higher than the LM value. The results therefore indicate useful predictive performance overall, but the relative predictive advantage is not identical across all AI Readiness dimensions.

Hypothesis Testing

The proposed hypothesis was tested through bootstrapping in SmartPLS 4. The structural path was evaluated using the path coefficient (β), t-statistic, and p-value, following the recommended PLS-SEM procedure (Hair et al., 2022). Statistical support was determined using a t-statistic above 1.96 and a p-value below 0.05.

Table 11. Hypothesis Testing Results

Hypothesis	Structural Relationship	β	t-statistic	p-value	Decision
H1	Digital Competence → AI Readiness	**0.841**	**33.880**	**< 0.001**	**Supported**

The analysis confirms a positive and statistically significant relationship between Digital Competence and AI Readiness. The estimated path coefficient was 0.841, while the bootstrapping procedure generated a t-statistic of 33.880 and $p < 0.001$. The 95% bootstrap confidence interval extended from 0.789 to 0.885 and did not cross zero. H1 is therefore supported by the empirical results.

The empirical results show a strong positive association between Digital Competence and AI Readiness among the civil servants examined. The path coefficient of 0.841, together with an f^2 of 2.423, indicates a substantial structural contribution. Digital Competence also accounts for 70.8% of the variance in AI Readiness. The evidence supports H1 and indicates that employee capability is an important element in preparing public-sector workforces for AI adoption. This interpretation is consistent with the OECD (2026), which identifies workforce capability gaps as an important obstacle to effective AI adoption in public administration.

Social Cognitive Theory provides a useful explanation for the observed relationship because the theory connects individual capability and behavior with previous experience and environmental conditions. Digital competence gives employees experience in assessing information, working with digital tools, communicating through digital environments, resolving technology-related issues, and managing digital risks. These established capabilities may reduce the difficulty of adapting to AI-based technologies that introduce new forms of interaction and decision-making. The finding therefore supports the argument that existing digital capabilities can serve as a basis for developing readiness toward more advanced technologies. It is also compatible with DigComp 2.2, which describes digital competence in terms of knowledge, skills, and attitudes that support confident, critical, and safe engagement with digital technologies, including emerging AI applications (Vuorikari et al., 2022).

The finding is particularly relevant for government organizations because AI readiness requires more than the ability to operate an AI application. Civil servants also need to understand how AI works, recognize its limitations, assess its outputs, and retain appropriate professional judgment. The OECD (2026) highlights general AI knowledge, risk awareness, ethical use, data protection, critical thinking, and independent judgment as relevant capabilities for public employees. The strong association observed in this study suggests that strengthening general digital competence may help establish the capabilities

required for these AI-related tasks. Nevertheless, Digital Competence should not be treated as a replacement for specialized AI training. Instead, it can function as a foundational capability that supports later AI learning and adaptation in the workplace.

The PLSpredict findings add an out-of-sample perspective to the structural results. The positive Q^2predict value for AI Readiness indicates predictive relevance, while the comparison of RMSE values shows that the PLS-SEM model performs better than the linear benchmark for AI Readiness overall. The pattern is not uniform across the three dimensions. PLS-SEM performs better for AI Knowledge and Literacy and Responsible AI Orientation, whereas AI Capability shows a marginally higher prediction error than the benchmark. This pattern suggests that knowledge, practical application, and responsible engagement with AI may not develop at the same pace. Public organizations may therefore benefit from differentiated workforce-development strategies instead of relying on one general AI training program. This interpretation is consistent with OECD evidence that AI training needs can vary across workforce groups and job responsibilities.

The findings also have practical implications for developing an AI-ready civil service. Public organizations should position digital competence development within a wider workforce strategy for AI adoption rather than treating it as an isolated digitalization program. Development activities can strengthen information and data literacy, problem solving, digital safety, and digital collaboration as foundational capabilities, followed by more specific learning in AI knowledge, practical AI use, and responsible AI practices. The HTMT value of 0.956 also indicates that Digital Competence and AI Readiness are empirically highly related, so the strength of the observed relationship should be interpreted with caution. Future studies should examine whether factors such as AI-specific training, organizational support, leadership, and AI governance add explanatory power beyond Digital Competence. This is consistent with the OECD view that effective government AI requires a combination of workforce skills, organizational capacity, governance, and safeguards rather than reliance on one capability alone.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The study finds that Digital Competence has a positive and statistically significant effect on AI Readiness among civil servants at the Regional Office of the Ministry of Law of West Java. Digital Competence explains 70.8% of the variance in AI Readiness, demonstrating a strong structural relationship between the two constructs. The result indicates that information and data literacy, communication and collaboration, digital content creation, safety, and problem solving are relevant foundations for employees' preparedness to work with AI. The finding also highlights the importance of workforce capability in public-sector AI adoption, where technological proficiency must be accompanied by sound judgment and responsible use.

The study contributes to the AI readiness literature by examining Digital Competence as an employee-level capability in a public-sector setting. The

findings indicate that AI readiness should not be viewed only in terms of technological infrastructure or specialized AI skills, since broader digital capabilities are also relevant to workforce preparation. However, the study has several limitations. It focuses on civil servants within one public organization and tests only one predictor of AI Readiness. In addition, the relatively high HTMT value suggests that the empirical distinction between Digital Competence and AI Readiness warrants further examination. Future research should replicate the model across other public institutions and include factors such as AI-specific training, organizational support, leadership, and AI governance. Such extensions are consistent with OECD recommendations emphasizing continuous training, organizational capability, and governance alongside technology adoption.

Recommendations

The Regional Office of the Ministry of Law of West Java should incorporate Digital Competence development into its broader strategy for building an AI-ready workforce. Training priorities can include information and data literacy, digital problem solving, digital safety, and effective collaboration, followed by practical instruction on AI tools and their appropriate use in administrative work. This approach aligns with OECD (2026), which emphasizes continuous upskilling to strengthen public-sector AI capability and support employees as work processes change. AI learning should also reflect differences in job responsibilities. Basic AI literacy can be offered broadly, while more advanced training can be directed toward employees whose duties require deeper interaction with AI.

Future research should expand the model by considering additional determinants of AI Readiness, including AI-specific training, organizational support, leadership, digital infrastructure, and AI governance. Studies involving civil servants from multiple ministries or government institutions could also provide stronger evidence regarding the generalizability of the findings. The high HTMT value between Digital Competence and AI Readiness further indicates the need to examine whether the two constructs remain conceptually distinct across different settings. Such research can clarify how individual capabilities interact with organizational conditions in the development of an AI-ready public workforce. This direction remains relevant because skills development, organizational capacity, and governance are important conditions for expanding trustworthy AI use in government.

FURTHER STUDY

This study offers empirical evidence on the relationship between Digital Competence and AI Readiness among civil servants, but several research opportunities remain. First, future investigations should include a wider range of public organizations at regional and national levels. A broader research setting would allow comparisons across institutional contexts and different stages of digital transformation.

Second, future studies could introduce additional variables that may shape AI Readiness, including AI Self-Efficacy, Organizational Support, AI Governance, Digital Leadership, Innovation Culture, Technology Readiness, and

Perceived Usefulness. Including these factors could provide a more complete explanation of the individual, organizational, and technological conditions associated with AI readiness in public organizations.

Finally, future research could use longitudinal or mixed-method designs to capture changes in AI adoption and readiness over time. Interviews and case studies could complement quantitative analysis by providing more detailed evidence about organizational culture, implementation challenges, and policy conditions that influence AI deployment in public-sector settings.

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