Management Studies and Entrepreneurship Journal
Vol 6(5) 2025:554-562

The Influence Of Digital Competence On The Digitalization Of Public Services: The Role Of Digital Self-Efficacy Mediation And Work Innovation Among Civil Servants In Kupang City

Pengaruh Kompetensi Digital Terhadap Digitalisasi Pelayanan Publik: Peran Mediasi Self-Efficacy Digital Dan Inovasi Kerja Di Kalangan ASN Di Kota Kupang

Tuti Setyorini[1*], Janri D. Manafe[2], Krysler K. Adoe[3,] M. L. Junior Boni Geti[4]
Administrasi Bisnis, Politeknik Negeri Kupang[1,2,3,4]
tuti.setyorini@pnk.ac.id[1*], janri.manafe@pnk.ac.id[2], krysler.adoe@pnk.ac.id[3],
m.l.junior1722@gmail.com[4]

**Coresponding Author*

ABSTRACT
This study aims to analyze the effect of digital competence on the digitalization of public services by considering the mediating roles of digital self-efficacy and innovative work behavior. The digitalization of public services requires the readiness of human resources, particularly civil servants (ASN), to master digital skills and to possess confidence and the ability to innovate in facing technological transformation. This research employs a quantitative approach using a survey method targeting civil servants in Kupang City who are involved in public service delivery. Data was analyzed using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS). The results indicate that digital competence not only has a direct impact on the digitalization of public services but also indirectly through the enhancement of digital self-efficacy and innovative work behavior. The findings provide both theoretical and practical contributions to strategies for strengthening civil servants' capacity in supporting more effective and sustainable digital-based bureaucratic reforms.
Keywords: *Digital Competence, Self-Efficacy, Innovative Work Behavior, Digital Public Services, Civil Servants*

ABSTRAK
Penelitian ini bertujuan untuk menganalisis pengaruh kompetensi digital terhadap digitalisasi pelayanan publik dengan mempertimbangkan peran mediasi self-efficacy digital dan inovasi kerja. Digitalisasi pelayanan publik menuntut kesiapan sumber daya manusia, khususnya aparatur sipil negara (ASN), untuk menguasai keterampilan digital serta memiliki kepercayaan diri dan kemampuan berinovasi dalam menghadapi transformasi teknologi. Penelitian ini menggunakan pendekatan kuantitatif dengan metode survei terhadap ASN di Kota Kupang yang terlibat dalam pelayanan publik. Data dianalisis menggunakan Structural Equation Modeling (SEM) berbasis Partial Least Squares (PLS). Hasil penelitian menunjukkan bahwa kompetensi digital tidak hanya berpengaruh langsung terhadap digitalisasi pelayanan publik, tetapi juga secara tidak langsung melalui peningkatan self-efficacy digital dan inovasi kerja. Temuan penelitian ini memberikan kontribusi teoritis dan praktis bagi pengembangan strategi peningkatan kapasitas ASN guna mendukung reformasi birokrasi berbasis digital yang lebih efektif dan berkelanjutan.
Kata Kunci: Kompetensi Digital, Self-Efficacy, Inovasi Kerja, Pelayanan Publik Digital, ASN

1. Pendahuluan

Digital transformation has become one of the strategic agendas in bureaucratic reform and improving the quality of public services in Indonesia. Along with the rapid development of information and communication technology (ICT), governments at various levels are required to provide public services that are more responsive, efficient, and transparent through the use of digital technology. One of the main milestones of this effort is the implementation of the Electronic-Based Government System (SPBE) which was launched through Presidential Regulation Number 95 of 2018. SPBE aims to create integrated and information technology-based governance, which will ultimately improve bureaucratic efficiency and provide better

services to the community (PANRB, 2020). In today's digital era, people's expectations for public services have increased significantly, where access to services quickly, easily, and without time or place restrictions is an urgent need. Thus, the digitization of public services is no longer an option, but a necessity that determines the legitimacy and effectiveness of government.

Digitization of public services is not only related to the installation of technological infrastructure such as internet networks, computers, or information systems, but also concerns the readiness of human resources in adopting and managing these systems. In this context, the State Civil Apparatus (ASN) plays a very central role as the spearhead in the implementation of public services. The digital competence of civil servants is one of the crucial factors in determining the success of service digitization. Digital competence not only includes technical abilities in operating software and hardware, but also includes a strategic understanding of how technology can be used to improve work processes and service quality. According to (Van Laar et al., 2017), digital competence includes dimensions such as information literacy, digital communication, technology-based problem-solving, and critical thinking in a digital context. Civil servants with high digital competence tend to be more adaptive to technological changes, able to explore the features of the digital system effectively, and do not experience significant obstacles in carrying out digital-based tasks.

However, the possession of good digital competencies does not necessarily automatically result in optimal use of digital technology in public services. Internal psychological factors, such as digital self-efficacy, also play an important role in driving technology adoption behavior. Digital self-efficacy refers to a person's belief in his or her ability to use digital technology effectively to complete certain tasks (Bandura, 1997; Compeau & Higgins, 1995). Individuals with a high level of digital self-efficacy will feel more confident and have a strong intrinsic motivation to try and master new technologies. On the other hand, civil servants who have low self-efficacy, even though they have technical training, may experience technological anxiety (technostress), feel afraid of making mistakes, or even avoid using digital systems altogether (Al-Haderi, 2013). Therefore, increasing digital competence should be accompanied by a strategy to strengthen self-efficacy so that civil servants are not only technically capable, but also mentally and emotionally ready to face digital transformation in their work environment.

In addition to psychological factors, innovative behavioral factors are also important elements in supporting the success of digitizing public services. Work innovation refers to the efforts of individuals in creating or implementing new ideas, more efficient work methods, or creative solutions in solving service problems (Scott & Bruce, 1994). Innovative civil servants tend to be more proactive in finding new ways to utilize technology, rearranging work procedures that were previously manual to digital, and able to adapt to changes in policies and public demands. Work innovation not only increases work efficiency and effectiveness, but also provides added value in the form of improving service quality and community satisfaction. In the context of digitalization, civil servants who have innovative behavior can become change agents that encourage digital transformation to run faster and more sustainably. Therefore, work innovation acts as an important bridge that connects the digital capabilities of individuals and the real implementation of digitalization in the field.

This study aims to empirically analyze how the digital competence of civil servants contributes to the success of digitization of public services, by considering two important mediating variables, namely digital self-efficacy and work innovation. This research is focused on ASN in Kupang City, East Nusa Tenggara, which is one of the developing cities in Indonesia with interesting bureaucratic dynamics. Kupang City is trying to improve the quality of its services through the implementation of various digital applications, both in the fields of population, licensing, and personnel management. However, the digitalization process in

Indonesia is also faced with various challenges such as limited infrastructure, uneven competence of civil servants, and resistance to change (Adila & Putri, 2024). By exploring the relationship between digital competence, digital self-efficacy, work innovation, and digitization of public services, this study is expected to make a theoretical contribution to the public management literature and a practical contribution to local governments in formulating strategies for increasing the capacity of civil servants in the digital era.

2. Tinjauan Pustaka

The impact of digital competence on the digitalization of public services

Digital competence is a fundamental factor in supporting the success of digitizing public services. These competencies include a set of skills and knowledge that enable individuals to use information and communication technologies effectively in a professional context (Van Laar et al., 2017). In the public sector, digital competence in state civil servants (ASN) is needed so that the service process can run digitally, efficiently, and in accordance with applied technology standards. Without this competence, the available technological tools have the potential to not be utilized optimally, and can even cause resistance among civil servants to the new system. Therefore, digital competency improvement is not just technical training, but an integral part of the digital bureaucratic reform strategy that demands changes in work behavior.

Previous research has shown that digital competencies have a direct influence on the effectiveness and success of digital transformation in the government sector. For example, a study by Cahyarini (2021) shows that the digital competence of civil servants contributes significantly to the adoption rate of online-based public service applications. Civil servants with good digital literacy tend to adapt to new systems faster, are more efficient in carrying out administrative tasks online, and are able to provide services to the community in a responsive manner. A similar thing was found by Rumata and Nugraha (2020), who emphasized that ASN's understanding of information technology has an impact on the quality of digital interaction with the community. In addition, the results of research by Astuti et al. (2024) emphasize that mastery of digital technology is the key to overcoming internal bureaucratic obstacles such as slow administrative processes and service delays. Thus, digital competence is not only a technical requirement, but also a strategic prerequisite for a successful implementation of digitalization.

In the context of local government digital policies, the digital competence of civil servants is often a weak point that hinders the realization of the goal of digitizing services. Many regions experience constraints not due to a lack of infrastructure, but due to the low capacity of individuals to operate the available digital systems (Astuti et al., 2024). This emphasizes the importance of a human resource-based approach in the digitalization of public services. Local governments need to pay attention to aspects of developing ASN's digital competencies in a sustainable manner, including through needs-based training, digital certification, and incentives for technological innovation. Without adequate digital capacity among civil servants, digitalization efforts will only produce a system that runs partially and unsustainably. Therefore, we hypothesize:

Hypothesis 1 : Digital competence has a positive effect on the digitalization of public services.

The mediating role of digital self-efficacy

Digital self-efficacy is one of the psychological factors that plays an important role in bridging the relationship between digital competence and digitalization behavior in public services. The concept of self-efficacy comes from Bandura's (1997) social-cognitive theory, which defines it as an individual's belief in his or her ability to perform an action necessary to

achieve a certain outcome. In the context of digitalization, digital self-efficacy refers to the extent to which individuals feel confident that they can use information technology effectively in completing work tasks (Compeau & Higgins, 1995). An ASN who has adequate digital competence, but does not have confidence in applying these skills, is likely not to show proactive behavior in the digital-based public service process. Therefore, digital self-efficacy is a crucial component in activating competencies into real actions.

Several empirical studies have shown that digital self-efficacy plays a significant mediating variable in encouraging the digital behavior of civil servants. For example, a study by Darmayanti and Isnurhadi (2023) found that the digital competence of civil servants increased their digital self-efficacy, which ultimately contributed positively to the adoption and use of online service systems. Another study by Arfat et al. (2018) also confirmed that digital self-efficacy affects the effectiveness of the implementation of e-government. When civil servants feel confident in their ability to use technology, they tend to be more enthusiastic in exploring digital service features, and more consistent in using the system in a sustainable manner. This shows that confidence in technology mastery has a strong motivational influence in strengthening the impact of competence on service digitalization.

The role of digital self-efficacy mediation is also important in explaining the variation in the behavior of civil servants who have the same level of digital competence. Not all civil servants with high digital skills show innovative or adaptive behavior to digitalization. In some cases, feelings of fear of failure, technological anxiety, or perceived risk become inhibiting even though technical knowledge is adequate (Eastin & LaRose, 2000). Thus, the existence of digital self-efficacy as a mediator helps explain why competence does not always have a direct impact on the use of technology in services. Therefore, organizational interventions such as coaching, mentoring, and providing small successful experiences in the use of technology can strengthen digital self-efficacy, which in turn will optimize the impact of improving digital competencies on the digitalization performance of public services.

Hypothesis 2 : Digital self-efficacy mediates the influence of digital competence on the digitalization of public services.

The mediating role of work innovation

The ability to innovate work is an important element in bridging digital competence with the success of digitizing public services. Digital competence allows civil servants to master various devices, applications, and information technology systems that support the implementation of tasks. However, such mastery does not automatically result in optimal use of technology in the context of public service if it is not accompanied by a tendency to innovate at work (West & Bogers, 2014). Work innovation encompasses the ability and willingness of individuals to try new approaches, modify ways of working, and create digital solutions that are relevant to society's needs. In this case, digital competence is the technical basis, while work innovation is a psychological and behavioral bridge to realize the digitalization of services in real terms. Research by Janssen (2000) also confirms that individuals with strong knowledge and skills will be more motivated to come up with new ideas that impact work performance, including in the implementation of digital systems in the public sector.

Several studies support that work innovation plays a mediating role between individual capabilities and digital-based organizational outputs. According to research by Casalino et al. (2020), employees who have high digital competence tend to be more confident in creating and implementing technology-based service innovations. This is in line with the findings of Utami (2023) who show that work innovation strengthens the relationship between employees' digital skills and the effectiveness of electronic-based public service systems. Innovative employees will be more active in exploring technological features, dare to take the

initiative for change, and not just wait for instructions from their superiors. Thus, work innovation serves as an important mechanism that transforms the potential of digital competencies into a form of concrete contribution in the process of digitizing public services.

By considering these relationships, work innovation can be positioned as a mediator in the relationship model between digital competence and the digitalization of public services. This role is important because not all civil servants with high digital skills automatically show a positive contribution to the digitalization program, unless they also have the drive to make changes and innovate. Therefore, it is important for public organizations to not only improve the digital skills of civil servants, but also create a work climate that supports innovation and experimentation. Based on this explanation, the following hypothesis is formulated:

Hypothesis 3 : Work innovation mediates the influence of digital competencies on the digitalization of public services.

3. Metode Penelitian

Research Design

This study adopts a quantitative, explanatory research design aimed at examining the causal relationship between digital competence and the digitalization of public services, while testing the mediating roles of digital self-efficacy and innovative work behavior. Data analysis was conducted using Partial Least Squares-Structural Equation Modeling (PLS-SEM) with SmartPLS version 4.

Population and Sample

The target population consists of civil servants (ASN) working in government institutions within Kupang City who are directly involved in public service delivery. A purposive sampling technique was applied using the following inclusion criteria: (1) active civil servants assigned to public service functions, (2) prior experience of at least one year using digital service systems or participation in digital training, and (3) willingness to voluntarily participate in the study. Following Hair et al. (2014), the minimum sample size was determined as ten times the maximum number of indicators in a construct. With an estimated 15 indicators, the required minimum sample size was 150 respondents.

Variables and Measurement

The study employed four main constructs:

1. Digital Competence (X): the ability to understand, use, and leverage digital technology in daily work tasks (Van Laar et al., 2017).
2. Digital Self-Efficacy (M1): individual confidence in completing work tasks using digital technologies (Bandura, 1997; Compeau & Higgins, 1995).
3. Innovative Work Behavior (M2): the tendency of civil servants to generate, promote, and implement novel ideas in order to improve work processes and service quality (Janssen, 2000).
4. Digitalization of Public Services (Y): the extent to which digital technologies are utilized to support, enhance, and accelerate service delivery to citizens (Gil-García, 2007).

All constructs were measured using previously validated scales, adapted to the local context. Each item was assessed on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

Data were gathered through a structured questionnaire distributed both physically and electronically to civil servants across multiple government offices in Kupang City. Prior to the main survey, a pilot test was conducted with 30 respondents to ensure clarity, reliability, and cultural appropriateness of the items.

The analysis followed the two-step approach recommended in PLS-SEM. First, Measurement Model (Outer Model): assessed through convergent validity (factor loadings, AVE), discriminant validity (Fornell-Larcker and HTMT), and reliability (Cronbach's Alpha, Composite Reliability). Second, Structural Model (Inner Model): tested using bootstrapping with 5,000 resamples to evaluate path coefficients, t-statistics, p-values, and the significance of indirect effects. R^2 and predictive relevance (Q^2) were also examined to assess explanatory power and model fit.

4. Hasil Dan Pembahasan

Respondent Profile

The final dataset consisted of 150 valid responses from civil servants (ASN) across multiple agencies in Kupang City. The demographic profile illustrates the diversity of participants in terms of gender, age, education, and work experience. Most respondents were male (60%), while female respondents accounted for 40%. The largest proportion of respondents fell within the 31–40 years age group (45%), followed by those aged 41–50 years (35%), suggesting that the sample was dominated by mid-career professionals.

In terms of education, 70% held bachelor's degrees, with the remaining respondents distributed between diploma and master's degrees. More than half of the respondents (55%) had more than ten years of work experience, reflecting a relatively mature and established workforce. Importantly, the majority of respondents had been exposed to digital service applications for at least two years, meaning they were not only aware of but also actively engaged in the digitalization initiatives of their respective agencies. These characteristics indicate that the sample represents a group of civil servants with substantial experience, yet still navigating the ongoing digital transformation in public service delivery.

Measurement Model Evaluation

Before testing the hypothesized structural relationships, the measurement model was assessed for validity and reliability. The convergent validity test showed that all indicator loadings exceeded the recommended threshold of 0.70, with Average Variance Extracted (AVE) values ranging from 0.56 to 0.68. This demonstrates that the indicators adequately captured their intended constructs.

Reliability was confirmed with Cronbach's Alpha and Composite Reliability scores all above the 0.70 cut-off: digital competence (0.89), digital self-efficacy (0.86), innovative work behavior (0.88), and public service digitalization (0.91). These results indicate high internal consistency across all constructs.

The discriminant validity assessment, using the Fornell-Larcker criterion, further confirmed that the square root of each construct's AVE was higher than its correlations with other constructs. This finding suggests that each construct was conceptually distinct and that multicollinearity was not a concern. Together, these results demonstrate that the measurement model exhibited satisfactory psychometric properties, allowing for the structural model to be meaningfully interpreted.

Structural Model Evaluation

The structural model was tested using the bootstrapping procedure with 5,000 resamples to evaluate the significance of path coefficients. The results revealed that the model had strong explanatory power. The R^2 value for digitalization of public services was 0.62, indicating that 62% of the variance in digitalization could be explained by digital competence, digital self-efficacy, and innovative work behavior. This level of explained variance is considered substantial in social science research and demonstrates the robustness of the proposed framework.

In addition, the predictive relevance of the model (Q^2) was above zero, confirming that the structural model had predictive validity and was capable of explaining outcomes beyond the observed dataset.

Table 1. Hypothesis Testing Results

Path Relationship	Path Coefficient	t-value	p-value	Result
Digital Competence → Public Service Digitalization	0.372	5.210	0.000	Supported
Digital Competence → Digital Self-Efficacy	0.455	7.120	0.000	Supported
Digital Self-Efficacy → Public Service Digitalization	0.298	4.360	0.000	Supported
Digital Competence → Innovative Work Behavior	0.410	6.280	0.000	Supported
Innovative Work Behavior → Public Service Digitalization	0.334	4.980	0.000	Supported
Digital Competence → Public Service Digitalization (via Digital Self-Efficacy)	0.136 (indirect)	3.220	0.001	Supported
Digital Competence → Public Service Digitalization (via Innovative Work Behavior)	0.137 (indirect)	3.560	0.000	Supported

Hypothesis Testing and Mediation Analysis

The results supported all proposed hypotheses. First, digital competence had a direct positive effect on public service digitalization ($\beta = 0.372$, $p < 0.001$), confirming that higher levels of digital competence among civil servants enhance the quality and efficiency of digital service delivery.

Second, digital self-efficacy mediated the relationship between digital competence and public service digitalization ($\beta = 0.136$, $p = 0.001$). This indicates that competence alone is insufficient unless accompanied by confidence in applying digital skills. Civil servants who not only possess technical capabilities but also believe in their ability to use them effectively are more consistent in adopting digital systems.

Third, innovative work behavior also served as a significant mediator ($\beta = 0.137$, $p < 0.001$). Civil servants with strong digital competence who also exhibit innovative behaviors are more likely to transform their skills into creative applications that improve public services. Innovation acts as the behavioral bridge that converts competence into practical and impactful outcomes.

Interpretation of Findings

Taken together, the findings emphasize the multi-layered nature of digital transformation in the public sector. While digital competence serves as the foundation, its effectiveness is significantly enhanced by psychological confidence (digital self-efficacy) and proactive behaviors (innovation). The model demonstrates that civil servants must not only be trained in digital skills but also supported in building confidence and encouraged to engage in innovative practices.

In other words, competence provides the “ability,” self-efficacy provides the “confidence,” and innovation provides the “action.” Only when these three elements align can digitalization of public services be fully realized.

5. Penutup

Kesimpulan

This study demonstrates that digital competence significantly enhances the digitalization of public services, both directly and indirectly through digital self-efficacy and innovative work behavior. Civil servants who possess strong digital skills are more capable of adopting and optimizing e-government systems; however, their effectiveness is amplified when they also have confidence in their digital abilities and display innovative behaviors. These findings highlight that technical capacity, psychological readiness, and creativity must work in tandem to ensure the success of digital transformation in the public sector.

The results contribute to theory by extending research on digital competence, self-efficacy, and innovation into the context of public service delivery, while also offering practical insights for policymakers. Efforts to digitalize public services should not only provide infrastructure and technical training but also foster confidence-building and encourage innovation among civil servants. By adopting a holistic approach that integrates competence, self-belief, and innovative practices, governments can accelerate digital transformation and deliver more efficient, responsive, and sustainable public services.

Aknowledgement

The authors gratefully acknowledge Politeknik Negeri Kupang for the financial support provided through its research grant, which made this study possible.

References

Adila, N., & Putri, L. D. M. (2024). Digitalisasi Tata Kelola SDM Aparatur di Indonesia. *Jurnal ISO: Jurnal Ilmu Sosial, Politik dan Humaniora*, *4*(2).

Al-Haderi, S. M. S. (2013). The effect of self-efficacy in the acceptance of information technology in the public sector. *International Journal of Business and Social Science*, *4*(9).

Arfat, Y., Rahman, C. A., Rahman, M., & Mahmood, K. (2018). Perceived usefulness of E-government and Computer self-efficacy to improve continuous intention to use E-Government Services. *Pakistan Business Review*, *20*(1), 174-183.

Astuti, I., Yusuf, R., Nohong, M., Umar, F., & Sabbar, S. (2024). Analysis of e-government implementation and factors affecting employee performance: Case study in Tangerang city government. *J. Infrastructure, Policy Dev*, *8*(10), 1-32.

Ayyash, M. M., Herzallah, F. A., & Al-Sharafi, M. A. (2022). Arab cultural dimensions model for e-government services adoption in public sector organisations: An empirical examination. *Electronic Government, an International Journal*, *18*(1), 9-44.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. Macmillan.

Cahyarini, F. D. (2021). Implementasi digital leadership dalam pengembangan kompetensi digital pada pelayanan publik. *Jurnal Studi Komunikasi Dan Media*, *25*(1), 47-60.

Casalino, N., Saso, T., Borin, B., Massella, E., & Lancioni, F. (2020). Digital competences for civil servants and digital ecosystems for more effective working processes in public organizations. Digital Business Transformation: Organizing, Managing and Controlling in the Information Age,

Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS quarterly*, 189-211.

Darmayanti, B. P., & Isnurhadi, Y. (2023). Effect of public service motivation, self-efficacy, and competency on the performance of civil apparatuses. *Journal of Hunan University Natural Sciences*, *50*(8).

Eastin, M. S., & LaRose, R. (2000). Internet self-efficacy and the psychology of the digital divide. *Journal of computer-mediated communication*, *6*(1), JCMC611.

Gil-García, J. R. (2007). Exploring e-government benefits and success factors. In *Encyclopedia of digital government* (pp. 803-811). IGI Global.

Janssen, O. (2000). Job demands, perceptions of effort-reward fairness and innovative work behaviour. *Journal of Occupational and organizational psychology*, *73*(3), 287-302.

Peraturan Presiden Nomor 95 Tahun 2018 tentang Sistem Pemerintahan Berbasis Elektronik (SPBE), (2020).

Rumata, V. M., & Nugraha, D. A. (2020). Rendahnya tingkat perilaku digital ASN kementerian kominfo: Survei literasi digital pada instansi pemerintah. *Jurnal Studi Komunikasi*, *4*(2), 467-484.

Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of management journal*, *37*(3), 580-607.

Utami, P. (2023). Transformasi Administrasi Publik: Inovasi Dan Adaptasi Menuju Efisiensi Dan Pelayanan Publik Berkualitas. *Papatung: Jurnal Ilmu Administrasi Publik, Pemerintahan dan Politik*, *6*(2), 1-9.

Van Laar, E., Van Deursen, A. J., Van Dijk, J. A., & De Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. *Computers in human behavior*, *72*, 577-588.

West, J., & Bogers, M. (2014). Leveraging external sources of innovation: A review of research on open innovation. *Journal of product innovation management*, *31*(4), 814-831.