

## Ethics-Driven Digital Learning Governance in the Civil Service

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### Abstrak

Penelitian ini mengkaji pengaruh etika birokrasi ASN yang meliputi integritas, akuntabilitas, dan transparansi terhadap efektivitas digital learning governance dalam konteks transformasi digital sektor publik. Studi ini juga mengeksplorasi peran kapasitas digital ASN, kebijakan internal, dan infrastruktur teknologi informasi dan komunikasi (TIK) sebagai variabel moderasi dalam hubungan tersebut. Metodologi penelitian menggunakan pendekatan kualitatif dengan pengumpulan data melalui survei kepada ASN yang terlibat dalam program pembelajaran digital. Hasil analisis statistik menunjukkan bahwa etika birokrasi ASN memiliki pengaruh signifikan positif terhadap efektivitas tata kelola pembelajaran digital. Lebih lanjut, kapasitas digital ASN dan infrastruktur TIK memperkuat hubungan tersebut secara signifikan, sedangkan kebijakan internal memperlihatkan pengaruh moderasi yang lebih terbatas. Temuan ini menegaskan bahwa penerapan nilai-nilai etika birokrasi yang kokoh, didukung oleh sumber daya digital dan kebijakan yang memadai, menjadi kunci keberhasilan implementasi digital learning governance yang efektif. Implikasi praktis dari penelitian ini adalah pentingnya penguatan integritas, akuntabilitas, dan transparansi ASN serta peningkatan kapasitas digital untuk mendukung pembangunan SDM yang adaptif di era digital.

### Abstract

This study investigated the impact of civil servants' bureaucratic ethics, encompassing integrity, accountability, and transparency, on the effectiveness of digital learning governance within the context of digital transformation in the public sector. This study also explored the role of civil servants' digital capacity, internal policies, and information and communication technology (ICT) infrastructure as moderation variables in these relationships. The research methodology applied a qualitative approach; data were collected through surveys from civil servants involved in digital learning programs. The results of statistical analysis demonstrated that civil servants' bureaucratic ethics have a significant positive influence on the effectiveness of digital learning governance. Furthermore, the digital capacity of civil servants and ICT infrastructure significantly strengthens the relationship, while internal policies show a more limited influence of moderation. These findings confirm that the application of solid bureaucratic ethical values, supported by adequate digital resources and policies, is the key to the successful implementation of effective digital learning governance. The practical implications of this study are essential for strengthening the integrity, accountability, and transparency of civil servants as well as increasing digital capacity to support the development of adaptive human resources in the digital era.

## INTRODUCTION

Digital transformation in the public sector has reshaped bureaucratic functions by replacing paper-based routines with digital systems, shifting decision-making processes toward data-driven models, streamlining service delivery through online platforms, and opening new avenues for citizen participation and accountability (Fahlevvi *et al.*, 2025). The role of government is evolving from conventional service provision toward information technology-based governance, which does not replace traditional functions but complements them with digital systems that are faster, more adaptive, transparent, and responsive to social and

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technological change (Rivai, 2025). One aspect directly affected is the learning governance system for state civil servants (ASN) in Indonesia, which is shifting toward digital learning governance, understood as the systematic use of technology to plan, implement, and evaluate capacity-building programs through integrated online platforms (Mozin *et al.*, 2025).

This initiative aligns with the requirement to enhance the capacity of civil servants through continuous learning that is flexible, efficient, and adaptable to change (Oktareza *et al.*, 2024). a goal that is central to broader public sector reform aimed at improving bureaucratic performance, service quality, and institutional responsiveness. One clear manifestation of this shift is the adoption of digital learning governance, a system that leverages digital technology to strengthen civil servants' skills in a sustainable and flexible manner.

Amid this dynamic, bureaucratic ethics is a central issue that determines the quality of implementation (Yulianto, 2023). ASN is not only required to have technical competence but also to uphold the values of integrity, accountability, and transparency in carrying out digital-based tasks, while at the same time embodying ethical principles such as fairness, responsibility, inclusiveness, and respect for privacy that underpin the digital governance framework (Rofik Fauzan, 2024). The development of digital technology has driven significant transformations in various government sectors, including bureaucratic practices and ASN learning governance. This transformation is achieved through digital learning governance, which enables the apparatus to flexibly and adaptively strengthen its competence in response to the dynamics of the times (Adila & Mahendra Putri, 2024).

To accommodate the demand for adaptable learning using data and technology, and to enhance the quality of ASN towards a Smart ASN model focused on performance-based public services (Oktareza *et al.*, 2024). Bureaucratic ethics functions as a strategic determinant in the effective implementation of digital learning governance, where integrity, accountability, and transparency are positioned not merely as normative ideals but as operational prerequisites that complement the technical competence of ASN in realizing professional and citizen-oriented governance (Noor Jihan *et al.*, 2023).

The digitalization of the ASN learning system is inseparably linked to the concept of modern governance, which emphasizes the principles of transparency, participation, and system efficiency. This model positions ASN as a strategic agent in the bureaucratic transformation driven by data and technology (Mergel *et al.*, 2019). However, the effectiveness of digital learning governance is significantly influenced by the quality of the bureaucracy, particularly in terms of ethical values such as integrity, accountability, and transparency. Ethical civil servants are crucial to the success of providing professional and public service-oriented digital learning governance (Yulianto, 2023).

In practice, the difficulties of putting digital learning rules into action go beyond just technical and legal issues; they also involve the limited digital skills of government workers, poor internal policies, and insufficient ICT infrastructure (Lapasa *et al.*, 2025). This shows that we need a combined approach, where improving the ethics of ASN bureaucracy is not just a guideline but also a key tool for successfully digitalizing the learning system. This emphasizes the need to take an integrative approach, where strengthening the ethics of ASN bureaucracy is not only a normative aspect but also a strategic instrument in supporting the success of digitalizing the learning system (Sulaiman *et al.*, 2025).

Systems and technology cannot determine the effectiveness of digital learning governance. The three main elements that are the variables of moderation, namely the digital capacity of civil servants, the quality of internal policies, and the readiness of ICT infrastructure, have been

proven to be influential in strengthening or weakening the relationship between bureaucratic ethics and the effectiveness of digital governance (Pakhnenko & Kuan, 2023). If these three elements are not conforming, even civil servants with high integrity will be unable to optimize their role in the digital learning system.

In the context of Wajo Regency as a research locus, the implementation of digital learning governance still faces various challenges, ranging from digital capacity gaps and weak adaptive internal regulations to limited information technology infrastructure (Mozin et al., 2025). This makes the effectiveness of digital governance not solely determined by the technical system in place, but critically by the ethical quality of the civil servants who operate it, which stands as a crucial determinant of its overall success (Syakoer, 2023). Implementing digital learning governance is not a simple task. Many civil servants in the regions, including Wajo Regency, still lack readiness to meet the demands of digitizing public services. The digital divide—covering competencies, policies, and infrastructure—remains the main barrier. Competency gaps include limited digital literacy, weak use of online learning platforms, and insufficient data-driven skills, while policy gaps stem from unclear regulations, lack of integration into HR development, and uneven institutional support. Consequently, civil servants have not fully utilized digital devices for systematic learning and skill development (Wardiyanto et al., 2025).

Therefore, attention to digital institutional readiness is crucial in digitally based bureaucratic reform. In this context, institutional readiness refers to the extent to which government institutions possess the necessary policies, infrastructure, human resource competencies, and organizational culture to support and sustain the digitization of learning governance. Readiness can be observed through clear regulatory frameworks, adequate technological infrastructure, digital skills among civil servants, and leadership commitment to fostering innovation.

This research is essential for exploring the extent to which ASN bureaucratic ethics affect the effectiveness of digital learning governance, considering three key factors that moderate the relationship: the digital capacity of ASN, internal policies, and the readiness of ICT infrastructure (Oktareza et al., 2024). ASN is required not only to be proficient in mastering technology but also to carry out public service functions efficiently, openly, and accountably. For this reason, the development of ASN is focused on the Smart ASN model, which emphasizes digital literacy, adaptive capacity, integrity, and performance orientation. Operationalising this model requires structured competency development through continuous digital training, integration of performance-based evaluation systems, and the use of technology platforms to ensure transparency, collaboration, and citizen-centered service delivery (Johannes, 2024).

To comprehensively examine how the ethical values of civil servants contribute to the effectiveness of digital learning governance, as well as how digital capacity, internal policies, and ICT infrastructure moderate these relationships. Based on the phenomenon of the failure of some digital learning initiatives caused by weak organizational ethics and technological capacity, as well as the absence of an accountable monitoring mechanism and lack of transparency in the digitalization process (Hyry, 2023). Furthermore, this study examined (1) how the ethics of civil servant bureaucracy affected the effectiveness of digital learning governance. In addition, (2) what is the role of ASN digital capacity, internal policies, and ICT infrastructure in moderating these relationships? With this approach, it is expected that policy recommendations will emerge to guide the holistic development of ASN human resources—encompassing technology, ethics, and performance—specifically targeted at the Wajo District Government to strengthen local human resource development policies, improve ICT infrastructure, and enhance digital learning governance practices (Eke & Stahl, 2024).

The purpose of this study is to analyze the relationship between ASN bureaucratic ethics, which cover integrity, accountability, and transparency, and the effectiveness of digital learning governance (Sri Yulianty Mozin et al., 2025). In addition, this study also aims to examine the role of moderation of ASN's digital capacity, internal policies, and ICT infrastructure in strengthening or weakening these relationships (Afandi et al., 2023). This research contributes theoretically by linking bureaucratic ethics, digital capacity, and institutional readiness to the effectiveness of digital learning governance, while offering practical insights for the Wajo District Government in strengthening civil servant competencies, embedding ethical values, and improving digital infrastructure (Fahlevvi et al., 2025).

### Literature Review

The transformation of the State Civil Apparatus (ASN) towards international standards is a requirement in the era of globalization and digitalization. ASN is required to have technical competence, professionalism, ethics, and adaptability, emphasizing the importance of integrative strategies such as information technology optimization, continuous training, and the implementation of service standards based on efficiency and accountability (Yulianto, 2023). Reform of the ASN education system is needed to address gaps such as outdated curricula, limited digital integration, and weak foreign language preparation. While digital literacy is vital for service digitization, foreign language skills are equally important for international collaboration and access to global best practices, requiring joint efforts from government, academia, and the private sector (Rofik Fauzan, 2024).

E-government rests on transparency, information disclosure, and legal accountability, yet ethical breaches by ASN continue to erode public trust and weaken the legitimacy of digital governance. To address this, the enforcement of regulations such as Government Regulation No. 42 of 2004 on bureaucratic ethics must be reinforced and adapted to the context of digitalization. Strengthening the application of good governance principles—transparency, accountability, public participation, and the rule of law—is not only essential to prevent bureaucratic pathologies but also to ensure that digital transformation delivers tangible benefits to citizens. In this regard, the transformation of ASN requires a holistic approach: at the individual level, enhancing digital competence and ethical awareness; at the institutional level, embedding integrity and accountability into organizational culture; and at the policy level, aligning national strategies with ethical standards and long-term governance reforms (Mozin et al., 2025).

Digitization of civil servants is a prerequisite for bureaucratic modernization, showing that technology training and application-based performance monitoring systems can improve the professionalism of civil servants (Adila & Mahendra Putri, 2024). Although challenges such as work culture resistance and infrastructure limitations still exist. (Johannes, 2024), Highlighting the “Smart ASN” initiative, which faces a generational gap in technology mastery, underscores the need for collaborative mentoring and support. (Pakhnenko & Kuan, 2023), emphasizing the need for an inclusive approach in digitalization to prevent marginalizing groups without digital access by prioritizing digital strategies by default.

Ethics and morality serve as the foundation of ASN's digital transformation but operate on different levels. Ethics, reflected in bureaucratic norms and leadership practices, provides a formal framework for accountability, transparency, and the reduction of corruption (Rahmadany, 2024). on the other hand, relates to the personal values and integrity of individual civil servants, shaping public perceptions of trust and legitimacy. However, despite this ethical–moral foundation, low levels of digital literacy among ASN

continue to hinder the operationalization of these principles within digital governance, thereby necessitating structural reforms (Fahlevi et al., 2025). From the perspective of ethics and morality, prior studies underscore their role as the normative basis for bureaucratic digital transformation. Yet, persistent barriers—such as low digital literacy, weak institutional capacity, and limited integration of ethical principles into digital systems—highlight that the operationalization of this foundation remains fragmented and requires deeper investigation.

Digital transformation for civil servants requires not only the adoption of technology, but also comprehensive reforms in work culture, bureaucratic structures, and strengthening human resource capacity, as well as improving the technical and behavioural competencies of civil servants. These are key elements in supporting competitiveness. Additionally, meritocracy can enhance the professionalism and accountability of civil servants, ultimately building public trust in public services. The factors influencing the success of implementing digital transformation policies in public services heavily depend on clear policies, digital literacy, and other key factors such as the availability of appropriate infrastructure, motivation and training for government officials, and active public participation in the digitalisation process of services (Marthalina et al., 2025). In a global context, the importance of ethics in digital innovation lies in safeguarding moral values and transparency amid the challenges of the digital revolution. For ASN, this means that digital capacity alone is insufficient without a strong ethical foundation to guide decision-making, service delivery, and accountability. This study highlights how the integration of ethics and digital competence becomes a decisive factor in ensuring that bureaucratic transformation is not only technologically advanced but also legitimate, trusted, and sustainable. In a global context, the importance of ethics in digital innovation lies in maintaining moral values and transparency, especially in the face of increasingly complex challenges posed by the digital revolution (Syakoer, 2023).

The literature indicates that transforming civil servants towards international standards necessitates a systemic approach that integrates technology, ethics, and competence. However, there are research gaps, such as the long-term impact of digital transformation on public trust, the effectiveness of digitizing local leadership protocols, and the ethical relationship of digital bureaucracy with community satisfaction. Cross-sectoral strategies, including training, structural reform, and the strengthening of integrity values, are necessary to create an inclusive, responsive, and internationally recognized bureaucracy. This research is needed to gather community feedback and ensure the sustainability of digital public innovation.

## **RESEARCH METHODS**

This study employed a qualitative approach with a case study design to explore the influence of bureaucratic ethics within the State Civil Apparatus (ASN) on the effectiveness of digital learning governance in Wajo Regency. The qualitative approach was chosen because it allows for an in-depth understanding of complex social and cultural dynamics, particularly how ethical principles within the bureaucracy shape the effectiveness of digital learning systems, an issue that cannot be adequately captured through quantitative measures (Chu, PH. and Chang, 2017). The case study design, focusing on the implementation of digital learning governance in Wajo Regency, further enabled the researchers to investigate how variations in ASN digital capacity, internal policies, and ICT infrastructure may moderate these relationships in practice (Khan et al., 2021). Integrating the research focus into the methodological framework strengthens the analytical coherence of the study, ensuring that the design is systematically aligned with its objectives and

capable of capturing the ethical, institutional, and technological dimensions of digital learning governance (Lim, 2025).

The population in this study consisted of all civil servants involved in the implementation of the digitisation program in all local government agencies in Wajo Regency, which included 39 organisational units, consisting of 25 regional apparatus unit organisations and 14 sub-districts.. Sampling was conducted using the purposive sampling method, grounded in the assumption that selecting informants with specific characteristics such as direct involvement in digital learning and service delivery would generate more relevant and context-rich data (Campbell et al., 2020). The criteria for selecting respondents include civil servants with a minimum of one year of service who are directly involved in the digitalization program, allowing them to provide in-depth insight into ethical practices in the digital context. Purposive sampling allows researchers to select key informants who have knowledge and experience relevant to the research topic (Mantiri et al., 2024).

Data was collected through 20 in-depth interviews and 3 focus group discussions (FGDs) with ASNs who met the purposive sampling criteria. Each interview lasted between 45–60 minutes, while each of the 3 FGDs ran for 90–120 minutes, allowing both individual experiences and collective perspectives to be examined in depth. All interviews and FGDs followed a structured protocol and interview guide with open-ended questions on bureaucratic ethics, institutional readiness, and the challenges of digital learning governance (Agustini dkk., 2023). The data analysis technique employed is thematic analysis, which purposes to identify patterns, themes, and meanings from the results of in-depth interviews and focused group discussions (FGDs). The process involves transcription, data encoding, identification of key themes, and interpretation based on theories of good governance and digital learning governance. (Hadi, 2020). The researcher used JASP to descriptively organize qualitative data, such as theme frequencies and informant perceptions, and to present them in clear tables and graphs. JASP is not applied for inferential statistics but for systematic data exploration. JASP offering advantages in transparency, replicability, and accessibility through its user-friendly and open-access features.

The fundamental theories on this research include the Good Governance Theory, which emphasizes the importance of transparency, accountability, and participation in government management, as well as the Digital Learning Governance Theory, which explains how information technology can improve ASN learning (Mozin et al., 2025). The Good Governance Theory provides a conceptual framework for understanding the importance of ethics in governance, while the Digital Learning Governance Theory explains how technology can be utilized to enhance learning effectiveness (Pakhnenko & Kuan, 2023).

The validity of the data was tested through triangulation, where findings from interviews and focus group discussions were compared with official government regulations, policy documents, local government reports, and archival records related to digital learning governance. The triangulation procedure involved cross-checking consistency across these different sources, verifying key themes identified in the interviews, and confirming them with documentary evidence to ensure that the information obtained was accurate, reliable, and contextually grounded (Agustini et al., 2023). By employing a systematically designed method, this study ensures rigour through triangulation and structured protocols, while addressing limitations such as potential researcher bias and the contextual scope of a single case study through transparent documentation and cross-validation of data, thereby providing a robust foundation for advancing digital ethics, governance effectiveness, and policy recommendations to strengthen civil servant capacity in the digital era.

## RESULTS AND DISCUSSIONS

### 1. The Influence of ASN Bureaucratic Ethics on the Effectiveness of Digital Learning Governance.

The findings indicate that ASN bureaucratic ethics—particularly integrity, accountability, and transparency—play a decisive role in shaping the effectiveness of digital learning governance. Integrity, as a moral foundation, is reflected in adherence to learning schedules, honesty in digital assessments, and compliance with data security protocols, ensuring that learning processes remain accurate and reliable (Mozin et al., 2025). Accountability is demonstrated through the ability of ASNs to document and justify their learning progress via digital monitoring mechanisms, reinforcing responsibility and institutional trust (Fahlevvi et al., 2025). Transparency is manifested in the provision of open access to learning materials and real-time feedback channels, which enhance inclusivity and improve the overall quality of the digital learning experience (Rivai, 2025). Collectively, these ethical dimensions illustrate that bureaucratic ethics are not merely normative ideals but operational drivers of effective and sustainable digital learning governance.

#### 1.1 The Influence of ASN Bureaucratic Ethics on the Effectiveness of Digital Learning Governance

The Role of ASN Integrity in Strengthening the Effectiveness of Digital Learning. ASN integrity is the main pillar in realising the effectiveness of digital learning governance, because integrity refers to the consistency between values, moral principles, and actions held firmly by ASN. ASN integrity indicators (honesty, rule compliance, responsibility, transparency, trust, and digital learning support). The average score (mean) is then interpreted with a Likert scale benchmark (1-4): 1.00-1.99 = Very Low, 2.00-2.99 = Low, 3.00-3.49 = Moderately High, 3.50-4.00 = Very High. The research data shows that ASN Integrity (honesty, compliance, responsibility, transparency) consistently scored very high ( $\geq 3.5$ ), indicating a consistency of values, moral principles, and actions. The dimension of gratification is strikingly different: Functional high (3.62), Structural low (2.41). The effectiveness of digital learning (indicators 47-62) is in the moderately high to very high category (3.19-3.76), indicating that ASN integrity plays a role in strengthening the acceptance and success of digitalisation of learning. (Table 1). High integrity fosters honest and responsible behaviour, which in turn facilitates the implementation of digital learning. ASN integrity is also reflected in adherence to professional ethical standards and honesty in communication and reporting, which has an impact on increasing trust in digital learning systems (Sulaiman et al., 2025). With strong integrity, ASN is better equipped to manage and optimise the use of digital technology for learning, thus helping to create effective and sustainable governance.

**Table 1.**  
**Descriptive Statistics and the Correlation of Integrity with the Effectiveness of Digital Learning Governance**

Civil Servant Integrity Indicators	Group	Mean	Std. Dev	Scale Interpretation
Honesty in action	Functional	3.92	0.27	Very High
	Structural	3.96	0.19	Very High
Compliance with regulations	Functional	3.81	0.40	Very High
	Structural	3.89	0.31	Very High
Keeping promises	Functional	3.77	0.43	Very High
	Structural	3.83	0.38	Very High

Civil Servant Integrity Indicators	Group	Mean	Std. Dev	Scale Interpretation
Putting the interests of the organisation first	Functional	3.58	0.58	Very High
	Structural	3.83	0.38	Very High
Maintain the trust of superiors	Functional	3.92	0.27	Very High
	Structural	3.89	0.31	Very High
Support transparency & accountability	Functional	3.85	0.37	Very High
	Structural	3.90	0.41	Very High
Responsibility for decisions	Functional	4.00	0.00	Very High
	Structural	3.97	0.19	Very High
Not accepting gratuities	Functional	3.62	0.98	Very High
	Structural	2.41	1.50	Rendah
Transparent & accurate reports	Functional	3.92	0.27	Very High
	Structural	3.90	0.31	Very High
Mastery of digital skills	Functional	3.19	0.75	High enough
	Structural	3.48	0.69	High enough
Utilisation of digital technology in productivity	Functional	3.62	0.75	Very High
	Structural	3.76	0.43	Very High
Digital policy supports ASN	Functional	3.58	0.58	Very High
	Structural	3.76	0.51	Very High

Source: Field data processing Besse (2025)

Accountability as a Control Mechanism for Digital Governance. ASN accountability is the main control mechanism that ensures all digital learning governance processes run in accordance with established standards and objectives. Based on the research data, ASN accountability scores are generally very high (mean 3.73-3.93), indicating the consistency of control mechanisms based on honesty, timely reports, and information disclosure. The role of transparent reports and work evaluation strengthens digital governance mechanisms, so that public and leadership oversight can be more effective. The dimension of openness to feedback (mean 3.72 in structural) is slightly lower than other indicators, indicating room for improvement in receiving feedback. This overall score shows that ASN accountability serves as an internal and external control to ensure digital governance runs with the principles of transparency, honesty, and accountability (Table 2), which indicates that ASN has a high level of awareness in carrying out its responsibilities in a transparent and accountable manner. Such accountability encourages ASN to conduct regular evaluations of digital learning performance, so that the programmes implemented can be adjusted and improved continuously. In addition, digitisation of the reporting process enables real-time monitoring, which strengthens control over programme implementation. Increased accountability creates a responsive governance system and minimises the risk of misuse of technology or data in digital learning (Apriani & Ramadhany, 2025).



**Table 2.**  
**Descriptive Statistics and the Correlation of Accountability with the Effectiveness of Digital Learning Governance**

ASN Accountability Indicators	Group	Mean	Std. Dev	Scale Interpretation
<b>Provide honest and accurate reports</b>	Functional	3.92	0.27	Very High
	Structural	3.90	0.31	Very High
<b>Ready to take responsibility for work</b>	Functional	3.92	0.27	Very High
	Structural	3.83	0.54	Very High
<b>Deliver reports on time</b>	Functional	3.54	0.51	Very High
	Structural	3.86	0.44	Very High
<b>Open to receiving feedback</b>	Functional	3.89	0.33	Very High
	Structural	3.72	0.70	Very High
<b>Conduct performance evaluations for improvement</b>	Functional	3.73	0.45	Very High
	Structural	3.83	0.38	Very High
<b>Provide clear and easy-to-understand information</b>	Functional	3.77	0.43	Very High
	Structural	3.93	0.26	Very High
<b>Transparent report on work progress</b>	Functional	3.85	0.37	Very High
	Structural	3.79	0.49	Very High
<b>Sharing relevant information for the common good</b>	Functional	3.89	0.33	Very High
	Structural	3.90	0.41	Very High
<b>Reporting the state of the job honestly</b>	Functional	3.77	0.43	Very High
	Structural	3.83	0.47	Very High
<b>Support transparency policies</b>	Functional	3.81	0.40	Very High
	Structural	3.93	0.26	Very High
<b>Provide an explanation of the decision openly</b>	Functional	3.85	0.37	Very High
	Structural	3.83	0.47	Very High
<b>Ensure the information shared is accurate</b>	Functional	3.89	0.33	Very High
	Structural	3.83	0.47	Very High

Source: Field data processing Besse (2025)

Transparency in Bureaucracy as a Catalyst for Digital Learning Effectiveness. Transparency in the ASN bureaucracy is a crucial element that allows access to information related to the implementation of digital learning for all stakeholders. Table 3 the research data noted that ASN transparency scores were at a very high level (average 3.77-3.93). This shows that both functional and structural ASNs maintain information and communication openness. Open communication has two important forms: Formal channels, e.g. digital progress reports (mean 3.85-3.79) and explanations of decisions (mean 3.85-3.83). This form reinforces bureaucratic accountability and is auditable. Informal Interaction → sharing relevant information (mean 3.89-3.90) as well as honest day-to-day communication (mean 3.92-3.93). This dimension is more flexible, supports horizontal trust-building between employees, and accelerates knowledge transfer. Transparency in digital governance is not just about official documents, but also a climate of open communication that allows every employee to feel safe expressing opinions, providing feedback, and discussing work improvements. Thus, formal transparency ensures legality & administrative accountability, while informal transparency ensures a collaborative work culture that is more adaptive in the face of digital transformation (Apriani &

Ramadhany, 2025). Transparency in Bureaucracy as a Catalyst for Digital Learning Effectiveness. Transparency in the ASN bureaucracy is a crucial element that allows access to information related to the implementation of digital learning for all stakeholders. The research data noted that ASN transparency score is at a very high level (mean 3.77-3.93). This shows that both functional and structural ASNs maintain information and communication openness. Open communication has two important forms: Formal channels, e.g. digital progress reports (mean 3.85-3.79) and explanations of decisions (mean 3.85-3.83). This form reinforces bureaucratic accountability and is auditable. Informal Interaction → sharing relevant information (mean 3.89-3.90) as well as honest day-to-day communication (mean 3.92-3.93). This dimension is more flexible, supports horizontal trust-building between employees, and accelerates knowledge transfer. Transparency in digital governance is not just about official documents, but also a climate of open communication that allows every employee to feel safe expressing opinions, providing feedback, and discussing work improvements. Thus, formal transparency ensures legality & administrative accountability, while informal transparency ensures a collaborative work culture that is more adaptive in the face of digital transformation.

**Table 3.**  
**Descriptive Statistics and the Correlation of Transparency with the Effectiveness of Digital Learning Governance**

ASN Transparency Indicator	Group	Mean	Std. Dev	Scale Interpretation
Provide transparent progress reports	Functional	3.85	0.37	Very High
	Structural	3.79	0.49	Very High
Sharing relevant information for mutual benefit	Functional	3.89	0.33	Very High
	Structural	3.90	0.41	Very High
Provides clear & easy-to-understand information	Functional	3.77	0.43	Very High
	Structural	3.93	0.26	Very High
Prioritising honesty in work communication	Functional	3.92	0.27	Very High
	Structural	3.93	0.26	Very High
Support the organisation's transparency policy	Functional	3.81	0.40	Very High
	Structural	3.93	0.26	Very High
Provide a clear explanation of the decision	Functional	3.85	0.37	Very High
	Structural	3.83	0.47	Very High

Source: Field data processing Besse (2025)

The results show that transparency has the strongest correlation with the effectiveness of digital learning governance, surpassing integrity and accountability. This highlights that open communication and information disclosure whether through formal reports and digital platforms or informal peer interactions are critical to the success of ASN's digital learning programs. Theoretically, transparency ensures accountability and fosters trust, while practically it enables timely feedback, reduces misinformation, and strengthens collaboration. Yet, transparency works best when supported by integrity (consistency of values and actions) and accountability (readiness to justify decisions), making these three ethical pillars collectively essential for enhancing the legitimacy and impact of bureaucratic digital learning governance.

### **1.2. Analysis of Moderation Variables on the Effectiveness of Digital Learning Governance**

The moderation variable performs an important role in understanding how supporting factors can influence and strengthen the relationship between the independent variables of ASN

bureaucratic ethics (integrity, accountability, and transparency) and the effectiveness of digital learning governance (Rahmadany, 2024). The three moderation variables analyzed were ASN Digital Capacity, Internal Policy, and Information and Communication Technology (ICT) Infrastructure (Wardiyanto et al., 2025). The digital capacity of ASN reflects the level of ability and readiness of state civil servants' human resources in mastering and utilizing digital technology effectively within the context of bureaucracy and digital learning (Mozin et al., 2025). Internal policy describes the regulations, guidelines, and organizational support that serve as an umbrella for implementing digital learning governance and ethical bureaucratic practices. Meanwhile, ICT infrastructure includes the availability and quality of technological facilities that support the implementation of digital learning and governance. These three moderation variables were analyzed to determine how they can strengthen or weaken the influence of bureaucratic ethics on the effectiveness of digital learning governance, thereby providing a more comprehensive understanding of the determinants of digital governance implementation success in the ASN environment.

The analysis reveals that digital capacity acts as a positive moderator, strengthening the impact of accountability ( $\beta = 8.47$ ,  $p = 0.044$ ) and transparency ( $\beta = 9.82$ ,  $p < 0.001$ ) on the effectiveness of digital learning governance. In other words, civil servants with higher digital competence are better able to translate accountability into timely reporting and to operationalize transparency through open digital communication, thereby amplifying their effects on governance outcomes. By contrast, the moderation of digital capacity on the relationship between integrity and effectiveness was not significant ( $p = 0.71$ ), suggesting that integrity—being more value-driven and internalized—does not depend on digital skills to exert its influence. This nuance underscores that while digital capacity enhances the practical enactment of accountability and transparency, integrity remains a stable ethical anchor, relatively unaffected by technological competence.

Statistics and Correlations, Internal Policy, was recorded with an average score of 3.56 and a standard deviation of 0.43, indicating a relatively stable and positive perception among ASN (Table 1). The correlation between internal policy and the effectiveness of digital learning governance was moderately positive, at 0.63, and demonstrated a positive relationship with transparency (0.34) and accountability (0.10). The effect of moderation, specifically the moderation of internal policy on the relationship between bureaucratic ethics variables and effectiveness, varied, with the significant moderation being the interaction between transparency and effectiveness, with an interaction value of 14.02 ( $p = 0.0085$ ). Internal policy moderation on the relationship between integrity and accountability is not significant. Clear, adequate internal policies that support digital learning governance can strengthen the influence of transparency on the effectiveness of digital governance implementation. The policy provides a framework for civil servants to be transparent in the digital realm, thereby creating a work environment conducive to effective digital learning.

Statistics and Correlations, ASN ICT Infrastructure has an average score of 3.41 and a standard deviation of 0.50, indicating a relatively high readiness of digital infrastructure (Table 4). The correlation between ICT Infrastructure and the effectiveness of digital learning governance is positive at 0.57. This infrastructure was also positively correlated with transparency ( $r = 0.37$ ), integrity ( $r = 0.25$ ), and accountability ( $r = 0.15$ ). Moderation Effect: ICT infrastructure plays an important role as a moderator, significantly strengthening the relationship between transparency and the effectiveness of digital learning governance, with an interaction coefficient of 11.15 ( $p < 0.00001$ ). Moderation of the effects of integrity and accountability is weaker and insignificant. The interpretation, availability, and quality of ICT infrastructure enable ASN to conduct digital administration practices transparently and effectively, thereby strengthening the

implementation of digital learning governance. Good infrastructure facilitates real-time information accessibility, supporting openness and enhancing the quality of learning. Table 4 presents a summary of descriptive statistics for the variables of ASN digital capacity, internal policies, and ICT infrastructure. The average score of these variables ranged from 3.33 to 3.56, with a fairly small standard deviation, indicating a relatively homogeneous level of respondents' perceptions of ASN digital capacity, internal policies, and ICT infrastructure within the organizations considered.

**Table 4**  
**Descriptive Statistics of Moderation Variables**

Variable	Average (mean)	Std. Dev	Min	Max
Digital Capacity of ASN	3.33	0.55	1.6	4.0
Internal Policy	3.56	0.43	2.0	4.0
ICT Infrastructure	3.41	0.50	2.2	4.0

Source: Field data processing Besse (2025)

**Table 5.**  
**Moderator Variable Correlation Matrix and Others**

	Digital Capacity of ASN	Internal Policy	ICT Infrastructure	The Effectiveness of Digital Learning	Integrity	Accountability	Transparency
Digital Capacity of ASN	1.00	0.72	0.64	0.79	0.23	0.27	0.52
Internal Policy	0.72	1.00	0.68	0.63	0.17	0.10	0.34
ICT Infrastructure	0.64	0.68	1.00	0.57	0.25	0.15	0.37
The Effectiveness of Digital Learning	0.79	0.63	0.57	1.00	0.23	0.34	0.77
Integrity	0.23	0.17	0.25	0.23	1.00	0.52	0.28
Accountability	0.27	0.10	0.15	0.34	0.52	1.00	0.52
Transparency	0.52	0.34	0.37	0.77	0.28	0.52	1.00

Source: Field data processing Besse (2025)

Table 5 displays the Pearson correlation coefficients between the main variables and moderating variables. There is a significant positive correlation between ASN digital capacity, internal policy, and ICT infrastructure with the effectiveness of digital learning. In addition, there

is a moderate positive relationship between aspects of bureaucratic ethics (integrity, accountability, transparency) and the effectiveness of digital learning, which indicates the important role of ethics in supporting the successful implementation of digital learning.

**Table 6.**  
**Results of Interaction Analysis of the Influence of Moderation**

<b>Moderator</b>	<b>Independent</b>	<b>Interaction Effects</b>	<b>p-value</b>
<b>Digital Capacity of ASN</b>	Integrity	12.64	0.711 (insignificant)
<b>Digital Capacity of ASN</b>	Accountability	8.47	0.044 (significant)
<b>Digital Capacity of ASN</b>	Transparency	9.83	<0.001 (very significant)
<b>Internal Policy</b>	Integrity	6.86	0.999 (insignificant)
<b>Internal Policy</b>	Accountability	4.98	0.537 (insignificant)
<b>Internal Policy</b>	Transparency	14.03	0.0085 (significant)
<b>ICT Infrastructure</b>	Integrity	8.67	0.326 (insignificant)
<b>ICT Infrastructure</b>	Accountability	3.42	0.084 (marginal)
<b>ICT Infrastructure</b>	Transparency	11.15	<0.00001 (very significant)

Source: Field data processing Besse (2025)

The results of the moderation analysis showed that the digital capacity of ASN and ICT infrastructure played a significant role in strengthening the relationship between transparency and the effectiveness of digital learning governance. This suggests that technological factors and the digital capabilities of the apparatus significantly influence the success of implementing transparency policies in the digital environment. Internal policies also act as a strong moderator in the relationship between transparency and effectiveness, so that adaptive internal regulations that support digitalization must continue to be developed as the foundation for implementing digital learning governance. In general, the moderation of this variable implies that the success of ASN bureaucratic ethics in digital learning governance not only depends on these ethical values but also on supporting conditions such as digital human resource capacity, internal policies, and adequate technological infrastructure. Table 6 indicates the results of testing the interaction effect between moderator variables and independent variables on the effectiveness of digital learning. Significant results were obtained in the interaction of ASN digital capacity with accountability and transparency, as well as internal policies with transparency, indicating that these moderating variables strengthen the relationship between the independent variables and the effectiveness of digital learning. Several other interactions did not show significance, so they did not contribute meaningful moderation.

## **2. The Influence of Internal Policies in Moderating the Relationship between Bureaucratic Ethics and the Effectiveness of Digital Learning Governance.**

The moderating effect of Internal Policy underscores its strategic role in shaping the relationship between bureaucratic ethics and digital learning governance effectiveness. Clear and effective policies denote regulations that are explicit, consistently enforced, and operationally aligned with digital practices, such as standardized reporting protocols, mandatory digital training, data

security guidelines, and incentive schemes for ethical compliance. These policies function as institutional mechanisms that translate ethical values into measurable governance outcomes, thereby reinforcing the effectiveness of digital learning systems (Mozin et al., 2025). Thus, the interaction between internal Policy and bureaucratic ethics requires serious attention to enhance the effectiveness of digital governance, where internal policies serve as regulators and balancers that can refine or even reduce direct dependence on bureaucratic ethics in achieving organizational goals. Internal organizational policies act as a moderating factor that strengthens the relationship between ASN bureaucratic ethics and the effectiveness of digital learning governance.

Supportive policies, such as rules for the use of learning technology, strengthening the reward and punishment system, and providing digital training, provide a framework that enhances the implementation of bureaucratic ethical values in the context of digital learning (Rofik Fauzan, 2024). Therefore, the internalization of clear and consistent policies is crucial for encouraging civil servants to implement digital learning governance effectively, based on the principles of bureaucratic ethics (Mozin et al., 2025). The analysis indicates that bureaucratic ethics alone exert a modest and statistically non-significant effect on digital learning governance ( $\beta = 0.396$ ,  $p = 0.180$ ), whereas internal policy demonstrates a strong direct effect ( $\beta = 0.912$ ,  $p < 0.001$ ). Notably, the negative and significant interaction term ( $\beta = -1.044$ ,  $p = 0.020$ ) reveals a substitution effect, whereby robust internal policies reduce reliance on individual ethical observance in achieving governance effectiveness. For example, standardized digital reporting systems can offset inconsistent honesty in performance disclosure, strict data protection protocols can substitute for lapses in responsibility over confidential information, and mandatory transparency mechanisms can compensate for limited voluntary openness in communication. Thus, while bureaucratic ethics remain normatively foundational, the findings suggest that strong institutional policies function as structural safeguards that ensure consistent ethical conduct in digital governance, even when personal adherence to ethical values is uneven.

**Table 7.**  
**Results of Internal Policy Moderation Analysis**

Variable	Coef ficient	Std. Error	p- value	Interpretation	Signif icance
<b>Bureaucratic Ethics (Centered)</b>	0.396	0.291	0.180	The Basic Influence of Bureaucratic Ethics on the Effectiveness of Digital Learning Governance	Ns
<b>Internal Policy (Centered)</b>	0.912	0.190	<0.001	The Direct Influence of Internal Policies on the Effectiveness of Digital Learning Governance	***
<b>Interaction (Ethics x Policy)</b>	-1.044	0.434	0.020	The effect of Internal Policy moderation that weakens the relationship between Bureaucratic Ethics and Effectiveness	*

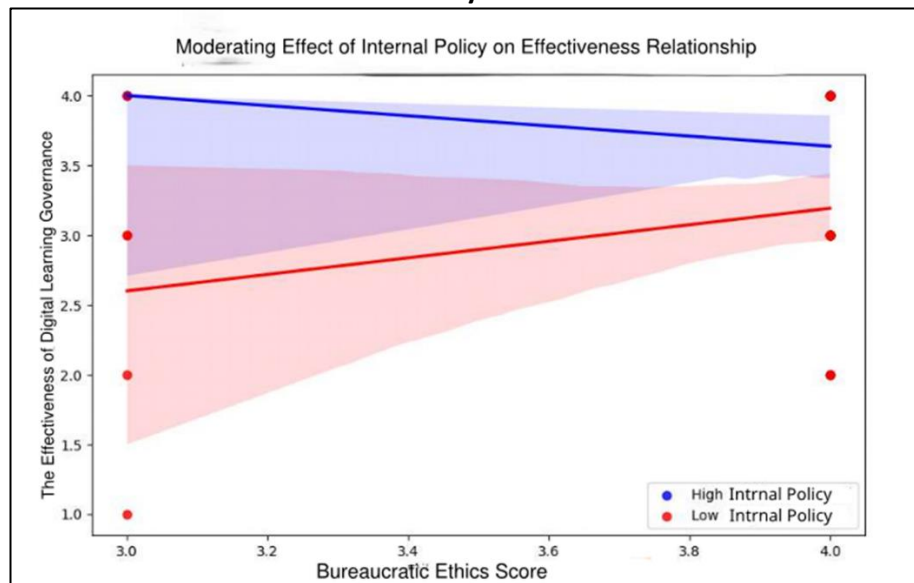
(ns = not significant, \*  $p < 0.05$ , \*\*\*  $p < 0.001$ )

Source: Field data processing Besse (2025)

The results of the analysis show that internal policy functions as a significant moderation variable in influencing the relationship between bureaucratic ethics and the effectiveness of digital learning governance. In general, bureaucratic ethics have a positive influence on the effectiveness of digital learning governance, but this influence becomes more complex when it is associated with the quality of internal policies that apply within the organization. A negative and significant moderation coefficient ( $-1.044$ ,  $p = 0.020$ ) indicates that the presence of a strong internal policy can reduce the dependence of bureaucratic ethics on the effectiveness of digital learning governance. This means that when internal policies have been implemented effectively and adequately, the direct impact of bureaucratic ethics becomes less dominant because internal policies take a greater role in increasing the effectiveness of digital governance. This condition reveals the presence of a substitution mechanism, where a solid internal policy can balance or replace part of the role of bureaucratic ethics in promoting the performance of digital learning governance. Table 7 shows the results of testing the interaction effect between moderator variables and independent variables on the effectiveness of digital learning. Significant results were obtained in the interaction of ASN digital capacity with accountability and transparency, as well as internal policies with transparency, indicating that these moderating variables strengthen the relationship between the independent variables and the effectiveness of digital learning. Several other interactions did not show significance, so they did not contribute meaningful moderation. Table 7 explains the direct and interaction effects between internal policies and bureaucratic ethics on the effectiveness of digital learning. The regression results show that internal policies have a positive and significant influence on digital learning effectiveness ( $p < 0.001$ ), while the interaction between bureaucratic ethics and internal policies has a significant negative moderating effect ( $p = 0.020$ ), indicating that internal policies weaken the influence of bureaucratic ethics on digital learning effectiveness in this context.

In addition, the direct effect of internal policy on the effectiveness of digital learning governance was substantial ( $0.912$ ,  $p < 0.001$ ), which confirms the central role of internal policy in creating an organizational environment that supports the achievement of digital governance goals. This aligns with previous findings that clear, consistent, and implementable policies can establish operational standards that enhance digital governance while mitigating behavioral variability that relies solely on ethical values (Mozin et al., 2025). The interaction graph also shows that when internal policy is in a high condition (a strong policy environment), the slope of the relationship between bureaucratic ethics and digital learning governance effectiveness becomes less steep or even slightly decreases. In contrast, in low internal policy conditions, the influence of bureaucratic ethics is more pronounced and increases along with the ethics score. This visually reinforces the interpretation that internal policy acts as a counterbalance and regulator of the relationship between these variables. In practical terms, these findings recommend that ASN organizations not only focus on strengthening the values and ethical practices of bureaucracy but also accelerate the development and renewal of internal policies that support comprehensive digital governance. A synergistic balance between ethical values and internal policies will allow for more optimal and sustainable effectiveness of digital learning governance. Figure 1 below visualizes the moderating effect of internal policies on the relationship between bureaucratic ethics and digital learning effectiveness. The graph shows that when internal policies are at a high level, the positive effect of bureaucratic ethics on digital learning effectiveness tends to decrease, which illustrates the negative moderating effect on the regression analysis results.

**Figure 1.**  
**Internal Policy Moderation**



Source: Field data processing Besse (2025)

### 3. The Role of ICT Infrastructure in Supporting the Effectiveness of Digital Learning

Adequate information and communication technology (ICT) infrastructure is a significant moderation variable that supports the relationship between ASN bureaucratic ethics and the effectiveness of digital learning governance. Reliable infrastructure includes a stable internet network, supporting hardware and software, and technical facilities that are easily accessible to ASN (Apriani & Ramadhany, 2025). The availability of this infrastructure enables civil servants to implement transparency and accountability in digital learning to the maximum extent, facilitating the integrity process of digital learning services (Adila & Mahendra Putri, 2024). Strengthening ICT infrastructure should be a significant concern to ensure that digital learning governance can run effectively and sustainably. Analysis of survey data on ASN shows that the variables of ICT infrastructure and digital learning effectiveness are measured using two key indicators, namely: ICT Infrastructure Indicator: "I always ensure that my work can be accounted for to my superiors and colleagues." with an average score of 3.91 (SD=0.29) from 55 respondents.

The indicator "the knowledge transfer process between employees runs effectively in the work environment" obtained an average score of 3.33 (SD = 0.72). Its correlation with digital learning governance effectiveness was very weak ( $r = 0.056$ ). A simple linear regression produced a coefficient of 0.14 with  $R^2 = 0.0032$ , indicating that only 0.32% of the variance was explained. The effect was not statistically significant ( $p = 0.6831$ ). It is important to note that this result pertains to a single indicator of ICT infrastructure rather than the overall construct. When broader dimensions of ICT infrastructure, such as accessibility, data security, and internet stability, were considered, the relationship with digital learning governance was significant. This distinction clarifies that knowledge transfer alone is not a sufficient predictor, but the composite construct of ICT infrastructure contributes meaningfully to digital learning effectiveness.

Data analysis on the variables of ICT Infrastructure and Digital Learning Effectiveness was carried out using two selected indicators, namely, ICT Infrastructure was represented by the statement "I maintain the confidentiality of information that should not be known by others," with an average score of 3.89 (SD = 0.42) from 55 respondents, and Digital Learning Effectiveness was



measured by the statement “Employee learning and development is well organized to support organizational goals,” which has an average score of 3.40 (SD = 0.74).

The results of Pearson’s correlation analysis showed a moderate positive relationship between the two variables, with a correlation coefficient of  $r = 0.387$ . These results suggest that improving ICT infrastructure is positively related to increasing the effectiveness of digital learning, although the relationship is not very strong. A simple linear regression analysis was performed to strengthen this correlation finding, yielding a regression coefficient of 0.685 and an intercept value of 0.735. This regression model explains approximately 15.01% (R-squared = 0.1501) of the variation in the effectiveness of digital learning that can be attributed to the ICT infrastructure variable. The p-value of the model significance test was 0.0035 ( $p < 0.05$ ), which indicates that the relationship is statistically significant and not coincidental.

The graph below shows the positive relationship between the ICT infrastructure score and the digital learning effectiveness of each respondent. The linear regression line shown confirms the trend of increasing the effectiveness of digital learning as the quality of ICT infrastructure improves. Correlation indicates the strength of the relationship between the variables being tested. The darker color on the box, representing the relationship between ICT infrastructure and digital learning effectiveness, indicates a positive correlation according to the correlation coefficient obtained.

**Table 8.**  
**Statistics and Analysis Results**

Statistics	ICT Infrastructure	The Effectiveness of Digital Learning
Average (Mean)	3.89	3.40
Standard Deviation (SD)	0.42	0.74
Number of Respondents (N)	55	55
Regression Statistics	Value	
Regression Coefficient (Slope)	0.685	
Intercept	0.735	
R-squared	0.1501	
Significance value (p-value)	0.0035	
Standard Error	0.224	

Source: Field data processing Besse (2025)

The findings of this analysis indicate that information and communication technology (ICT) infrastructure has a significant impact on the effectiveness of digital learning in ASN organizations. Table 8 shows the moderate correlation value found ( $r = 0.387$ ) and the positive regression coefficient suggests that the better and stronger the ICT infrastructure, the more optimal the implementation and development of the digital learning process. These results are consistent with the understanding in the literature that the availability and quality of ICT

infrastructure are important foundations in supporting digital learning activities, providing adequate access to technology, facilitating information dissemination, and promoting knowledge transfer between employees.

However, with an R-squared of 15%, only a small part (15.01%) of the variation in the effectiveness of digital learning can be explained by the ICT infrastructure variable, indicating that there are still other factors that play an important role, such as human resource capabilities, internal policies, organizational culture, and managerial support. Therefore, the management of ICT infrastructure needs to be complemented by a holistic strategy that includes enhancing employee competencies, implementing robust learning policies, and conducting continuous evaluations so that digital learning can operate effectively and have a positive impact on the performance of ASN.

The implementation of organizational digital learning relies on ICT infrastructure as a technical foundation, enabling effective access, distribution, and collaboration of information. Adequate infrastructure encompasses not only hardware and software, but also reliable communication networks, robust security systems, and adequate technical support. This aligns with information systems theory, which emphasizes the importance of technological capacity as a critical element in achieving organizational goals (Rajamemang et al., 2025). In addition to the technical aspect, the effectiveness of digital learning is influenced by the organization's readiness to manage and utilize the infrastructure. For example, the availability of reliable servers and a user-friendly learning management system (LMS) will support an interactive and structured learning process. The study found that although ICT infrastructure shows a significant relationship with the effectiveness of digital learning, the relatively low R-squared value (0.15) indicates that other variables, such as human resource capabilities and organizational policies, are also equally important determinants.

Furthermore, rapid technological changes require that organizations continually update and adapt their infrastructure. Investment in ICT capacity building, including user training and technology upgrades, is critical to maintaining the relevance and effectiveness of digital learning. This research supports the argument that infrastructure alone is insufficient without being complemented by strong managerial and human resource aspects. On the other hand, challenges related to data security and information protection are also significant concerns in the management of ICT infrastructure for digital learning. Maintaining a security aspect increases user trust and mitigates the risk of information leakage, which can disrupt the learning process and knowledge management within the organization. Thus, the results of this study encourage a multidimensional approach to managing digital learning, where ICT infrastructure investment must be balanced with the development of human resource strategies, adaptive learning policies, and continuous monitoring and evaluation to achieve the expected effectiveness.

## CONCLUSION

This research confirms that the bureaucratic ethics of the State Civil Apparatus (ASN) integrity, accountability, and transparency constitute a critical foundation for effective digital learning governance. This foundation is operationalised through behaviours such as accurate and consistent digital reporting, compliance with regulatory frameworks, and open communication, as well as through processes including standardized reporting systems and timely disclosure of performance data. The integrity of ASN does not merely function as an abstract moral value; it is the foundation that underpins all digital learning implementation mechanisms, ensuring they operate credibly, accurately, and in line with professional standards. In this context, work ethic

is operationalised through behaviours such as consistency in fulfilling digital learning tasks, diligence in maintaining data accuracy, and compliance with established protocols, while fairness is realised through equal access to digital learning resources, impartial evaluation of performance, and transparent decision-making. With high integrity, ASN can provide educational services that meet both technical and administrative requirements while upholding ethical responsibility in the digital learning process. This is particularly critical in the era of rapid digital transformation, where technological innovation must be applied without compromising honesty, equity, and social responsibility.

Furthermore, accountability, the second pillar of ASN bureaucratic ethics, functions as a determining factor that ensures the implementation of digital learning can be justified systematically and sustained over time. In practice, this is operationalised through mechanisms such as digital reporting systems that document learning activities in real time, performance evaluation dashboards that measure learning outcomes, and audit trails that ensure data accuracy and compliance. These instruments allow stakeholders to monitor and assess each stage of digital learning governance with full transparency. Accountability in this sense extends beyond administrative reporting to cultivate a work culture of collective responsibility and commitment to quality outcomes. This clarity of responsibility not only strengthens social control but also builds public trust and reinforces the legitimacy of bureaucratic institutions in managing digital learning. With such mechanisms in place, ASN are encouraged to engage in continuous improvement in response to evolving learning needs.

Transparency, as the third aspect inherent in the ethics of civil servant bureaucracy, offers an essential dimension of openness in the context of digital learning governance. Open and easy access to information related to program implementation enables real-time monitoring and evaluation, which is carried out responsively and tailored to changes as they occur. This openness not only ensures that important information is accessible to all stakeholders quickly and accurately but also encourages active participation in the digital learning process. Transparency has become a crucial pillar for fostering collaboration between different agencies and work units, as well as enhancing cross-sectoral integration within the government environment. In the digital age, where information moves quickly and the volume of data is increasing, transparency is a crucial strategy for overcoming the challenges of disinformation and enhancing the effectiveness of organizational communication. Therefore, strengthening the transparency mechanism is not only about opening access to data but also about building a culture of openness that supports innovation and continuous improvement in the quality of digital education services.

This study places special attention on the moderation variable, namely the internal policies of local governments, which have a significant role in strengthening the relationship between bureaucratic ethics and the effectiveness of digital learning governance. An adaptive, inclusive, and proactive internal policy is a vital regulatory framework in supporting civil servants to carry out their duties ethically and professionally. The policy not only provides technical guidance but also establishes norms and standards of work behavior that support the strengthening of bureaucratic ethics. The implications of this good policy include improving coordination between work units, strengthening operational synergy, and ensuring that all digital learning governance programs run in a structured and integrated manner. In this context, local governments that can design and implement effective internal policies will be better equipped to face the various challenges of digitizing public services, including those related to human resources, technology, and socio-political dynamics.

This research also highlights the importance of information and communication technology (ICT) infrastructure as a crucial supporting factor in enhancing the effectiveness of digital learning governance. A strong and reliable ICT infrastructure not only ensures the smooth access and distribution of information in a bureaucratic environment but also optimizes the process of monitoring, evaluation, and response to dynamic and real-time digital learning systems. The availability of state-of-the-art infrastructure is needed to overcome technical barriers that have the potential to disrupt program implementation and trigger inefficiencies in learning governance. Therefore, as part of practical recommendations, local governments are required to make sustainable strategic investments in ICT infrastructure capacity development, including network upgrades, hardware, and supporting software. Additionally, there is a requirement to update and strengthen internal policies that emphasize the ethical aspects of bureaucracy as the primary foundation of digital learning governance. This combination of strategic vision is believed to maximize the benefits of digitalization, not only for civil servants, but also for improving the quality of education services and public services more broadly and sustainably.

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