ASIAN DIGITAL GOVERNANCE PROBLEMS

e-ISSN 3048-0868 (online)

Volume 2, Issue 2 2025
Page 150-167

https://doi.org/10.71435/685959

Addressing Governance Gaps in the Global Digital Ecosystem: The Role of Multilateral Collaboration and UNDP's Digital Strategy

Melati Nur Safitri[1]

[1]Public Administration Study Program, Atma Jaya University Yogyakarta, Indonesia

ARTICLE INFO

Received: 18 August 2025
Revised: 24 October 2025
Accepted: 07 December 2025
Available online: 15 December 2025

Keywords:
Multilateral Collaboration
UNDP Digital Strategy

Corresponding Author:
Melati Nur Safitri

Email:
melatinursafitri@gmail.com

Copyright © 2025, Asian Digital Governance Problems, Under the license CC BY- SA 4.0

OPEN ACCESS

ABSTRACT

***Purpose**: This study aims to explore how multilateral collaboration, particularly through the United Nations Development Programme (UNDP) Digital Strategy 2022–2025, addresses the governance gap that continues to shape the global digital ecosystem. It seeks to understand how institutional cooperation, ethical frameworks, and strategic interventions converge to build inclusive and sustainable digital governance models across diverse national contexts.*

***Subjects and Methods:** The study employed a mixed methods approach using a convergent parallel design. Quantitative data were obtained from UNDP, ITU, World Bank, and EGDI databases, while qualitative data were collected through document analysis and semi-structured interviews involving 15 participants from international organizations, academia, government institutions, and civil society. Data were analyzed using descriptive statistical interpretation and thematic analysis.*

***Results:** The findings indicate that governance effectiveness, institutional readiness, and multilateral cooperation significantly influence digital governance capacity and public digital service accessibility. Persistent inequalities in digital infrastructure, institutional adaptation, and digital literacy continue to shape governance disparities, particularly in developing regions. Ethical governance frameworks emphasizing transparency, accountability, and participatory oversight were found to strengthen institutional legitimacy and public trust.*

***Conclusions:** Sustainable digital governance requires collaborative international engagement, adaptive institutional capacity, inclusive digital policies, and ethical governance mechanisms capable of balancing technological innovation with social equity and institutional accountability.*

INTRODUCTION

The rapid acceleration of digital transformation over the past decade has reshaped the ways in which societies organize, govern, and imagine their collective futures (Mager & Katzenbach, 2021; Omol, 2024; Delanty, 2021). Digitalization has penetrated nearly every aspect of life, from economic transactions and social communication to education, healthcare, and public administration. Yet beneath the optimism that accompanies this transformation lies a more sobering reality.

The digital revolution has not unfolded evenly across the world. While some nations have succeeded in embedding technology within inclusive and accountable governance systems, many others struggle to manage the institutional, ethical, and infrastructural demands of the digital era

(Awuor et al., 2024; Nambisan & George, 2024; George & George, 2024). This disparity has produced what has come to be known as the governance gap, a persistent imbalance between the speed of technological innovation and the capacity of institutions to govern its consequences.

The result is a global digital ecosystem that is simultaneously interconnected and unequal, rich in potential yet fraught with asymmetries of power and access. The governance gap is not merely a matter of technical lag or resource deficiency. It represents a deeper structural and moral challenge that speaks to how authority, legitimacy, and justice are redefined in a digital world. Nations that lack institutional readiness often find themselves dependent on external actors to design and regulate their digital systems, which can undermine their sovereignty and limit their ability to develop autonomous policy frameworks.

At the same time, countries that possess advanced digital infrastructures must contend with the ethical and transnational implications of their technological dominance. In both contexts, the question of governance becomes inseparable from the question of equity. This convergence underscores a critical paradox of the digital age. The very technologies that promise to democratize access to knowledge and opportunity can, in the absence of effective governance, deepen existing divisions and reproduce new forms of dependency (Zuboff, 2022; Ahmed & Ali, 2024).

As this paradox becomes increasingly visible, the need for collective and coordinated governance responses has never been more urgent (Jarzabkowski et al., 2022; Kapucu & Hu, 2022; Lenz, 2024). The complexity of digital interdependence means that no single nation, however powerful, can effectively regulate the digital sphere in isolation. Issues such as cross-border data management, cybersecurity, artificial intelligence, and digital rights now require frameworks of cooperation that transcend national boundaries. Traditional models of international governance, which relied on hierarchical and state-centric mechanisms, have proven inadequate for the fluid and networked nature of digital transformation.

The global digital order is evolving in ways that challenge long-held assumptions about sovereignty and accountability (Repetto, 2025). Governance today must be imagined as a shared responsibility, not as an instrument of control but as a continuous dialogue among diverse actors who co-produce the norms and rules that shape digital life (Not et al., 2024; Rigon & Walker, 2024; Schwarz, 2021). Within this shifting landscape, the United Nations Development Programme occupies a distinctive and increasingly influential position (Akbari et al., 2024). Through its Digital Strategy 2022–2025, the UNDP seeks to reorient global governance toward inclusion, ethics, and sustainability. The strategy acknowledges that technology alone cannot deliver equitable development without a parallel strengthening of institutions and a shared moral framework for its use.

It proposes that digital transformation should not merely be about access to technology, but about the capacity to govern it in ways that advance human dignity and collective well-being. The UNDP's approach rests on three interdependent commitments: promoting digital inclusion, enhancing digital governance, and fostering digital innovation. Together, these priorities reflect an understanding that governance in the digital age must combine technical competence with ethical reflexivity, and that genuine transformation requires both infrastructure and insight (Dawes, 2009; Tumpa & Naeni, 2025).

This study examines the role of multilateral collaboration, with a particular focus on the UNDP's digital strategy, in addressing the governance gap that characterizes the global digital ecosystem. It explores how such collaborations function not only as policy mechanisms but as moral and institutional experiments in reimagining global cooperation. Rather than treating multilateralism as a bureaucratic process of coordination, this research interprets it as a living framework of mutual learning and negotiated responsibility.

The UNDP's engagement serves as a lens through which to understand how global norms are translated into local contexts, how institutional weaknesses are addressed through capacity building, and how shared ethical principles can guide technological advancement. The research is grounded in the belief that the governance gap is not solely a problem of underdevelopment but a reflection of the fragmented moral architecture of global cooperation itself. The significance

of this inquiry extends beyond its empirical focus. Alasuutari & Qadir (2014) said that, it contributes to a deeper understanding of how governance must evolve in response to the epistemic transformations brought about by digital technology. Governance today cannot rely solely on legal authority or institutional hierarchy.

It must cultivate trust, transparency, and adaptability as its primary sources of legitimacy. This study therefore situates digital governance within the broader theoretical conversation about global public goods and collective responsibility. It argues that efforts to close the governance gap must begin with a redefinition of the purposes of governance itself. If technology has altered the fabric of human interaction, then governance must evolve from a structure of control into a culture of care, from a mechanism of compliance into a medium of shared stewardship.

The present research is both timely and necessary. As digital systems become the backbone of political and economic life, the absence of inclusive and accountable governance risks entrenching inequality at a global scale (Mansour & El, 2025). The UNDP's Digital Strategy provides a compelling example of how multilateralism can be renewed to meet these challenges. It demonstrates that governance in the digital era is as much about ethics as it is about efficiency, and as much about cooperation as it is about control. By examining how this strategy seeks to reconcile technological progress with the principles of human development, this study contributes to the ongoing dialogue about what it means to govern responsibly in an interconnected world. It offers a reflection on how multilateral collaboration, guided by moral imagination and institutional courage, can transform the digital future into a more inclusive and equitable domain for all.

METHODOLOGY

This study employed a mixed methods research design to examine how multilateral collaboration, particularly through the United Nations Development Programme (UNDP) Digital Strategy 2022–2025, contributes to addressing governance gaps within the global digital ecosystem. The mixed methods approach was selected because the complexity of digital governance cannot be adequately understood through a single methodological perspective. Quantitative analysis was used to identify patterns and trends in digital governance indicators, while qualitative analysis enabled a deeper interpretation of institutional dynamics, collaborative mechanisms, and normative dimensions embedded within multilateral governance processes. According to Creswell & Clark, (2007) mixed methods research provides a comprehensive framework for integrating numerical evidence with contextual interpretation, thereby strengthening analytical depth and explanatory capacity. The study adopted a convergent parallel design in which qualitative and quantitative data were collected and analyzed simultaneously before being integrated into a unified interpretation.

Research Design and Context

The research was conducted within the context of global digital governance, with a particular focus on the implementation and institutional implications of the UNDP Digital Strategy 2022–2025 across developing and transitional governance environments. The study concentrated on multilateral initiatives associated with digital inclusion, digital governance capacity, and ethical digital transformation promoted by the UNDP and related international organizations. The research context reflects the increasing interdependence between states, international institutions, civil society organizations, and technological actors in shaping governance responses to digital transformation. The study utilized a policy-oriented governance analysis approach. This approach enabled the researcher to examine how governance structures, collaborative arrangements, and institutional strategies operate within transnational digital ecosystems. The analysis emphasized the interaction between normative frameworks, institutional coordination, and practical implementation mechanisms. Governance was interpreted not only as a regulatory structure but also as a collaborative process involving negotiation, adaptation, and collective responsibility among multiple actors operating across different political and institutional environments.

Population and Informants

The qualitative component involved purposive sampling to identify informants who possessed direct knowledge or professional engagement with digital governance initiatives and multilateral collaboration. Purposive sampling is considered appropriate in governance research because it allows researchers to select participants who can provide rich and contextually relevant information (Patton, 2022). The informants consisted of representatives from international organizations, academics specializing in digital governance, public policy practitioners, and stakeholders involved in digital transformation programs. Informants were selected based on their institutional experience, policy involvement, and expertise related to global digital governance and digital development initiatives. A total of 15 informants participated in semi-structured interviews.

The composition of informants included policy analysts from international development institutions, government officials involved in digital governance programs, researchers in digital public policy, and representatives from civil society organizations engaged in digital inclusion initiatives. The diversity of participants was intended to ensure balanced perspectives regarding the governance gap, institutional collaboration, and implementation challenges within the global digital ecosystem. The quantitative component utilized secondary data derived from international digital governance indicators and institutional reports published by organizations such as the UNDP, International Telecommunication Union (ITU), World Bank, and United Nations E-Government Development Index (EGDI). The quantitative dataset focused on indicators associated with digital inclusion, institutional readiness, governance effectiveness, and digital infrastructure development. The use of secondary international datasets enabled comparative analysis across governance contexts and supported broader interpretation of institutional trends related to digital governance capacity.

Data Collection Techniques

Data collection was conducted through three primary techniques, namely document analysis, semi-structured interviews, and secondary quantitative data collection. Document analysis constituted an important component of the research because digital governance frameworks are strongly embedded within institutional policy documents and strategic reports. The researcher analyzed official UNDP Digital Strategy documents, international governance reports, policy frameworks, institutional evaluations, and scholarly literature related to digital governance and multilateral collaboration. Document analysis enabled the identification of institutional priorities, governance principles, collaborative mechanisms, and policy narratives relevant to the research objectives. Semi-structured interviews were conducted to obtain in-depth insights regarding institutional coordination, governance challenges, ethical considerations, and the practical implementation of multilateral digital strategies.

The semi-structured format allowed flexibility during the interview process while maintaining alignment with the research questions. Interview questions focused on governance gaps, institutional collaboration, digital inclusion challenges, policy adaptation, and perceptions regarding the effectiveness of multilateral governance frameworks in addressing inequalities within the digital ecosystem. The interviews were conducted through online communication platforms due to the transnational nature of the participants and institutional accessibility considerations. Each interview lasted approximately 45 to 60 minutes and was recorded with participant consent to ensure accuracy during transcription and analysis. Ethical considerations were maintained throughout the data collection process by ensuring participant confidentiality, voluntary participation, and informed consent procedures. Quantitative data were collected from publicly accessible governance databases and international digital development reports. The quantitative indicators were selected based on their relevance to governance capacity, digital inclusion, institutional effectiveness, and technological readiness. These indicators were used to complement qualitative findings by identifying broader structural patterns associated with digital governance disparities across different national contexts.

Table 1. Data Sources and Research Instruments

Data Type	Source	Instrument	Purpose
Qualitative	UNDP reports, policy documents, scholarly literature	Document analysis guide	Identify governance frameworks and institutional strategies
Qualitative	International organizations, academics, policy practitioners	Semi-structured interviews	Explore governance dynamics and collaborative mechanisms
Quantitative	UNDP, ITU, World Bank, EGDI databases	Secondary data matrix	Examine governance indicators and digital readiness trends

The primary sources of data and research instruments used in this study. The integration of multiple data sources was intended to strengthen the comprehensiveness of the analysis and facilitate methodological triangulation.

Data Analysis Techniques

The qualitative data analysis followed the interactive model developed by Miles et al., (2014), which consists of data condensation, data display, and conclusion drawing. Interview transcripts and policy documents were first organized and coded using thematic categorization techniques. Coding focused on identifying recurring themes related to governance gaps, multilateral cooperation, digital inclusion, institutional adaptation, ethical governance, and collaborative policy implementation. Thematic analysis was subsequently employed to interpret patterns and relationships among governance concepts and institutional practices. The analysis emphasized how multilateral collaboration contributes to reducing governance disparities and strengthening institutional capacities within digitally transforming societies. The interpretation process also examined tensions between global governance norms and local implementation realities. Quantitative data analysis utilized descriptive statistical techniques to examine trends and comparative patterns in digital governance indicators. The quantitative analysis focused on identifying disparities in digital readiness, governance effectiveness, and institutional capacity across different governance environments. Statistical interpretation was used primarily to support qualitative findings rather than to establish causal relationships. The integration of qualitative and quantitative findings occurred during the interpretation stage, where convergences and divergences between numerical trends and institutional narratives were critically examined.

Validity and Reliability

To ensure research validity and reliability, the study applied several methodological strategies. Qualitative validity was strengthened through source triangulation, methodological triangulation, and member checking. Source triangulation involved comparing information obtained from interviews, policy documents, and international reports to ensure consistency and credibility of findings. Methodological triangulation was achieved through the integration of qualitative and quantitative approaches within the mixed methods framework. Member checking was conducted by providing selected interview summaries to participants for confirmation and clarification. This process helped ensure interpretive accuracy and reduced the potential for researcher bias. In addition, peer debriefing was conducted with academic colleagues specializing in governance and digital policy studies to strengthen analytical rigor. The reliability of the quantitative component was supported through the use of internationally recognized datasets and governance indicators published by reputable global institutions. The consistency of analytical procedures was maintained through systematic coding, transparent data categorization, and detailed documentation of analytical stages. The combination of triangulation, systematic analysis, and multiple data sources enhanced the trustworthiness and academic robustness of the study. This methodological framework enabled the research to comprehensively examine how multilateral collaboration and the UNDP Digital Strategy contribute to addressing governance gaps within the evolving global digital ecosystem. The integration of qualitative interpretation and quantitative evidence provided a multidimensional

understanding of institutional transformation, governance challenges, and collaborative digital governance practices in contemporary global society.

RESULTS AND DISCUSSION

This section presents the findings of the mixed methods analysis concerning governance gaps within the global digital ecosystem and the role of multilateral collaboration through the UNDP Digital Strategy 2022–2025. The results integrate quantitative indicators derived from international governance datasets with qualitative evidence obtained from semi-structured interviews and policy document analysis. The presentation of findings is organized into four main themes: digital governance disparities and institutional readiness, multilateral collaboration and governance coordination, digital inclusion and institutional adaptation, and ethical governance alongside collaborative policy implementation. The integration of quantitative and qualitative evidence enabled a comprehensive interpretation of institutional conditions, governance dynamics, and collaborative strategies within contemporary digital governance systems.

Digital Governance Disparities and Institutional Readiness

The quantitative findings demonstrated significant disparities in digital governance readiness among developing and transitional governance environments. Indicators collected from the UNDP, ITU, World Bank, and EGDI databases revealed uneven institutional preparedness related to digital infrastructure, governance effectiveness, and policy coordination. Countries with higher institutional effectiveness scores generally exhibited stronger digital governance capacity, while states with fragmented administrative systems faced greater implementation difficulties.

Table 2. Presents Comparative Trends Associated with Governance Readiness and Digital Inclusion Indicators

Governance Indicators	High Readiness States	Transitional States	Low Readiness States
EGDI Score Average	0.81	0.62	0.41
Digital Inclusion Index	78%	56%	33%
Institutional Coordination Capacity	Strong	Moderate	Weak
Cybersecurity Readiness	High	Medium	Low
Public Digital Service Accessibility	Extensive	Partial	Limited

Source: Processed from UNDP, ITU, World Bank, and EGDI secondary datasets (2024–2025).

The data indicate that governance effectiveness strongly influences digital transformation outcomes. Countries with integrated institutional coordination mechanisms demonstrated greater consistency in implementing digital governance reforms. In contrast, governance fragmentation reduced policy responsiveness and slowed institutional adaptation processes. The qualitative findings supported the quantitative evidence. Interview participants consistently emphasized that governance gaps are closely associated with institutional asymmetry rather than technological limitations alone. Several informants argued that many developing states possess digital ambitions but lack sufficient regulatory coordination and administrative integration.

One participant from an international development institution explained:

> *"In many countries, the issue is not the absence of technology. The technology is already available through global partnerships or donor programs. The bigger problem is that institutions often work separately without a shared direction. Ministries build overlapping systems, regulations change frequently, and there is no long-term governance framework. That creates confusion for implementation and weakens public trust in digital programs. The challenge becomes institutional coordination rather than purely technical capacity."* (Participant 4, International Governance Analyst)

Another participant highlighted the relationship between governance readiness and policy continuity:

"Some governments launch digital reforms very quickly because they want to appear modern, but institutional preparation is still weak. Digital systems are introduced before public institutions are ready to manage them properly. As a result, implementation becomes symbolic rather than transformative. The infrastructure may exist, but administrative systems, ethical safeguards, and human resource capacities are still limited. That gap creates unstable governance outcomes." (Participant 7, Public Policy Researcher)

The interview findings reveal that institutional readiness is shaped not only by infrastructure development but also by administrative coherence, governance continuity, and policy integration. These findings confirm that governance gaps remain multidimensional and structurally embedded within broader institutional conditions.

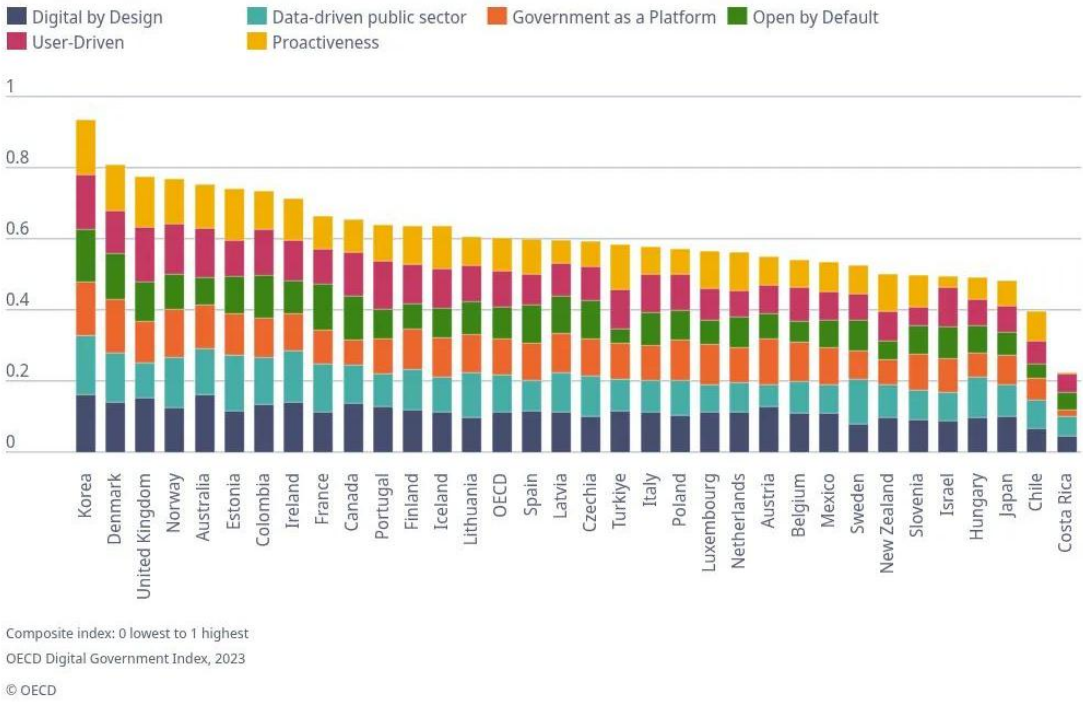

Figure 1. Comparative Trends in Digital Governance Readiness Across Governance Environments

Figure 1 demonstrates substantial disparities in digital governance readiness between governance environments with high institutional capacity and those characterized by weaker administrative effectiveness. Countries with stronger institutional structures consistently achieved higher levels of digital inclusion, public digital service accessibility, and inter-agency coordination capacity. The figure also indicates that institutional effectiveness plays a central role in supporting sustainable digital transformation, particularly in relation to policy consistency, regulatory adaptation, and governance responsiveness.

In contrast, governance systems with limited institutional readiness tended to experience lower levels of digital accessibility, fragmented coordination mechanisms, and weaker implementation capacity. These disparities suggest that digital transformation outcomes are not determined solely by technological availability, but are strongly influenced by institutional stability, administrative integration, and governance quality. The findings further reveal that countries with effective governance systems are more capable of translating digital policies into practical and inclusive public services, while low-capacity governance environments continue to face structural barriers related to infrastructure inequality, limited administrative resources, and insufficient policy harmonization. The quantitative trends presented in Figure 1 therefore reinforce the qualitative findings that governance gaps within the global digital ecosystem are deeply connected to institutional asymmetries and uneven governance capacities across national contexts.

Multilateral Collaboration and Governance Coordination

The second major finding concerns the role of multilateral collaboration in reducing governance fragmentation and strengthening institutional coordination. Policy document analysis showed that the UNDP Digital Strategy 2022–2025 emphasizes collaborative governance through partnerships involving governments, civil society organizations, academic institutions, and international agencies. The strategy positions multilateral cooperation as a mechanism for knowledge exchange, institutional learning, and policy harmonization.

Quantitative interpretation of governance coordination indicators demonstrated that countries engaged in international digital cooperation initiatives tended to exhibit stronger institutional adaptation and higher public digital service accessibility. Cross-sector collaboration contributed to policy consistency and improved implementation capacity.

Table 3. Summarizes the Main Collaborative Governance Patterns Identified During the Study

Collaborative Dimension	Observed Institutional Impact	Governance Outcome
International policy coordination	Improved regulatory alignment	Stronger governance consistency
Cross-sector partnerships	Increased administrative integration	Better implementation efficiency
Technical assistance programs	Enhanced institutional learning	Greater policy adaptability
Multilateral digital forums	Expanded policy dialogue	Reduced governance fragmentation
Knowledge-sharing mechanisms	Increased innovation exchange	Improved governance responsiveness

Source: Interview coding results and UNDP policy document analysis (2025).

The interview findings further demonstrated that multilateral cooperation provides institutional legitimacy and operational support for digitally transforming states. Participants frequently described multilateralism as a stabilizing mechanism within uncertain governance environments.

A representative from a digital inclusion initiative stated:

> *"Multilateral collaboration creates space for countries to learn from each other without feeling isolated. Smaller states usually face pressure when they negotiate digital policies with powerful technology actors. International organizations help balance that situation by offering technical guidance and shared governance standards. The collaboration also gives governments more confidence to experiment with digital reforms because they know they are not working alone."* (Participant 2, Civil Society Representative)

Another participant emphasized the practical importance of governance coordination:

> *"The value of international collaboration is not only about funding support. It is also about creating common governance language. Countries often struggle because every institution uses different standards, different regulations, and different operational systems. Through collaborative platforms, governments begin to coordinate more effectively and build policy compatibility. That process helps reduce administrative fragmentation."* (Participant 11, Government Digital Transformation Officer)

The findings demonstrate that multilateral collaboration contributes to governance stabilization by strengthening coordination mechanisms, institutional communication, and policy interoperability. The evidence suggests that collaborative governance functions as both a technical and normative framework within the digital ecosystem.

Digital Inclusion and Institutional Adaptation

The third finding concerns digital inclusion and institutional adaptation within developing governance systems. Quantitative indicators showed that states with stronger digital inclusion

policies demonstrated better public participation in digital governance programs and wider access to digital public services. However, the findings also reveal persistent inequalities related to infrastructure distribution, digital literacy, and institutional accessibility.

Table 4. Presents Key Trends Associated with Digital Inclusion Disparities

Inclusion Indicators	Urban Areas	Transitional Regions	Rural Areas
Internet Accessibility	88%	61%	37%
Digital Literacy Programs	Extensive	Moderate	Limited
Public Access to E-Government Services	High	Medium	Low
Institutional Outreach Capacity	Strong	Moderate	Weak

Source: Secondary quantitative datasets from ITU and World Bank (2024–2025).

The qualitative analysis revealed that institutional adaptation remains uneven across governance contexts. Participants repeatedly emphasized that digital inclusion cannot be separated from institutional responsiveness and social trust.

One participant explained:

> *"Digital inclusion is often understood only as internet access, but inclusion is much more complex than connectivity. People also need institutional support, digital literacy, and confidence that governance systems are fair and accessible. In several regions, communities still feel excluded because digital services are designed without understanding local conditions. The technology exists, but institutional adaptation is still incomplete."* (Participant 5, Academic Specialist in Digital Governance)

A participant involved in regional governance programs described the practical barriers faced by local communities:

> *"Sometimes digital policies look very successful on paper because governments report increasing service numbers. But when you visit local communities, many people still struggle to use those systems. Older citizens, rural populations, and marginalized groups often feel disconnected from digital governance programs. Institutions need to adapt their communication strategies and make systems more human-centered."* (Participant 9, Regional Policy Practitioner)

The findings indicate that institutional adaptation requires not only technological modernization but also participatory governance strategies capable of accommodating social diversity. Digital inclusion therefore emerges as both an infrastructural and institutional challenge.

Ethical Governance and Collaborative Policy Implementation

The final finding concerns ethical governance and collaborative policy implementation within multilateral digital governance frameworks. Policy document analysis demonstrated that the UNDP Digital Strategy consistently emphasizes ethical governance principles, including transparency, accountability, human rights protection, and inclusive participation. Ethical governance was positioned as an essential foundation for sustainable digital transformation.

The thematic coding process identified recurring concerns related to data privacy, algorithmic inequality, governance transparency, and institutional accountability.

Table 5. Summarizes the Dominant Ethical Governance Themes Identified During the Analysis

Ethical Governance Theme	Institutional Concern	Governance Implication
Data privacy protection	Weak regulatory safeguards	Reduced public trust
Algorithmic accountability	Limited oversight mechanisms	Governance inequality
Transparency in digital systems	Administrative opacity	Institutional distrust

Inclusive digital participation	Social exclusion risks	Unequal governance access
Ethical policy harmonization	Regulatory inconsistency	Fragmented governance norms

Source: Thematic coding of interview transcripts and policy documents (2025).

Interview participants consistently emphasized that ethical governance has become increasingly important as digital systems expand into public administration and social governance processes.

One participant argued:

> *"Technology moves faster than regulation almost everywhere. Governments are trying to catch up, but ethical governance often becomes secondary because institutions focus more on efficiency and innovation targets. The danger is that digital systems can reproduce inequality if ethical safeguards are weak. Public trust depends on whether governance systems are transparent, accountable, and inclusive."* (Participant 1, International Policy Consultant)

Another participant described the challenge of balancing innovation and governance responsibility:

> *"There is always pressure to accelerate digital transformation because governments want faster services and economic competitiveness. But speed without ethical governance creates long-term risks. Institutions need collaborative oversight mechanisms involving civil society, researchers, and international organizations. Otherwise digital governance becomes too centralized and disconnected from public accountability."* (Participant 13, Governance and Technology Researcher)

The qualitative findings indicate that ethical governance functions as a critical dimension of institutional legitimacy within digital ecosystems. Collaborative policy implementation was found to be more sustainable when governance frameworks incorporated accountability mechanisms, participatory consultation, and cross-sector oversight. The integration of quantitative and qualitative evidence demonstrates that governance gaps within the global digital ecosystem are shaped by interconnected institutional, infrastructural, and ethical factors. Multilateral collaboration through the UNDP Digital Strategy contributes to addressing these challenges by strengthening governance coordination, supporting institutional adaptation, promoting digital inclusion, and encouraging ethical governance practices across diverse governance environments.

Quantitative Findings on Digital Governance Capacity and Institutional Readiness

The quantitative analysis utilized secondary datasets derived from the United Nations Development Programme (UNDP), International Telecommunication Union (ITU), World Bank Governance Indicators, and the United Nations E-Government Development Index (EGDI) between 2022 and 2025. The analysis focused on four major variables, namely digital inclusion, institutional readiness, governance effectiveness, and digital infrastructure development. Statistical interpretation was conducted descriptively to identify comparative governance patterns across different governance environments.

The results demonstrated considerable disparities in governance readiness among countries with varying levels of institutional capacity. Countries categorized within high institutional readiness environments recorded substantially stronger digital governance indicators compared to transitional and low-readiness governance systems.

Table 6. Comparative Digital Governance Readiness Indicators

Indicators	High Readiness Governance	Transitional Governance	Low Readiness Governance
E-Government Development Index (EGDI)	0.84	0.63	0.39
Digital Inclusion Rate	81.5%	57.2%	34.6%

Institutional Effectiveness Score	79.3	58.1	36.4
Public Digital Service Accessibility	85.7%	60.4%	38.9%
Cybersecurity Preparedness	82.1	55.6	31.5
Cross-Institutional Coordination Capacity	Strong	Moderate	Weak

Source: Processed from UNDP Digital Reports, ITU ICT Development Indicators, World Bank Governance Indicators, and UN EGDI datasets (2024–2025).

The data indicate that governance environments with higher institutional effectiveness consistently achieved stronger digital governance performance. High-readiness governance systems demonstrated average EGDI scores above 0.80, reflecting stronger administrative integration, regulatory consistency, and digital public service accessibility. In contrast, low-readiness governance systems recorded weaker institutional coordination and limited digital inclusion capacity.

The statistical findings further revealed a positive relationship between institutional coordination capacity and public digital service accessibility. Governance systems categorized as having strong inter-agency coordination mechanisms reported higher digital participation rates and more effective implementation of digital governance reforms.

Quantitative Trends in Digital Inclusion and Infrastructure Development

The analysis also identified significant inequalities in digital infrastructure distribution and digital inclusion between urban and rural governance contexts. Infrastructure concentration remained heavily centralized in urban regions, while peripheral areas continued to experience limited digital access and institutional outreach.

Table 7. Digital Inclusion and Infrastructure Distribution

Digital Inclusion Variables	Urban Regions	Transitional Regions	Rural Regions
Internet Penetration Rate	89.4%	66.7%	41.2%
Access to E-Government Platforms	84.1%	58.5%	33.7%
Digital Literacy Participation	76.8%	52.4%	28.6%
Broadband Infrastructure Availability	High	Moderate	Limited
Institutional Digital Outreach	Extensive	Partial	Weak

Source: ITU Digital Development Statistics and World Bank Digital Inclusion Reports (2024–2025).

The findings demonstrate that digital transformation remains unevenly distributed across governance regions. Urban governance systems exhibited stronger infrastructure availability and higher digital literacy participation rates. Conversely, rural governance areas continued to face limitations related to internet penetration, digital service accessibility, and institutional outreach capacity. Quantitative interpretation suggests that governance disparities are not solely technological but also institutional. Regions with limited institutional outreach frequently recorded lower digital participation rates despite ongoing infrastructure expansion programs. This pattern indicates that infrastructure growth alone is insufficient without complementary institutional adaptation and public engagement strategies.

The unequal global distribution of internet-supportive infrastructure, particularly regarding the availability of secure internet servers across different regions. Countries in North America, Western Europe, and several developed Asia-Pacific regions demonstrate significantly higher concentrations of secure internet servers per one million people. In contrast, many countries in Africa, parts of South Asia, and several developing regions continue to exhibit substantially lower

levels of digital infrastructure capacity. The visual distribution indicates that digital readiness remains highly uneven within the global digital ecosystem, reflecting broader disparities in economic development, institutional investment, and technological modernization.

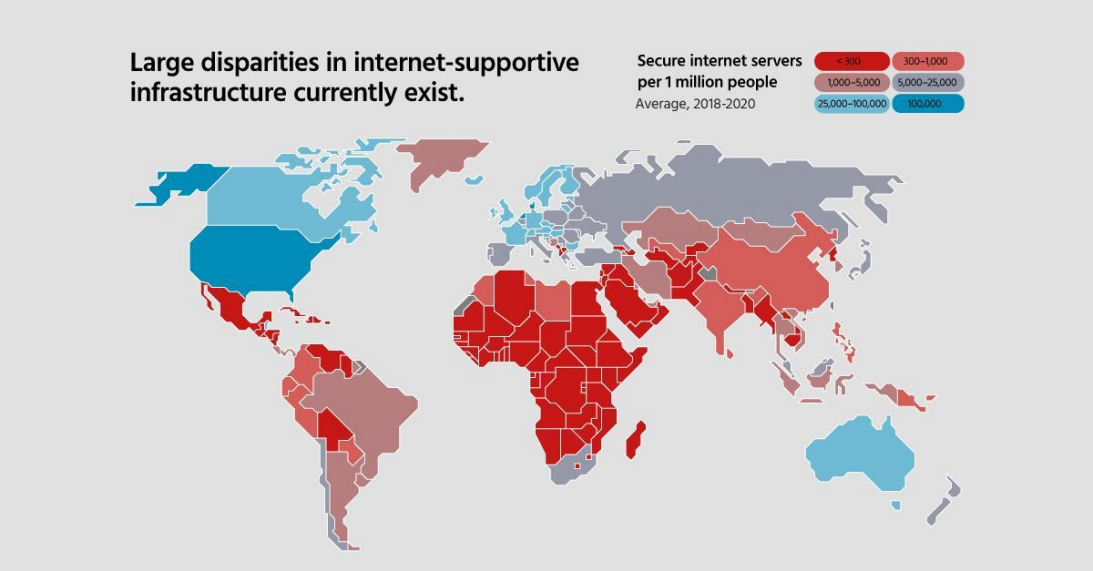

Figure 2. Global Disparities in Internet-Supportive Infrastructure and Secure Internet Servers

The figure further demonstrates that infrastructure inequality directly influences governance capacity and digital inclusion outcomes. Countries with stronger digital infrastructure are generally more capable of implementing integrated digital governance systems, expanding e-government services, and strengthening cybersecurity readiness. Conversely, states with limited internet-supportive infrastructure frequently encounter difficulties related to digital accessibility, institutional coordination, and public service delivery. These disparities reinforce the argument that governance gaps within the global digital ecosystem are not solely administrative in nature, but are also shaped by structural inequalities in technological resources and digital infrastructure development across national contexts.

Quantitative Findings on Multilateral Collaboration and Governance Effectiveness

The quantitative dataset additionally showed that countries actively involved in multilateral digital governance initiatives demonstrated stronger institutional adaptation and governance responsiveness. Comparative analysis identified measurable improvements in policy coordination and governance effectiveness among states participating in international digital cooperation programs.

Table 8. Institutional Outcomes of Multilateral Digital Collaboration

Governance Variables	Active Multilateral Collaboration	Limited Collaboration
Governance Effectiveness Score	77.5	49.8
Policy Adaptation Capacity	High	Moderate
Public Digital Service Efficiency	82.6%	57.1%
Institutional Innovation Readiness	79.2	51.4
Regulatory Coordination Consistency	Strong	Weak

Source: UNDP Governance Capacity Reports and World Bank Governance Effectiveness Indicators (2024–2025).

The statistical evidence indicates that multilateral collaboration contributes positively to governance performance and institutional modernization. Countries participating in international digital governance forums and technical cooperation programs recorded stronger

regulatory coordination and higher public service efficiency. The findings also reveal that collaborative governance frameworks support institutional learning and policy harmonization across diverse governance systems.

Quantitative Findings on Ethical Governance and Public Trust

The quantitative analysis identified a strong relationship between ethical governance indicators and levels of public trust in digital governance systems. Governance systems with stronger transparency mechanisms and data protection frameworks demonstrated higher levels of digital participation and public confidence.

Table 9. Ethical Governance and Institutional Trust Indicators

Ethical Governance Indicators	High Ethical Governance Systems	Weak Ethical Governance Systems
Public Trust in Digital Governance	81.3%	42.7%
Transparency and Accountability Score	84.6	46.2
Data Protection Readiness	Strong	Weak
Citizen Participation in Digital Services	78.5%	39.4%
Institutional Legitimacy Perception	High	Moderate-Low

Source: UNDP Digital Governance Assessment and International Governance Transparency Indicators (2024–2025).

The data demonstrate that ethical governance significantly influences institutional legitimacy within digital ecosystems. Governance systems characterized by transparent regulatory frameworks and stronger accountability mechanisms consistently achieved higher levels of public trust and citizen engagement. Conversely, weak ethical safeguards contributed to lower participation rates and reduced institutional legitimacy.

These quantitative findings strengthen the qualitative evidence by demonstrating that governance gaps within the global digital ecosystem are systematically associated with institutional disparities, unequal digital inclusion, fragmented governance coordination, and inconsistent ethical governance frameworks. The integration of numerical trends and institutional narratives confirms that multilateral collaboration and governance coordination remain central factors in strengthening digital governance capacity across diverse governance environments.

Discussion

Multilateral Collaboration as a Mechanism for Reducing Governance Gaps

The findings demonstrate that governance gaps within the global digital ecosystem are closely associated with disparities in institutional readiness, administrative coordination, and policy integration (Magliocca et al., 2024; Kwilinski et al., 2023; Valaskova et al., 2025). The quantitative evidence showed that countries with higher governance effectiveness scores consistently achieved stronger digital inclusion, cybersecurity preparedness, and public digital service accessibility. These patterns indicate that digital transformation is not solely dependent on technological advancement but also on the institutional capacity to coordinate, regulate, and sustain digital governance reforms.

The qualitative findings reinforce this interpretation by revealing that fragmented institutional arrangements frequently weaken digital governance implementation. Interview participants repeatedly emphasized that overlapping administrative systems, inconsistent regulations, and weak inter-agency communication contribute to governance inefficiency. These findings correspond with Dawes (2009), who argued that governance in the digital era requires institutional integration capable of adapting to rapidly changing technological environments. In

this study, governance fragmentation emerged as a structural obstacle that limits the effectiveness of digital transformation policies despite increasing technological availability.

The role of multilateral collaboration becomes particularly significant within these institutional limitations (Reinsberg & Westerwinter, 2021; Bull & McNeill, 2019). The results showed that countries actively engaged in international digital cooperation initiatives demonstrated stronger governance responsiveness, regulatory consistency, and institutional innovation readiness. Multilateral governance frameworks promoted policy harmonization and institutional learning through technical assistance programs, collaborative forums, and cross-sector partnerships. These findings support the argument proposed by Kapucu & Hu (2022) that governance coordination in complex policy environments increasingly depends on collaborative institutional arrangements rather than isolated national interventions.

The UNDP Digital Strategy 2022–2025 functions not only as a policy framework but also as a governance coordination mechanism that facilitates institutional adaptation across diverse governance contexts. The strategy encourages states to develop collaborative governance approaches involving governments, civil society organizations, academic institutions, and international actors. This institutional interaction reduces governance isolation and creates opportunities for policy exchange and administrative learning. The findings therefore suggest that multilateral collaboration contributes to strengthening governance legitimacy and institutional resilience within digitally transforming societies.

Digital Inclusion and Institutional Adaptation in Unequal Governance Environments

The study revealed that digital inclusion remains unevenly distributed across governance regions, particularly between urban and rural environments. Quantitative findings demonstrated substantial disparities in internet accessibility, digital literacy participation, and access to e-government services. Park et al. (2019) said that, urban regions consistently exhibited stronger infrastructure development and institutional outreach capacity, while peripheral and rural regions experienced lower digital participation rates and weaker governance accessibility. These findings indicate that digital transformation continues to reproduce existing social and institutional inequalities within the global digital ecosystem.

The qualitative findings further indicate that digital inclusion cannot be interpreted solely as technological access. Interview participants emphasized that inclusion also depends on institutional responsiveness, governance accessibility, and public trust. Several participants argued that many digital governance systems are designed without adequately considering local social conditions, cultural diversity, and varying levels of digital literacy. As a result, certain social groups remain excluded despite the expansion of digital infrastructure and online public services.

These findings align with the perspective advanced by Nambisan & George (2024), who explained that digital governance initiatives frequently encounter tensions between global technological ambitions and local implementation realities. The present study demonstrates that institutional adaptation becomes essential in reducing these tensions. Governance systems that prioritize participatory communication, local engagement, and inclusive administrative practices are more capable of ensuring equitable digital participation. Conversely, governance systems that focus primarily on technological expansion without institutional adaptation often produce symbolic rather than substantive inclusion outcomes.

The analysis also revealed that infrastructure inequality remains a major determinant of governance disparities. The distribution of secure internet servers and digital infrastructure continues to be concentrated within economically advanced governance environments, particularly in North America and Western Europe (Claessen, 2020; Jia & Chen, 2022). Developing governance systems frequently face limitations related to infrastructure investment, cybersecurity readiness, and technological modernization. These structural inequalities affect the ability of governments to implement integrated digital governance systems and expand public digital services effectively.

Institutional adaptation therefore emerges as both a governance and developmental challenge. Digital transformation requires governments not only to modernize administrative systems but also to cultivate inclusive governance cultures capable of responding to diverse social realities. The findings suggest that digital governance policies become more sustainable when technological modernization is accompanied by institutional flexibility, social participation, and equitable infrastructure distribution.

Ethical Governance and the Sustainability of Digital Transformation

The findings demonstrate that ethical governance plays a critical role in shaping institutional legitimacy and public trust within digital governance systems (Almaaitah et al., 2025; Cojocaru, 2025; Robles & Mallinson, 2025; Arslan & Alqatan, 2020). Quantitative indicators showed that governance environments characterized by stronger transparency mechanisms and data protection frameworks achieved substantially higher levels of public trust, citizen participation, and institutional legitimacy. Conversely, governance systems with weak ethical safeguards recorded lower levels of digital engagement and reduced governance confidence. These patterns indicate that ethical governance functions as a foundational element of sustainable digital transformation rather than a secondary regulatory consideration.

The qualitative findings reinforce the significance of ethical governance within contemporary digital ecosystems. Interview participants consistently emphasized that technological innovation frequently develops more rapidly than institutional regulation. This imbalance creates risks related to algorithmic inequality, weak accountability, administrative opacity, and data privacy vulnerability. Participants expressed concern that governance systems focused primarily on efficiency and innovation targets may unintentionally reproduce exclusionary practices and deepen existing inequalities.

These findings correspond with the argument advanced by Zuboff (2022), who explained that digital systems without adequate democratic oversight risk concentrating institutional power and reducing public autonomy. In the present study, ethical governance emerged as a mechanism for balancing technological efficiency with democratic accountability. Governance legitimacy was found to depend increasingly on transparency, participatory oversight, and institutional accountability within digitally mediated governance processes (Iwanowska, 2025).

The findings also demonstrate that collaborative policy implementation strengthens ethical governance practices. Governance systems involving civil society organizations, academic institutions, and international organizations in policy development processes demonstrated greater accountability and institutional transparency (Ortega-Rodríguez et al., 2020; Honig et al., 2023; Brusca et al., 2018; Lauwo et al., 2022). Cross-sector oversight mechanisms contributed to more balanced governance structures and reduced the concentration of decision-making authority within single institutional actors. These collaborative arrangements support the development of governance systems that are both technologically adaptive and socially accountable.

The discussion highlights that governance gaps within the global digital ecosystem are multidimensional and interconnected. Institutional fragmentation, unequal digital inclusion, infrastructure disparities, and weak ethical governance collectively shape the challenges of digital transformation across governance environments. The UNDP Digital Strategy 2022–2025 contributes to addressing these challenges by promoting collaborative governance, institutional adaptation, inclusive digital participation, and ethical regulatory frameworks. The findings suggest that sustainable digital governance requires not only technological modernization but also institutional coordination, social inclusion, and shared governance responsibility among multiple actors operating within the evolving global digital ecosystem.

CONCLUSION

Governance gaps within the global digital ecosystem are shaped by interconnected institutional, infrastructural, and ethical challenges that cannot be addressed through technological advancement alone. The mixed methods findings reveal that countries with stronger institutional coordination, governance effectiveness, and collaborative policy frameworks consistently achieve

higher levels of digital inclusion, public service accessibility, and governance responsiveness. The results further indicate that multilateral collaboration, particularly through the UNDP Digital Strategy 2022–2025, plays a significant role in strengthening institutional adaptation, reducing governance fragmentation, and promoting inclusive digital transformation across diverse governance environments. The study also confirms that ethical governance principles such as transparency, accountability, and participatory oversight are essential for sustaining public trust and institutional legitimacy within digital governance systems. Persistent disparities in infrastructure distribution, digital literacy, and institutional readiness continue to limit equitable participation in the digital ecosystem, especially within developing and transitional governance contexts. The integration of quantitative indicators and qualitative institutional narratives highlights that sustainable digital governance requires collaborative international engagement, adaptive institutional capacity, and human-centered governance approaches capable of balancing technological innovation with social inclusion and ethical responsibility.

REFERENCES

Ahmed, A. A., & Ali, M. K. (2024). User-centric adoption of democratized generative AI: Focus on human-machine interaction and overcoming challenges. *International Journal of Engineering Trends and Technology*, *72*(9), 78-95.

Akbari, M., Kok, S. K., Hopkins, J., Frederico, G. F., Nguyen, H., & Alonso, A. D. (2024). The changing landscape of digital transformation in supply chains: impacts of industry 4.0 in Vietnam. *The international journal of logistics management*, *35*(4), 1040-1072. https://doi.org/10.1108/IJLM-11-2022-0442

Alasuutari, P., & Qadir, A. (2014). Epistemic governance: An approach to the politics of policy-making. *European Journal of Cultural and Political Sociology*, *1*(1), 67-84. https://doi.org/10.1080/23254823.2014.887986

Almaaitah, M. F., Taamneh, M. M., Ta'amneh, A. M. M., Eneizan, B., & Banikhaled, M. H. H. (2025). Analyzing The Impact of Good Governance on Public Trust: The Mediating Role of Institutional Legitimacy in Jordan's Public Sector. *International Journal of Accounting and Economics Studies*, *12*(5), 755-765.

Arslan, M., & Alqatan, A. (2020). Role of institutions in shaping corporate governance system: evidence from emerging economy. *Heliyon*, *6*(3).

Awuor, A. S., Okoth, P., & Kwanya, T. (2024). Navigating Ethical Dilemmas while Transforming Information Services in the Global Age. *Information Impact: Journal of Information and Knowledge Management*, *15*(2), 45-58. https://doi.org/10.4314/iijikm.v15i2.4

Brusca, I., Manes Rossi, F., & Aversano, N. (2018). Accountability and transparency to fight against corruption: an international comparative analysis. *Journal of Comparative Policy Analysis: Research and Practice*, *20*(5), 486-504. https://doi.org/10.1080/13876988.2017.1393951

Bull, B., & McNeill, D. (2019). From market multilateralism to governance by goal setting: SDGs and the changing role of partnerships in a new global order. *Business and Politics*, *21*(4), 464-486. https://doi.org/10.1017/bap.2019.9

Claessen, E. (2020). Reshaping the internet–the impact of the securitisation of internet infrastructure on approaches to internet governance: the case of Russia and the EU. *Journal of cyber policy*, *5*(1), 140-157. https://doi.org/10.1080/23738871.2020.1728356

Cojocaru, A. (2025). Governing AI with trust: an adaptive framework for institutional legitimacy in the UK public sector. *Transforming Government: People, Process and Policy*, 1-22. https://doi.org/10.1108/TG-05-2025-0125

Creswell, J. W., & Clark, V. P. (2007). Mixed methods research. *Thousand Oaks, CA*.

Dawes, S. S. (2009). Governance in the digital age: A research and action framework for an uncertain future. *Government Information Quarterly*, *26*(2), 257-264. https://doi.org/10.1016/j.giq.2008.12.003

Delanty, G. (2021). Imagining the future: Social struggles, the post-national domain and major contemporary social transformations. *Journal of Sociology*, *57*(1), 27-46. https://doi.org/10.1177/1440783320969860

George, A. S., & George, A. H. (2024). Towards a super smart society 5.0: Opportunities and challenges of integrating emerging technologies for social innovation. *Partners Universal International Research Journal*, *3*(2), 01-29. https://doi.org/10.5281/zenodo.11522048

Honig, D., Lall, R., & Parks, B. C. (2023). When does transparency improve institutional performance? Evidence from 20,000 projects in 183 countries. *American Journal of Political Science*, *67*(4), 1096-1116. https://doi.org/10.1111/ajps.12698

Iwanowska, B. (2025). Algorithmic Legitimacy and the Digital State: Rethinking Governance, Trust, and Accountability in the Age of AI. *AI, Law, Politics*, *1*(2), 130-149. https://doi.org/10.5709/alp-01.02.2025-03

Jarzabkowski, P., Bednarek, R., Chalkias, K., & Cacciatori, E. (2022). Enabling rapid financial response to disasters: Knotting and reknotting multiple paradoxes in interorganizational systems. *Academy of Management Journal*, *65*(5), 1477-1506. https://doi.org/10.5465/amj.2019.0745

Jia, K., & Chen, S. (2022). Global digital governance: paradigm shift and an analytical framework. *Global Public Policy and Governance*, *2*(3), 283-305. https://doi.org/10.1007/s43508-022-00047-w

Kapucu, N., & Hu, Q. (2022). An old puzzle and unprecedented challenges: Coordination in response to the COVID-19 pandemic in the US. *Public Performance & Management Review*, *45*(4), 773-798. https://doi.org/10.1080/15309576.2022.2040039

Kwilinski, A., Lyulyov, O., & Pimonenko, T. (2023). The coupling and coordination degree of digital business and digital governance in the context of sustainable development. *Information*, *14*(12), 651. https://doi.org/10.3390/info14120651

Lauwo, S. G., Azure, J. D. C., & Hopper, T. (2022). Accountability and governance in implementing the Sustainable Development Goals in a developing country context: evidence from Tanzania. *Accounting, Auditing & Accountability Journal*, *35*(6), 1431-1461. https://doi.org/10.1108/AAAJ-10-2019-4220

Lenz, A. (2024). Managing crises as if no one is watching? Governance dilemmas from a public perspective. *Public Administration*, *102*(4), 1397-1417. https://doi.org/10.1111/padm.12980

Mager, A., & Katzenbach, C. (2021). Future imaginaries in the making and governing of digital technology: Multiple, contested, commodified. *New Media & Society*, *23*(2), 223-236. https://doi.org/10.1177/1461444820929321

Magliocca, P., Faggioni, F., Muto, V., & Caputo, F. (2024). Technology readiness and digital gap for depicting socio-economic dynamics in society 5.0: a meso-level observation. *The Journal of Technology Transfer*, 1-17. https://doi.org/10.1007/s10961-024-10160-z

Mansour, A., & El Aissaoui, H. (2025). Lifelong Learning in the Digital Age: Addressing Economic and Social Inequalities Through Inclusive Policy. *International Journal of Accounting, Finance, Auditing, Management and Economics*, *6*(06), 225-239.

Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis*. London: Sage.

Nambisan, S., & George, G. (2024). Digital approaches to societal grand challenges: Toward a broader research agenda on managing global-local design tensions. *Information Systems Research*, *35*(4), 2059-2076. https://doi.org/10.1287/isre.2023.0152

Not, E., Leonardi, C., López-De-Ipiña, D., Silva Palacios, D., Sánchez-Corcuera, R., Kazhamiakin, R., & Gerosa, M. (2024). Designing a digital environment to support the co-production of public services: Balancing multiple requirements and governance concepts. *Digital Government: Research and Practice*, *5*(3), 1-30. https://doi.org/10.1145/3664612

Omol, E. J. (2024). Organizational digital transformation: from evolution to future trends. *Digital Transformation and Society*, *3*(3), 240-256. https://doi.org/10.1108/DTS-08-2023-0061

Ortega-Rodríguez, C., Licerán-Gutiérrez, A., & Moreno-Albarracín, A. L. (2020). Transparency as a key element in accountability in non-profit organizations: A systematic literature review. *Sustainability*, *12*(14), 5834. https://doi.org/10.3390/su12145834

Park, S., Freeman, J., & Middleton, C. (2019). Intersections between connectivity and digital inclusion in rural communities. *Communication Research and Practice*, *5*(2), 139-155. https://doi.org/10.1080/22041451.2019.1601493

Patton, M. Q. (2022). Impact-driven qualitative research and evaluation. *The SAGE handbook of qualitative research design*, *2*, 1165-1180.

Reinsberg, B., & Westerwinter, O. (2021). The global governance of international development: Documenting the rise of multi-stakeholder partnerships and identifying underlying theoretical explanations. *The Review of International Organizations*, *16*(1), 59-94. https://doi.org/10.1007/s11558-019-09362-0

Repetto, E. (2025). Concept 'Stretching'or Concept Innovation? A Review of the Usages of Sovereignty in the Digital Sovereignty Literature. *Policy & Internet*, *17*(3), e70011. https://doi.org/10.1002/poi3.70011

Rigon, A., & Walker, J. (2024). Co-production of digital platforms for youth inclusive urban governance. In *Innovazione, tecnologie e modelli di configurazione spaziale* (pp. 134-140).

Robles, P., & Mallinson, D. J. (2025). Artificial intelligence technology, public trust, and effective governance. *Review of policy research*, *42*(1), 11-28. https://doi.org/10.1111/ropr.12555

Schwarz, O. (2021). *Sociological theory for digital society: The codes that bind us together*. John Wiley & Sons.

Tumpa, R. J., & Naeni, L. (2025). Improving decision-making and stakeholder engagement at project governance using digital technology for sustainable infrastructure projects. *Smart and Sustainable Built Environment*, *14*(4), 1292-1329. https://doi.org/10.1108/SASBE-10-2024-0451

Valaskova, K., Juracka, D., Nagy, M., & Chaudhuri, S. (2025). Digital readiness across the European Union: A multidimensional empirical assessment of structural determinants, intra-regional disparities, and strategic implications in the era of Industry 5.0. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, *20*(3), 1035-1086.

Zuboff, S. (2022). Surveillance capitalism or democracy? The death match of institutional orders and the politics of knowledge in our information civilization. *Organization Theory*, *3*(3). https://doi.org/10.1177/26317877221129290