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Digital Bureaucracy and the Paradox of Participation in Indonesia: Challenges for Public Policy Governance

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Abstract: This study explores the relation between digital bureaucracy, public engagement, and challenges in Indonesian governance via an ILR consisting of 57 articles indexed in Scopus (2021-2024). Though Indonesia strongly advocates for digital transformation, the results of the study indicate a significant gap. Despite implementing Digital Bureaucracy, Indonesia has been unable to overcome its governance deficit. Indeed, what the study has found is the Paradox of Participation, whereby digital technology aimed at empowering individuals is being used by entrenched patrimonial groups. In other words, without proper institutions, digitalisation becomes a source of oppression in that it helps elites in their practices of digital despotism and surveillance rather than democracy. This indicates that technology merely amplifies the power dynamics already existing in the society. Thus, solving the problem of Challenges for Public Policy Governance will require addressing the underlying extractive nature of the institutions rather than technological problems.

Keywords: Digital Bureaucracy; Paradox of Participation; Public Policy Governance; Patrimonialism; Extractive Institutions.

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1. Introduction

The state has shifted dramatically towards digital government in the 21st century, moving away from the dominance of traditional bureaucracy and undergoing a radical transformation from traditional models of government towards more digital models. The shift, known as the digitalisation of bureaucracy, is not just about technology upgrades in administrative processes, but also how the state and the population act and interact via data, algorithms and information systems. The response to the use of e-government and digital platforms has been more widespread worldwide due to their potential to improve efficiency, cut costs, and boost the overall quality of service delivery. The global survey on digital government by the United Nations (2022) highlights digital government as one of the key pillars to attain sustainable development in countries, and it encourages nations to use digital technologies to improve digital institutions for greater inclusiveness and effectiveness. According to van Gerven (2022), this transition is indeed changing the way social policy is thought and realized; in order to grasp the potential configurations of inclusion/exclusion in the digital era alongside the issues just described, it is crucial to study social policy in the digital age.

Digital bureaucracy is changing the ways in which social policies are delivered, through more efficient and streamlined processes; it is also transforming the political context and ways in which citizens engage in the process. This theoretically implied that lowering the standards for information access would empower citizens, enabling them to hold power accountable, and to be more directly involved in policy making. However, this optimism is often challenged as digital politics is never simple. Technologies can interact with current power dynamics in complex and often unpredictable ways. In a critical analysis, Chadwick & Stromer-Galley (2016) explore this question and ask if the use of digital media in governance activities contributes to "renewal" or to the deterioration of pre-existing institutional problems. They point out that the interplay between digital capacities and political power is particularly tense, frequently serving to strengthen existing power asymmetries as much as to challenge them. Thus, there is a paradox of participation. The tools used to make decision-making more democratic are often used to promote the interests of elites, especially in countries characterised by weak institutions.

This paradox reflects the fact that investments in technology cannot transform institutional weaknesses into strength; indeed, the reverse might also be true: with absent or weak ethical and legal arrangements, investments in technology could worsen institutional weaknesses. Digital governance, however, may turn into a means of control, as outlined by scholars, simply due to the zeal for modernisation. For Kitchin (2014), researchers should be critical of the power relations and values that algorithms embody in their study since algorithms are not just technical objects, but social ones as well. In a similar vein, Yeung (2017) suggests the term 'hypernudge' to clarify how big data and algorithmic governance operate as a ‘regulatory-by-design’ approach and can result in hyper-surveillance with an impact on individual autonomy. These theoretical doubts, which weigh on the trade-off between efficiency and democracy in public policy governance, raise critical issues for policymakers, requiring a delicate balance between technical capacity and the protection of civil rights.

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Indonesia is the perfect case study to dissect these special issues, especially given its mission for a digital bureaucracy, simply because of the increasingly high stakes that accompany ongoing problems of institutional integrity. Indonesia is a fast-growing democracy, a large and administered state and is trying to fast-track into the digital days even as they face endemic concerns of corruption and clientelism. The World Bank (2021) highlights that the digital economy is a great opportunity for development, but at the same time, there are many challenges that need to be addressed to realize this, including digital infrastructure, skills, and regulations; especially in Indonesia. The need for this research arises because the adoption of technology is quicker than its adaptation by institutions. As increasingly complex digital processes are put into practice by the Indonesian government, the danger of a paradox of participation is then more obvious, in which public policies are either solved or re-coded into digital systems and processes.

If these challenges are being met or just worked around by technology, a comprehensive analysis of the empirical evidence that can be produced during this time of rapid change is key. Hence this study will focus on a systematic review of the latest research literature and thus, fill this void. To achieve this, a study methodology that is called Integrative Literature Review (ILR) is used. It is a methodology that can merge various empirical and theoretical aspects to get a comprehensive understanding of the research problem (Torraco, 2005). Articles from the same databases (Scopus) published in 2021-2024 were analysed, through strict inclusion criteria and exclusion criteria for analysing the intersections between bureaucratic power, political control, and governance in Indonesia. The focus on time, reflects the rapidly increasing pace of digitalisation in the wake of the pandemic era and offers an up-to-date account of the governance challenges for public policy in the digital era.

2. Method

2.1. Integrative Literature Review

This article uses the method of Integrative Literature Review (ILR) to synthesize the existing studies on the relationships between digital bureaucracy, public participation and government in Indonesia. For the reasons listed above, the ILR approach was selected due to its capability of synthesising empirical data and theoretical literature from a variety of approaches, resulting in an all-encompassing state of the art understanding of the research problem (Torraco, 2005). In this way, the relationship among technological modernisation, participatory mechanisms and other institutional issues can be identified at a conceptual level.

2.2. Data Collection & Search Strategy

Data were collected from the Scopus Database that was considered for its high-quality peer-reviewed literature. A comprehensive search string was developed to identify articles related to bureaucratic power, political control, and political governance in the context of Indonesia so that the selected articles could be relevant and in scope of the review. The following query string was used: ("bureaucratic power" OR "bureaucracy" OR "administrative authority" OR "government control") AND ("political control" OR "political authority" OR "political power" OR "governance") AND

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PUBYEAR > 2020 AND PUBYEAR < 2025 AND (LIMIT-TO (EXACTKEYWORD, "Indonesia")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "ARTS") OR LIMIT-TO (SUBJAREA, "ECON")) AND (LIMIT-TO (LANGUAGE, "English")). The purpose of this search was to identify articles published between 2021 and 2024 that were written in English in the subject areas: Social Sciences, Arts and Humanities, Economics. The initial result of this search query was 125 documents (see Figure A1).

2.3. Inclusion and Exclusion Criteria

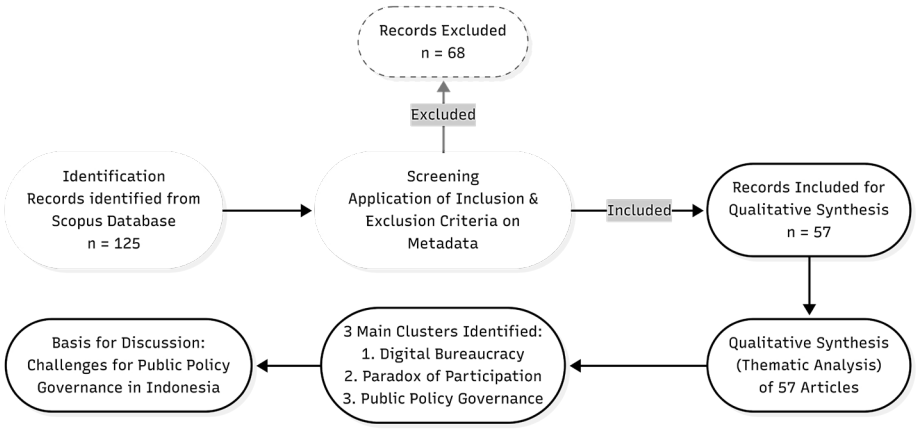
Regarding inclusion/exclusion criteria, only 125 documents were retrieved at the outset, and these had been culled by strict inclusion and exclusion criteria to create a final dataset that was relevant to public policy governance. Inclusion criteria (see Table 1) were: (1), published in peer-reviewed journals; (2), document type 'Article'; (3), published between 2021 and 2024; and (4) explicitly mentioning governance, bureaucracy, digital transformation, and/or political control in Indonesia. Exclusion criteria (see Table A1), on the other hand, excluded articles not related to the review. Papers were excluded if they were exclusively concerned with very technical subject-specific issues (e.g., environmental engineering technical aspects, health clinical studies, and agrarian technical aspects) that lacked governance or policy implication, or if they did not represent a feasible solution for the problem or give clear guidance for future policy decisions. Furthermore, articles that focused on topics other than Indonesian foreign policy, were devoted to geopolitical conflicts outside of Indonesia's administrative purview or dealt with unrelated legal doctrines, were also discarded. This screening process gave a total of 57 articles for the review.

2.4. Data Analysis and Synthesis

Thematic analysis was used to analyse the selected articles (Braun & Clarke, 2006). The key concepts, patterns and linkages of implementing digital technologies, lived experience of citizen engagement and structural barriers to governance were detailed through systematic reading of abstracts and full texts of the selected articles. An iterative coding and categorisation process produced three thematic areas as a synthesis of the literature: (1), Digital Bureaucracy, on the issue of technological modernisation, AI, and e-government; (2), Paradox of Participation, relating to civil society, accountability, and elite capture; and (3), Public Policy Governance, on the issue of public policy and public policy reforms, political economy and institutional challenges. This grouping allows a systematic dialogue on the interactions among the three aspects in making up the Indonesian policy landscape. To help illustrate the systematic selection process and the data synthesis that was undertaken a schematic flowchart was presented below:

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Figure 1: Flowchart of the Integrative Literature Review Process



Source: Author's elaboration based on Scopus data analysis.

To ensure the transparency and traceability of this process, the coding and categorisation of the 57 articles followed the five analytical phases outlined by Braun & Clarke (2006): familiarisation with the dataset, initial (open) coding, searching for candidate themes, reviewing themes against the full dataset, and defining and naming the final thematic clusters. The coding was conducted by a single researcher without the assistance of qualitative data analysis software; to preserve analytical consistency in the absence of a second coder, an audit trail of coding decisions was maintained throughout the process, and candidate themes were iteratively cross-checked against previously coded articles to ensure their consistent application across the dataset (see Table A2).

The process of review began by identifying 125 records from the Scopus database, as shown in Figure 1. After an arduous process of screening against the pre-set inclusion and exclusion criteria, 68 records were dropped as they did not meet the inclusion criteria, and 57 records were retained for the final qualitative synthesis. Thematic analysis was used for these articles and three main thematic clusters emerged: Digital Bureaucracy, Paradox of Participation, and Public Policy Governance. The clusters represent the aggregated evidence from the literature which give the analysis of the governance issues a structural basis and which are further specified in the Result section.

3. Result

The integrative literature review of the 57 selected articles revealed distinct patterns and themes regarding the intersection of technology, participation, and governance in Indonesia. Through the process of thematic analysis, the literature was synthesised into three primary thematic clusters. These clusters represent the core dimensions of the research problem: (1), the technological shift in the state apparatus; (2), the complex realities of citizen engagement; and (3), the overarching structural governance challenges. The articles meeting the inclusion criteria were categorized into the clusters below:

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Table 1: Summary of Thematic Clusters on Digital Bureaucracy and Governance in Indonesia

Cluster	Author (Year)	Description
1. Digital Bureaucracy	Aisyah et al., 2024; Aminah & Saksono, 2021; Aswar et al., 2023; Darusalam et al., 2023; Febriyanti et al., 2023; Kadarisman et al., 2022; Mazya et al., 2023; Pribadi, 2022, 2023; Pribadi et al., 2024; Saragih et al., 2023; Sudarma & Kumalawati, 2022; Yulian et al., 2024; Yusriadi et al., 2023	Focus: Modernisation, AI, E-Government, and Smart City implementation. This cluster aggregates literature discussing the technological transformation of the Indonesian state apparatus. It encompasses the adoption of Artificial Intelligence (AI) in tax administration and public services, the shift from e-government to digital government, and the development of Smart City initiatives (e.g., in Semarang). It is formed to analyse the "Digital Bureaucracy" aspect of the research title, specifically investigating the drivers, barriers (such as infrastructure gaps and bureaucratic culture), and the perceived benefits of digitalisation on governance quality and service efficiency.
2. Paradox of Participation	Bjork & Susanti, 2023; Diansari et al., 2023; Hummel & Kusumasari, 2024; Khadafi et al., 2024; Nasution et al., 2024; Purnaweni et al., 2024; Rasyadian, 2024; Rulinawaty et al., 2023; Shokheh et al., 2021; Sidik & Habibi, 2024; Sumarwan & Luke, 2024; Syukri, 2023, 2024; Zon & Andika, 2021	Focus: Civil Society, NGOs, Accountability, and Elite Capture. This cluster examines the mechanisms and realities of citizen participation, NGO involvement, and social accountability. It highlights the Paradox of Participation by revealing how participatory governance instruments (such as Village Funds, Village Laws, and collaborative forums) can be co-opted by elites (elite capture), serve state-centric interests (NGO-isation), or fail to empower marginalised groups despite formal procedures. It is critical for the research as it provides evidence of the tension between participatory ideals and the prevailing power dynamics in Indonesian governance.
3. Public Policy Governance	Al Izzati et al., 2024; Amick et al., 2022; Anwary, 2023; Astariyani et al., 2023; Eryanto et al., 2022; Fernando et al., 2024; Harakan et al., 2022; Harun et al., 2021; Haryanto & Mahsun, 2024; Hilal et al., 2024; Kadir et al., 2024; Kahar et al., 2023; Khairo & Busroh, 2023; Lewis, 2023; McLaren et al., 2023; Mudhoffir, 2023; Mukhlis et al., 2024; Musukhal et al., 2023; Newman et al., 2022; Pradana et al., 2022; Pratama et al., 2023;	Focus: Bureaucratic Reform, Political Economy, Corruption, and Institutional Frameworks. This cluster provides the macro-context of Challenges for Public Policy Governance. It covers structural issues, such as bureaucratic reform, decentralisation, fiscal policy, the influence of oligarchic and business elites in politics, and the persistence of corruption and patronage. It is formed to contextualise the environment in which digital and participatory reforms occur, illustrating how political

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	Purwanto et al., 2024; Sukoco et al., 2022; Sururi et al., 2022; Turner et al., 2022; Tutuncu & Bayraktar, 2024; Vidyattama et al., 2022; Warburton, 2024; Yunita et al., 2023	interference, power struggles, and institutional weaknesses often hinder effective governance and policy implementation in Indonesia.

Source: Author's analysis based on Scopus database (2021–2024)

3.1. Cluster 1: Digital Bureaucracy

The first cluster is literature involving the discussion of technological transformation of the Indonesian state apparatus, both in macro level aspects, namely the readiness for the state in implementing technological transformations, as well as micro level aspects in implementing technology, both in the form of Artificial Intelligence (AI) and E-Government. In macro-level perspective, the Government of Indonesia is actively moving towards Industry 4.0 and Society 5.0, which Kadarisman et al. (2022) believe requires a strategic approach and the entrepreneurial in governance. Transition to e-government presents several challenges in Indonesia, widely discussed by Aminah & Saksono (2021) that leave e-government in Indonesia relatively slow and less advanced than the other countries of ASEAN, where the main problems are the lack of regulations, data integration and infrastructure that is inconsistent. With these concerns and challenges overcome, technology is still making progress and Yusriadi et al. (2023) provide a thorough summary, highlighting how institutions globally are applying AI in various fields with the aim of enhancing public services.

Organizational conditions and applications in different sector play crucial roles in the effectiveness of digital implementation. For example, Aisyah et al. (2024) show the use of smart technologies by local governments (e.g., in Semarang) to create a smart city to achieve sustainable development, while Saragih et al. (2023) discuss the possibility of AI in modernising the tax administration system for better effectiveness and promoting tax compliance and tax justice. On internal aspect, Pribadi (2023) shows that organisational structure and organisational culture have a significant effect in predicting success in implementing e-government, while the rest of the indicators have insignificant effects, whereas Pribadi (2022) argues that in order to predict employees' intentions in implementing e-planning based on the theory of planned behavior, it is necessary to carry out organisational transformation. A more recent study by Pribadi et al. (2024) confirms that budgeting and bureaucratic structure were insignificant while transparency, accountability, leadership and infrastructure of information and communication technology (ICT) were found to be significant variables in implementing service delivery in the digital government. Also, ICT has been changing operations in certain aspects. Febriyanti et al. (2023) provides an example of digitally measuring the performance of the government employees in the city of Palembang and Yulian et al. (2024) argue that online bureaucratic services play a crucial supporting role to speed up urban development.

Technology developments are also changing the ways that the public interact with and hold accountable their government, and the accessibility of that public to government. The growth of digital

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bureaucracy is also changing their relationship with the public, in terms of how they hold it accountable, how they interact with it and whether it is accessible to them. Mazya et al. (2023) explore how the digitalisation of public services in forest communities has been creating digital excitement and sparked the creation of an online community, called a Neue Gemeinschaft (digitally-based community). In the same way, Aswar et al. (2023) determine that the system quality, information quality, and service quality are some of the factors that affect the positive acceptance use of e-government by Indonesian citizens. For good governance in this digital environment, it is necessary to take professional audit risk considerations into account to establish SMART governance, Sudarma & Kumalawati (2022) recommends. Though, according to, Darusalam et al. (2023) digitalisation in general will increase the quality of governance as it allows for increased transparency and better service delivery. The mere availability of digital channels does not automatically equate to genuine empowerment or effective oversight. While these technological advancements provide the means for participation, the subsequent literature reveals a complex tension where these digital and bureaucratic tools often intersect with power dynamics, raising questions about who truly benefits from these modernised systems? A theme central to the paradoxes discussed in the following cluster.

3.2. Cluster 2: Paradox of Participation

New opportunities for citizen engagement covered in the previous cluster, but not necessarily to address the more fundamental engagement and power structural challenges. Paradox of Participation is the second cluster, which investigates the actual functioning of participative governance, highlighting the paradox of formal inclusion versus real influence. These projects seem to have left the marginalised at the margins while, paradoxically, they often give legitimacy to the state-centric agendas of elites.

One of the key discourses in the cluster, concerns the active appropriation of participatory spaces, and these dynamics of co-optation manifest differently depending on governance level: in rural settings, elite capture is mediated primarily through control over village-level funding mechanisms and traditional authority structures, whereas in urban and national settings it operates through the opacity of digital administrative platforms themselves. At the village level, Sidik & Habibi (2024) have found that though high-level governance policies are implemented, the policy of the Village Fund is frequently seen as a prize won by the village ruling class and not poverty reduction for the village poor. In the same sense, Syukri (2024) describes that the Participatory Village Governance policy, despite being formalized into policy, safeguards the interests of the centralistic New Developmental regime rather than the villagers' interests. As also observed by Syukri (2023) that says it disregards sensitive village issues, such as the change of traditional gender structures. These rural cases share a common structural driver: participatory mechanisms remain contingent on physical infrastructure and digital literacy gaps that limit villagers' capacity to monitor fund allocation directly (Fiestiandani et al., 2026).

Beyond the rural context, elite capture in urban and national-level participatory platforms tends to operate through a different mechanism: not the physical or literacy barriers seen in villages, but the opacity of the digital and institutional infrastructure itself, where formal oversight is nominally present yet substantively difficult to exercise (Das et al, 2026). Rasyadian (2024) presents on the

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(non)governing machine, where NGOisation allows the spread of this form of surveillance under the cover of grassroots activism, while Bjork & Susanti (2023) show how community involvement can enhance teacher accountability but must be designed to fit the local context, not merely lifted from one setting to another.

The literature also delves into the multi-faceted and paradoxical nature of accountability, transparency, and the best ways of civil society organisations to maneuver through these dilemmas. Whereas Zon & Andika (2021) point to positive developments where the international standards, such as those drafted by GOPAC, have enforced Indonesia to shift towards an Open Parliament, in the sense of rebuilding confidence and trust; however, there are some issues in information disclosure. The findings indicated that lack of transparency in COVID-19 data, as pointed by Khadafi et al. (2024) or, communities are often at a disadvantage to push for social accountability measures when it comes to environmental management issues as reported by Purnaweni et al. (2024). Hummel & Kusumasari (2024) highlight that partnership with the government is not the only condition in which NGO can contribute to the democratisation and reduction of poverty, as long as the organisation remains independent, as are some NGO-CBOs in Indonesia (Shokheh et al., 2021; Rulinawaty et al., 2023). Further, Nasution et al. (2024) and Diansari et al. (2023) indicate that good communication and prosocial behavior of the officials are a crucial condition for accountability, while Sumarwan & Luke (2024) suggest the need for a circle of accountability for continuous accountability.

The paradoxes of participation need to be understood in the context of the essential institutional and political structure within which they work. These structural issues with the governance of public policies are further illustrated by the capacity of elites to trickle down participatory funding, the enlistment of NGOs and the lack of consistency in transparency practices. With these considerations in mind, one of the important things concerns the reasons why participation fails to realise the promises it carries, namely, the rules of the game. Hence the examination of the wider political economy, bureaucratic reforms and governance challenges concerning the rules of the game is the last cluster under review.

3.3. Cluster 3: Public Policy Governance

This cluster aims to situate mechanisms in the broader institutional and political context, as participatory mechanisms are in many situations influenced by the power relation of actors. The literature here shifts its focus from specific attention to digital technologies or participatory forums to broader attention to the multiple challenges of bureaucratic reform, political economy, and institutional integrity. It asserts that the identified paradoxes above are not anomalies but are an indicator of a deeper governance issue that exists in the system and has not been solved in spite of decades of reform.

Much of the literature emphasizes the continuing challenges to state's institutional performance and the size of Indonesia's bureaucracy. Turner et al. (2022) and Mudhoffir (2023) offer a critical perspective of these transformations, highlighting that attempts to transform a public service into a world class public service are often weakened by resistance to change in both the public service and the political system, which inhibit such reform. There are also specific structural problems highlighted, such as the reversion of the fiscal decentralisation law to the central authority discussed by

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Lewis (2023) the requirement for improved rules and mechanisms of regulatory reform discussed by Astariyani et al. (2023), and the uncertainty of power dynamics between parliamentary and presidential systems discussed by Mukhlis et al. (2024). In terms of operation, Kadir et al. (2024) relate the career trajectory to organisational performance and Kahar et al. (2023) with Pratama et al. (2023) call attention to the need for auditing and integrated reporting for accountability purposes. Moreover, Newman et al. (2022)'s work on policy analytical capacity brings policy closer to the West, Pradana et al. (2022)'s work challenges the critical factors affecting the continuity of innovation in the field of policies and politics, Musukhal et al. (2023)'s work of questioning the level of accountability in policy-based agency reform, and Anwary (2023)'s work of questioning the need for better coordination of public administration and judicial systems during the policy implementation process.

The mass of documentation from the cluster explores in depth the complex dynamics and linkages between politics, business and corruption parallels and bureaucratic issues, which underlie policy outcomes. Business politicians and the survival of oligarchy and patrimonialism are both explored in the works of Warburton (2024) and Haryanto & Mahsun (2024), which examine how private power is merged with a public function. This merger can result in poor governance outcomes, as noted in the case of Eryanto et al. (2022) about the impact on ethical leadership of political interference, and of Vidyattama et al. (2022)about the correlation of budget delays and poor political bargaining. This instrumentalisation of law and power is also seen in the controversial practices in post-reform democracy as described in the paper by Fernando et al. (2024), and in the paper by Amick et al. (2022), which details the timing of corruption charges against election-capable officials. Sururi et al. (2022) question the use of New Public Management (NPM) for housing policy, and Yunita et al. (2023) analyse the legibility of development in the eyes of global capital through innovative financing, which sometimes serves to ignore local needs.

The cluster also includes specific institutional contexts, and implications for trust and democracy more broadly. Al Izzati et al. (2024) conclude that in general, direct elections enhance the trust in institutions, but not if they are written in hostile terms. Tutuncu & Bayraktar (2024) interpret the macro-economic implications of democracy and corruption paradoxes. In the legal field, Hilal et al. (2024) state the importance of Human Resource (HR) transformation in judging, Khairo & Busroh (2023) explain issues with implementation of State Administrative Jurisdiction, and McLaren et al. (2023) discuss the limitations faced by women in the field of civil service. Purwanto et al. (2024) provide a comparison analysis of evaluations conducted in school, Sukoco et al. (2022) discuss organisational change in universities while Harakan et al. (2022) discuss opportunities for local government investment paradiplomacy. Ultimately, it is clear from this body of work that the issues of digital bureaucracy and participatory governance cannot be solved as if on their own. They are all enmeshed in the broader ones of political leadership, institutional checks and balances, and the continued fight against entrenched elites.

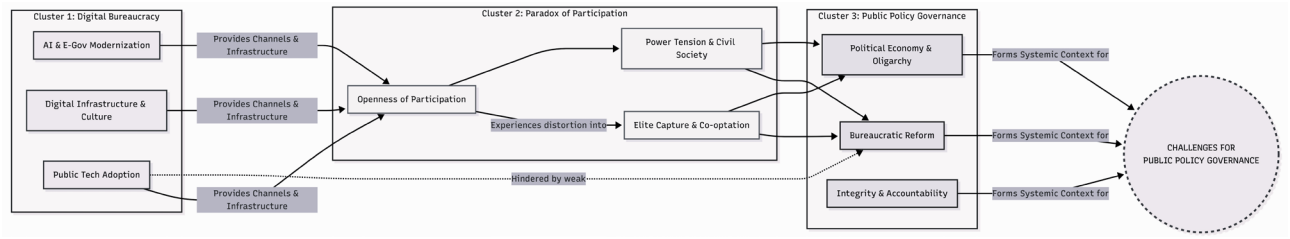
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4. Discussion

4.1. The Nexus of Digital Transformation, Participatory Paradoxes, and Public Policy Governance Challenges

Based on the discussion of the three clusters before, the themes do not exist in isolation from each other, but rather that strong interconnections exist between them in the Indonesian environment. Digital technologies are said to be used to help facilitate governance, but also to open fresh avenues for political contestation in literature. In addition, the process of citizen involvement is conceived to make policies a democratic process but is often undermined by existing power dynamics. A conceptual linkage model is presented below to illustrate, on a systemic level, how these variables are related to one another and how they all take part in the issues of public policy governance.

Figure 2: The Linkage between Digital Bureaucracy, Paradox of Participation, and Public Policy Governance Challenges



Source: Author's analysis based on selected literature.

As shown in figure 2, there is a sequential and causal relationship among three key clusters. The flow starts with Cluster 1, Digital Bureaucracy which stands for the technological basis of the modern state. This change means a move from the concept of New Public Management (NPM) of governments to Digital Era Governance (DEG), which is defined by disintermediation and integration, as stated by Dunleavy et al. (2006). Based on what has been identified by Yusriadi et al. (2023) and Aisyah et al. (2024), the use of AI, E-Government and Smart City is the infrastructure and switch provided for communications between the State and the citizens. This digital layer is supposed to help to minimize the bureaucracy and improve transparency. The number, however, points to the technological capacity that is directly fed into Cluster 2, Paradox of Participation.

Notice how this linkage between Cluster 1, and Cluster 2, demonstrates inequities in both access to and participation in digital tools. Rather, a new field arises in the form of a digital space where the Paradox of Participation operates. Theoretical lessons on participation, however, warn against expecting new channels to necessarily empower citizens. Cooke (2004) has rightly challenged the tyranny of participation, for that is the problem at times when participatory approaches are used in the exercise of legitimation instead of empowerment and are often masking power imbalances. In the Indonesian context, it has been proven by Sidik & Habibi (2024) and Syukri (2024), that the platform is often easily captured and co-opted by the elites, including in the case of digital and participatory platforms (e.g. Village Fund management). The Openness of Participation that happens with

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the use of digital tools becomes Elite Capture, in which the process of governorship is participatory while the content is still ruled by the elite.

The problems and paradoxes of cluster 2, therefore, are not only functional issues, but signs of more fundamental structural problems represented by cluster 3, (Public Policy Governance). Figure 3 indicates that an overall institutional environment influences the distortions in participation, represented in the arrows with the double arrows between the boxes of Paradox of Participation and Political Economy and Oligarchy and Bureaucratic Reform. Based on the Institutional Theory, North (1990) argues that rules of the game defined by institutions, shape the incentives of political and economic players. According to Warburton (2024) and Haryanto & Mahsun (2024) patrimonialism and oligarchy still affect the rules of the game in Indonesia. Thus, the digital tools (Cluster 1), and participatory forums (Cluster 2), are ultimately bound to it. The figure ends in Challenges for Public Policy Governance, indicating that only when addressing the root causes of political economy, bureaucracy and accountability (Cluster 3), the potential of digital bureaucracy and genuine participation can be realized. This synthesis shows that technology is not and never can be a magic bullet but rather an amplifying factor of existing institutional realities.

4.2. The Persistence of Patrimonialism in the Digital Age

The process of creating a functional nexus between the digital infrastructure and participatory paradoxes is illustrated in the previous section, but it does not fully explain the institutional resilience of power structures that limit that nexus. The results indicate that the new political culture of digital bureaucracy (Cluster 1), and the institutional arrangements for participation, (Cluster 2), have not superseded the existing political culture of patrimonialism. Rather, the data suggests that the technological modernisation has only been an assimilation of such antiquated practices and, in some instances, a re-affirmation of them. This testament to patrimonial logic in a contemporary techno-political context represents a conceptual obstacle to Public Policy Governance (Cluster 3), making it clear that in Indonesia mere technological introduction is not enough, the personalist networks that remain entrenched in the state apparatus need to be confronted.

The resilience does not fit into the model of Legal-Rational Authority which Weber et al. (1978) conceived of as a governance model where governance is based on impersonal rules and technical expertise. The Indonesian case can be considered as a typical example of Fukuyama's (2014) theory of political decay which explains that the decay of state institutions is caused by re-patrimonialisation, appropriation of state resources through private means and political patronage. By examining the forces driving the rise of personalised rule in states globally, especially during crisis periods like the COVID-19 pandemic, Hanson & Kopstein (2022) stand out as a significant report, revealing a wider governance shift toward personalism and the backsliding of states into underpinned rule. The need for quick response in these settings frequently transcends bureaucratic procedures and enables patrimonial networks to consolidate their control over the digital means of power.

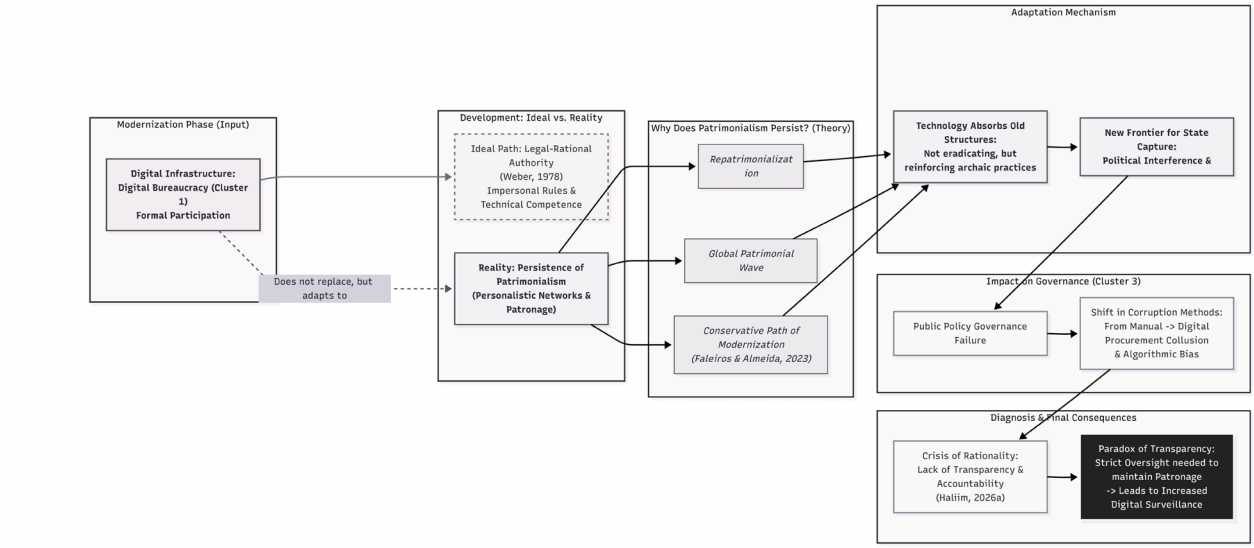
The change of patrimonialism in the digital age is also brought out in Faleiros & Almeida (2023). When modernisation is carried out usually it will proceed on a conservative course that will absorb and reinforce the patrimonial structures instead of abolishing them. In line with Bruhns (2013), that patrimonialism is not a primitive form of development that must be outgrown, but a form of living

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in a political world that could be passed over from one level of structural complexity to another. The digital infrastructure, which was designed to make it quicker, easier and more convenient is thus, a new battleground for capture by the State. These strategic leaders position political influence, as studied by Cluster 3 (Eryanto et al., 2022) and over fusion of power between business and politics seen in the growth of business politicians (Warburton, 2024) is empirical evidence of this adaptation. Collins (2011) offers a convincing historical analogy, in that such a situation where the state was not completely present in society, opened the space for criminal networks and patrimonial alliances that are similar to those seen in the current management of Indonesia.

The impact that results from this persistence is great on the policy trajectory. Without this culture change, the prognosis should be it won't be a one-for-one effect of digitalisation, meaning no less corruption, but just a change in methods. Some of the corrupt methods that were manual are now replaced with the more complicated digital collusion and algorithmic bias: the technical efficiency canceling the moral inefficiency. As indicated by Haliim (2026b), who argues that governance collapses fundamentally due to a lack of transparency, accountability, and depoliticised allocation because of rationality crisis.

Figure 3: The Dynamics of Patrimonialism Persistence and the Crisis of Rationality in the Digital Age



Source: Author's analysis based on selected literature.

The empirical findings reveal that the sort of rationality needed to serve the public good is in trouble, and beset by personalistic interests. But a mechanism of oversight and control would also need to be more effective and robust to preserve these systems of patronage, which inevitably brings about the paradoxes of transparency and digitalization or surveillance, examined in the next section.

4.3. Legibility, Control, and the Paradox of Transparency

As patrimonialism is a lasting feature of the past in the context outlined in the previous section, specific mechanisms are needed to keep the political elites in charge of the state and the people. It is

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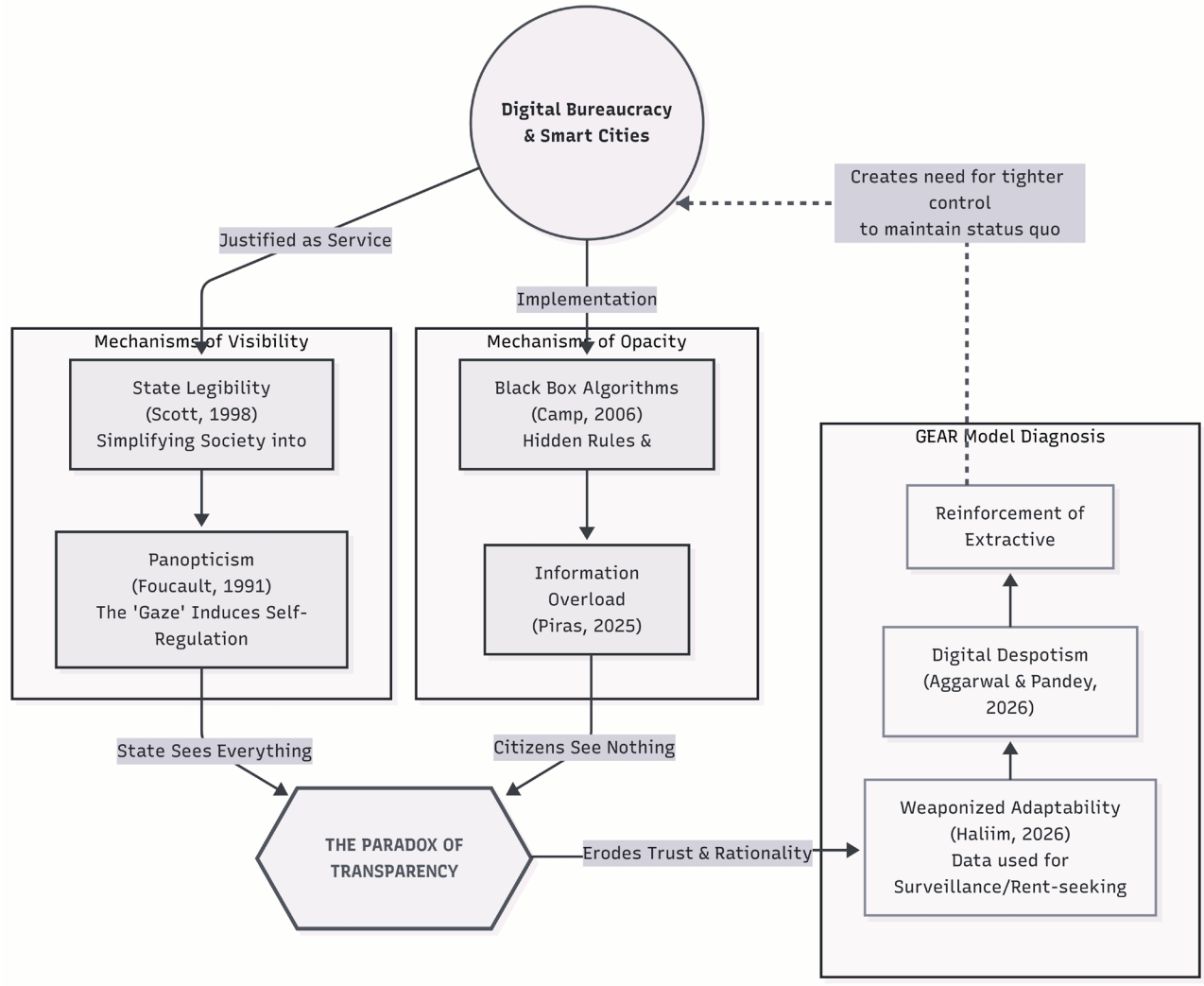
this dominance which is now being realised, increasingly, by making a comprehensive collection of data and by analysing that data, changing the capability of the state to observe and to manage society, in the digital age. The apparent public good of Digital Bureaucracy (Cluster 1), is to improve service delivery and transparency, but there is a deeper story. Digital tools are often used to centralise control and thus, to obscure accountability as well. The technological infrastructure, which is supposed to empower, seems to be vulnerable to being a highly developed surveillance tool, posing the question of how it can simultaneously be more digital and more opaque of the state.

The theoretical context of this phenomenon can be found in the theories of legibility developed by Scott's (2020), who states that state reduces the complex social reality into standardised data to make society readable and governable. The drive for "Smart Cities" and integrated databases does this in the Indonesian context. But the visibility creates a power imbalance, which is in line with Foucault's et al. (1991) concepts of governmentality and panopticism: citizens are self-regulating due to the mere possibility of being observed. The dark side of this visibility has been recently emphasised by scholarship. Shovkovyy (2024) proposes the new term, e-bureaucratism, suggesting that the digital transformation process may have shifted the inefficiency of bureaucracy into the current complex online systems, resulting in a new layer of frustration and opacity. Additionally, there is a significant issue of the transparency of the digital infrastructure. Yet both Camp (2006) and Næsborg Anderse (2019) point out how difficult it would be to achieve transparency in the application of governmental processes when these processes are contained within black box algorithms and closed software, and how likely it is that people would be able to contest the rules such processes follow in their application, or even understand them.

Such a paradox that emerges in the way of governance, and the rhetoric of transparency is counterbalanced by the reality of control. When lots of data doesn't equal public understanding, Piras (2025) calls this 'information overload' I.e. having more information than necessary that makes it harder to understand the state's action. The overwhelming quantity of administrative data can allow citizens to be passive instead of empowered, not knowing how to understand the functioning of power in their lives. The algorithmic gaze that Aggarwal & Pandey (2026) describe, further adds to this, as the algorithmic gaze is a new type of trust that is being built by algorithmic management, a replacement for human trust, and a justification for intrusive surveillance and the loss of autonomy. The digital state is therefore, everywhere, but the citizens are nowhere in the state's decision-making logic, which is another paradox of transparency, whereby the traditional patrimonial-like operations, which are exposed by the last section, are hidden behind the veil of technology.

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Figure 4: The Feedback Loop of Digital Legibility, Opacity, and the Paradox of Transparency.



Source: Author's analysis based on selected literature.

The rationality and adaptability components of GEAR Model give a lens to diagnose the condition, in terms of a critical tension in the governance framework (Haliim, 2026b, 2026a). When institutional protection is lacking, it transforms into a tool of control, it suggests. The data that should enable responsive governance (adaptability) is in fact used for weaponisation, for surveillance, for rent-seeking, and without rationality for transparent accountability. This process results in a vicious cycle in which digital control tools are applied to maintain a status quo, thus keeping governance benefits centred within the ruling class. This digital enclosure therefore, not only limits civic freedoms but also, directly, reinforces the extractive character of institutions, which is what will be discussed in the next section, resulting in the systemic marginalisation and exclusion of vulnerable groups from participation in politics.

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4.4. Extractive Institutions and the Failure of Inclusive Participation

The previous section explored the double-sided nature of a transparency and digital surveillance which not only monitors the population but also reinforces the dominance of certain groups and systematically marginalises the rest of the population from the decision-making process. This is not a coincidence, but a structural one, a deliberate one to maintain power dynamics as they are. Failure to participate (Cluster 2), is therefore, not simply a lack of civic engagement, but a direct result of an institutional system that is set up to serve the few, and not the many. Given the ever-expanding number of digital platforms and participatory forums, this study indicates that the institutions that govern them are fundamentally extractive, moving modernisation and public resources to a small elite while leaving the majority behind.

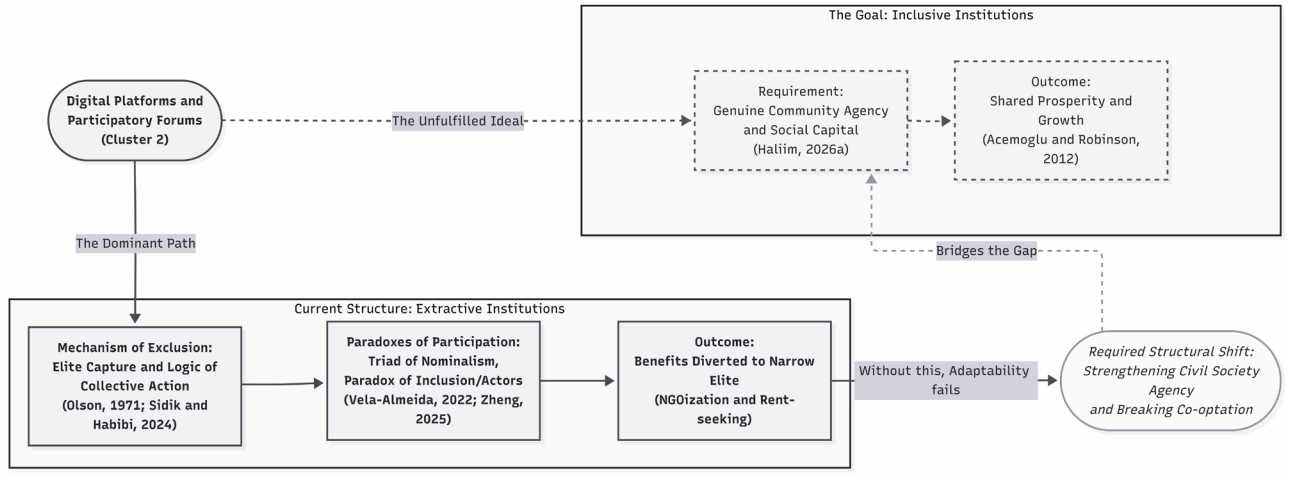
The inclusive vs. extractive institutions model of Acemoglu & Robinson (2013) is the best model to explain this dynamic. They suggest that inclusive institutions create shared prosperity and extractive institutions reengineered by elites to extract resources from the rest of society. This research can provide evidence of the dominance of extractive institutions in local democratic institutions in Indonesia, including the Village Funds research of Sidik & Habibi (2024) and the research on NGOization by Rasyadian (2024). The results are consistent with Olson's Jr (1971) Logic of Collective Action, which holds that small, organized elite groups can win greater and more reliable benefits for themselves than can the dispersed masses of people, who can never be relied upon to organize for collective benefits. As a result, all new social and public policies, digital or otherwise, could be captured and co-opted by these elites, and participatory processes would become tools of legitimiziation.

These exclusions are further explained by the apparent paradoxes of participatory governance in the present day, which highlight the extractive nature of the state. In the face of formal participatory mechanisms, Vela-Almeida et al. (2022) set out with a triad of participation, distinguishing between nominal and genuine participation in decision-making, and demonstrate that state stewardship of strategic resources is not under challenge. Likewise, Zheng (2025) has pointed to the paradox of inclusion, that exclusion is built into the very existence of a project while simultaneously being claimed to be inclusive; and that participation can become an instrument of governmentality instead of a counterweight. There is a paradox of actors in addition. The more actors in the governance bodies, but the less influence of traditional actors and the less local communities that are genuinely represented, leading to an extension of the digital and economic divide (Suárez de Vivero et al., 2008).

Without the second key component of community agency and social capital, as Haliim (2026b) has so eloquently described, policies risking serving only the elite. The empirical evidence presented here agrees with this: If the empowerment is not genuine, digital tools and participative platforms can be easily used by extractive elites. The way forward is thus a shift from extractive to inclusive institutions, which will need a strengthening of the agency of civil society and those groups of the marginalised identified in the literature. If this doesn't occur, the promise of adaptability and growth which digital transformation offers to the rest of the population will never be realized.

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Figure 5: The Divergence of Digital Participation: Extractive Reality versus Inclusive Goals.



Source: Author's analysis based on selected literature.

4.5. Citizen Agency and the Limits of Elite Capture

The preceding sections have concentrated on the structural forces (patrimonialism, opacity, and extractive institutions) that constrain the democratic potential of digital bureaucracy. This emphasis should not be read as implying that Indonesian citizens are simply passive subjects of elite control. Within the reviewed literature itself, Bjork & Susanti (2023) show that community participation can strengthen teacher accountability at the local level, provided that participatory mechanisms are deliberately adapted to a local context rather than imported wholesale from elsewhere, a finding that points to a real, if conditional, space for citizen agency within existing institutional constraints.

This space for agency is arguably even more visible outside the boundaries of the present corpus, in the domain of digital citizen mobilisation. Indonesian civil society has repeatedly used social media platforms to pressure state institutions towards greater transparency and accountability, independent of formal participatory channels. The #IndonesiaGelap (Dark Indonesia) mobilisation of 2025, for instance, saw citizens use a shared hashtag on X to organise rejection of, and criticism directed at, welfare and budget policies perceived as harmful to the public, explicitly demanding transparency and accountability from political elites (Susilowati et al., 2026). Similar dynamics recur across other Indonesian hashtag movements addressing corruption, public administration, and government accountability more broadly, suggesting a recurring repertoire of contentious digital action that operates outside, and sometimes in direct response to, the very institutions and platforms examined in Clusters 1 and 2 of this review.

These instances of digital contention do not overturn the paradox of participation identified in this study; formal, state-sanctioned participatory platforms remain vulnerable to elite capture, as the literature reviewed above demonstrates. However, they do indicate that digital technologies are not deterministically confined to reinforcing existing power asymmetries. Citizens retain, and periodically exercise, the capacity to repurpose digital tools for contentious, bottom-up accountability

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claims that formal channels do not accommodate. Read together, the findings therefore, point towards a more conditional conclusion than a purely structural reading would suggest: the fate of digital participation in Indonesia depends not only on whether institutions are extractive or inclusive, but also on whether citizens are able to convert digital access into autonomous collective action outside institutional channels, a dynamic that existing TAM-adjacent and institutionalist frameworks alike have yet to adequately theorise, and that future research, including primary studies of digital contention in the Indonesian context, should further examine.

The synthesis of results and discussion shows that the Digital Bureaucracy and Paradox of Participation are not only administrative issues but are also considered an important factor in the development of Challenges for Public Policy Governance in Indonesia, a dynamic shaped as much by the structural persistence of extractive institutions as by the conditional, ongoing capacity of citizens to exercise agency through digital means. Academic significance of this research is the integrative approach that brings together the study of technology and political economy. It shows that digitalisation does not necessarily translate into deepening democracy if there is no institutional integrity, and digital technologies can, in fact, help to enable new forms of elite capture and surveillance. This study sheds critical light on digital mechanisms, participatory failures, and patrimonial resilience to suggest that good governance reform should not neglect institutional integrity and inclusive empowerment but focus on them alongside technical improvements. This is a critical contribution to the study of public policy, and a warning against a technocratic illusion, namely that addressing profound political and structural inequities can be achieved solely through technological solutions.

5. Conclusion

This study is a systematic review of 57 articles found in Scopus, from 2021 to 2024, to explain the complicated relationship between digital bureaucracy and participatory governance in the context of public policies in Indonesia. The synthesis shows that the government's ambitious work on digital modernisation has not necessarily been accompanied by an increase in democratic participation and transparency in institutions in Indonesia. The engagement infrastructure of digital bureaucracy and the paradox of participation reveal a pressing disconnect, in which digital platforms and forums for participation are often taken over by patrimonial networks and extractive institutions. The analysis emphasizes that the introduction of technology is not enough, because it does not address deeper structural problems of elite capture, political meddling, and corruption. Hence, the fact that these challenges for public policy governance are persistent, poses a risk for Indonesia's development in the future, where citizens are merely data objects, without being able to play their role as political subjects.

This research has certain limitations. This study, as an Integrative Literature Review (ILR), only uses secondary data from published literature from Scopus-indexed peer-reviewed journals, thereby omitting relevant points that may be found in gray literature, local-language literature, or non-indexed literature that provides a grounded local perspective. In addition, the analysis is restricted to articles from 2021–2024, which allows for the focus on the post-pandemic launch of digitization, but may exclude longer-term trends or the latest developments. Relatedly, because Scopus-indexed

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peer-reviewed journals tend to favour the publication of critical findings and accounts of policy failure over reports of modest, localized successes (Esarey & Wu, 2016), the literature underlying this review is likely skewed towards narratives of governance failure; this selection tendency should be taken into account when interpreting the generalisability of the study's findings, rather than reading them as an exhaustive verdict on the overall trajectory of digital bureaucracy in Indonesia. Moreover, the ILR methodology does not allow the causal relationships proposed in the theoretical framework to be empirically tested, thus, the logical relationships between patrimonialism and digital surveillance, and between digital surveillance and extractive institutions, remain conceptual propositions requiring further testing in the field, through primary studies or case studies.

Although the study has some drawbacks, it still has some academic and practical value. It goes against the technocratic myth that technology is the ultimate solution to governance problems and further highlights the institutional integrity that should remain first. This study is motivated by the failure of public policy in Indonesia when it comes to good governance in the digital space, to be found in the backlash of Indonesia's massive investment in digital technology in public policy. The results yield important insights for policy makers and academics: an adequate and simultaneous effort to tackle patrimonialism and provide truly inclusive institutions is essential if digital bureaucracy is to improve rather than worsen the democratic deficits in the Indonesian state. This contribution is crucial for designing future research and policy towards a model of governance which not only aims for technological progress but also for human empowerment and institutional rationality.

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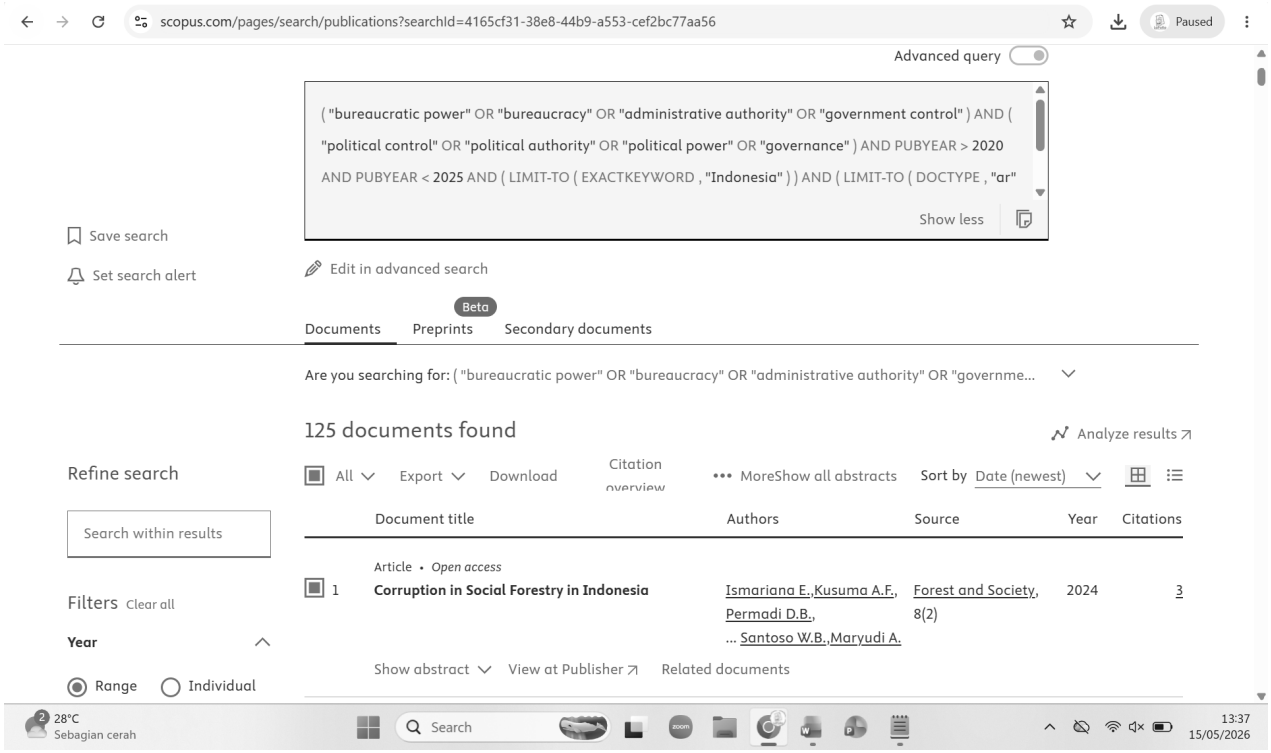
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Appendix

Figure A1: Scopus Search Results Displaying Initial Document Retrieval (N=125)



Source: Scopus Database. Accessed on May 15, 2026.

Table A1: Exclusion Metadata

No	Author, Year	Reason for Exclusion
1	Lund, Christian (2023)	Too focused on agrarian conflict and legal pluralism (doi: 10.1080/03066150.2022.2096448)
2	Salama, Nadiatus and Chikudate, Nobuyuki (2023)	Focuses on global corporate corruption, less relevant to digital governance (doi: 10.1108/SRJ-06-2021-0232)
3	Grzywacz, Anna and Gawrycki, Marcin Florian (2021)	More related to geopolitics and foreign policy (doi: 10.1080/01436597.2021.1960159)
4	DePuy, Walker (2023)	Environmental governance topic is too specific (doi: 10.1016/j.worlddev.2022.106181)
5	Anele, Kalu Kingsley (2022)	Constitutional law focus, not related to digital governance (doi: 10.19184/ejlh.v9i1.28417)
6	Anderl, Felix (2024)	Political history and agrarian politics focus (doi: 10.3828/whpge.63837646622482)

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7	Do, Trong Hoan and van Noordwijk, Meine (2023)	Forestry governance is too technical and sector-specific (doi: 10.1016/j.cosust.2023.101330)
8	Lai, Jia Yen et al. (2021)	Focuses on EIA and environmental justice norms (doi: 10.1016/j.landusepol.2020.105234)
9	Dharmawan et al. (2021)	Palm oil sustainability and compliance focus (doi: 10.3390/su13052611)
10	Alta, Aditya and Mukhtarov, Farhad (2022)	Insufficiently connected to digital governance (doi: 10.1177/00953997211073527)
11	Mangkunegara et al. (2024)	Social forestry topic is too sectoral (doi: 10.19184/jseahr.v8i2.52858)
12	Nuzulman et al. (2023)	Macro political-economy focus (https://www.scopus.com/pages/publications/85172684531?origin=resultslist)
13	Susilawati, Depi and Kanowski, Peter J. (2022)	Forestry legality governance focus (doi: 10.1016/j.envsci.2022.09.009)
14	Adiyoso, Wignyo (2022)	Crisis management topic is too specific (doi: 10.1177/21582440211071101)
15	Faxon et al. (2022)	Spatial governance topic is too technical (doi: 10.1016/j.polgeo.2022.102651)
16	Ismariana et al. (2024)	Social forestry corruption topic is too sector-specific (doi: 10.24259/fs.v8i2.34782)
17	Karim et al. (2023)	Focuses on foreign policy and China (doi: 10.1080/03932729.2023.2235140)
18	Shvarts et al. (2024)	ESG and global environmental regulation focus (doi: 10.1134/S2079970524600549)
19	McDermott et al. (2023)	Land-use governance is too specific (doi: 10.1002/eet.2027)
20	Clark, Sal (2023)	Refugee politics topic (doi: 10.1016/j.polgeo.2023.102940)
21	Fatem et al. (2023)	Conservation and indigeneity focus (doi: 10.24259/fs.v7i2.27420)
22	Blesia et al. (2023)	Mining and indigenous relations focus (doi: 10.1016/j.resourpol.2022.103202)
23	Lee, Zhe Yu (2022)	Agrarian reform topic is too sector-specific (doi: 10.1177/23996544221094912)
24	Riggs et al. (2021)	Landscape sustainability focus (doi: 10.1007/s10980-021-01255-1)
25	Sahide et al. (2023)	Environmental co-production governance focus (doi: 10.1111/dpr.12693)
26	Daulay et al. (2023)	Forest management units topic (doi: 10.24259/fs.v7i1.23962)
27	Maryudi et al. (2022)	Fragmentation in social forestry governance (doi: 10.1016/j.envsci.2021.11.013)
28	Halimatusa'Diyah, Iim (2022)	Maternal mortality and health governance focus (doi: 10.1525/sod.2020.0030)
29	Rahayu et al. (2024)	Local government and social forestry focus (doi: 10.24259/fs.v8i1.28524)
30	Warner, Jeroen Frank and Wiegel, Hanne (2021)	Climate adaptation topic is too specific (doi: 10.3390/su13169160)
31	Saptono et al. (2023)	Islamic tax compliance topic is too niche (doi: 10.32350/jitc.131.08)

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32	Beleli, Ozsel (2022)	Focuses on global policy diffusion by international organizations (doi: 10.1177/14680181211012975)
33	Nurferyanto, Dwi and Takahashi, Yoshi (2024)	Tax criminal law focus (doi: 10.3390/laws13030029)
34	Kharlie et al. (2021)	Islamic marriage administration topic (doi: 10.14421/ajis.2021.592.255-286)
35	Choiruzzad et al. (2021)	ISPO and palm oil governance focus (doi: 10.1007/s10308-020-00593-0)
36	Kusuma et al. (2023)	Social forestry implementation topic (doi: 10.24259/fs.v7i2.28319)
37	Ekawati et al. (2024)	Zero-burning environmental policy focus (doi: 10.24259/fs.v8i2.32262)
38	Brandi, Clara (2021)	Palm oil sustainability standards focus (doi: 10.1057/s41287-020-00306-8)
39	Hendrastiti et al. (2024)	Gendered conservation governance topic (doi: 10.24259/fs.v8i1.28312)
40	Jaffrey, Sana (2023)	Vigilantism and political violence focus (doi: 10.5129/001041523X16645492774955)
41	Mujetahid et al. (2023)	Conservation enclosure topic (doi: 10.1007/s10745-023-00421-0)
42	Limpo et al. (2022)	Indigenous agricultural knowledge focus (doi: 10.3390/su14052952)
43	Khusaini et al. (2024)	Mining and water management topic (doi: 10.3390/w16172536)
44	Ramadhan et al. (2023)	Forest decentralization focus (doi: 10.1505/146554823836838673)
45	Nygren, Anja and Lounela, Anu (2023)	Wetland political ecology topic (https://www.scopus.com/pages/publications/85150920471?origin=resultslist)
46	Sopaheluwakan et al. (2023)	Customary forest rights focus (doi: 10.1016/j.forpol.2023.102951)
47	Susilawati, D. and Kanowski, P.J. (2021)	Timber legality verification topic (doi: 10.1505/146554821833992839)
48	Li, Tania Murray (2021)	Land reform assemblage focus (doi: 10.1080/03066150.2021.1890718)
49	Jaffrey, Sana (2021)	Vigilantism and populism topic is too focused on political violence (doi: 10.1007/s12116-021-09336-7)
50	Adianto et al. (2021)	Housing governance topic is too micro-level (doi: 10.1007/s10901-020-09785-x)
51	Anguelov, Dimitar (2023)	Focuses on urban infrastructure finance (doi: 10.1177/0308518X221135823)
52	Abdullah et al. (2024)	Indigenous forest recognition topic (doi: 10.24259/fs.v8i2.34423)
53	Ayyasy, Muhammad Nur Ihsan and Herdiansyah, Herdis (2023)	Civil-military watershed restoration focus (doi: 10.36868/IJCS.2023.03.05)
54	Hasniati, Hasniati (2022)	Learning from home policy topic (doi: 10.24294/jipd.v6i2.1495)
55	Newberry, Jan (2024)	Early childhood expertise topic (doi: 10.1177/14782103241281001)
56	Gilbert, David E. (2023)	Agrarian protest focus (doi: 10.1111/anti.12910)
57	Ramadhan et al. (2023)	Social forestry transformation topic (doi: 10.1505/146554823836838673)

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58	Davidson, Jamie S. (2021)	Infrastructure and political economy focus (doi: 10.1080/09692290.2019.1668461)
59	Veriasa et al. (2024)	RSPO certification topic (doi: 10.24259/fs.v8i1.26964)
60	Hutagalung et al. (2023)	Gas market reform focus (doi: https://doi.org/10.1504/IJETP.2023.138028)
61	Haqq, Azelia Machsari and Gultom, Yohanna M.L. (2022)	Public-private partnership (PPP) waste-to-energy topic (doi: 10.1108/JFMPC-09-2020-0058)
62	Majid et al. (2021)	Palm oil certification focus (doi: 10.3390/su13063263)
63	Puad, Lalu Mohmmad Abid Zainul and Ashton, Karen (2023)	National curriculum tensions topic (doi: 10.1002/curj.194)
64	Arif, Sirojuddin (2023)	Food crisis governance topic (doi: 10.1111/polp.12552)
65	Ariefiansyah, Rhino and Webber, Sophie (2022)	Climate services for agriculture focus (doi: 10.1080/03066150.2021.1873291)
66	Hermawan et al. (2023)	REDD+ governance topic (doi: 10.1016/j.forpol.2023.103037)
67	Wahyudi et al. (2024)	REDD+ benefit distribution focus (doi: 10.1016/j.tfp.2024.100726)
68	Golar, Golar (2023)	Forest investment strategy topic (doi: 10.18280/ijsdp.180717)

Table A2: Coding Procedure for Thematic Analysis

Coding Stage	Procedure	Output
Familiarization (1)	Repeated reading of the abstracts and full texts of the 57 included articles to gain an overall sense of the dataset's content and scope.	Initial analytical notes and preliminary observations across the dataset.
Initial (open) coding (2)	Systematic identification of recurring concepts, findings, and terms within each article (e.g., "elite capture," "black-box algorithm," "Village Fund misappropriation," "e-government infrastructure gap"), recorded as discrete codes per article.	A working list of open codes attached to individual articles.
Searching for themes (3)	Grouping of related codes into candidate overarching themes based on conceptual similarity and recurrence across the dataset.	Candidate thematic clusters.
Reviewing themes (4)	Candidate themes re-examined against the full dataset to verify internal coherence within each theme and clear distinction between themes; codes not fitting an existing cluster were re-evaluated or reassigned.	Refined and internally consistent thematic clusters.
Defining and naming themes (5)	Final delineation of the scope and boundaries of each cluster, resulting in the three thematic clusters reported in Table 1.	Digital Bureaucracy; Paradox of Participation; Public Policy Governance.

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Note: Coding was conducted by a single researcher without qualitative data analysis software; consistency was maintained through an audit trail and iterative cross-checking of coded articles against theme definitions.

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