

Digital Licensing as Institutional Reconfiguration: Urban Spatial Planning Governance Beyond Legal Certainty

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Abstract

Digitalization is increasingly becoming an important strategy in reforming urban spatial planning permits, alongside efforts to modernize public administration and governance. However, existing studies generally still assess digital licensing primarily from the perspective of administrative efficiency and legal certainty, thus paying insufficient attention to its institutional implications for governance practices. This research examines digital licensing from an institutional perspective, emphasizing how digital systems and devices are changing governance practices in urban spatial planning. This study employs a qualitative methodology, focusing on institutional analysis of publicly accessible policy documents, institutional records, and digital licensing workflows. The research findings indicate that digital licensing serves as an institutional reconfiguration mechanism that influences the exercise of authority, inter-agency coordination patterns, and governance capacity through system-based workflows. These changes primarily occurred at the operational and institutional levels, although they were not always accompanied by explicit formal regulatory changes. This research contributes to the digital governance and urban governance literature by moving beyond approaches that solely emphasize legal certainty and positioning digital systems as active institutional structures that mediate administrative practices and decision-making processes. The proposed analytical framework is also relevant for other contexts that are implementing digital-based spatial planning licensing reforms in contemporary governance practices.

Keywords: Decision-Making, Digital Governance, Digital Licensing, Institutional Change, Urban Planning.

Introduction

The digitalization of public administration has become an important agenda in government governance reform in various countries, including in the field of urban spatial planning permits. The implementation of digital-based licensing systems is generally aimed at improving service efficiency, accelerating administrative processes, and strengthening government transparency and accountability (1, 2). In the context of urban spatial planning, digital licensing is considered part of bureaucratic modernization, which is expected to overcome the procedural complexity and institutional fragmentation that have been major challenges in licensing practices. Previous studies generally describe digital licensing as part of routine administrative practice. It is mainly used to support compliance with procedures and to provide clearer legal certainty for applicants. Through digital systems, rules are applied in a more uniform manner, discretionary decisions are limited, and administrative processes become

more predictable (3, 4). As a result, the discussion in the literature tends to focus on practical implementation, efficiency gains, and improvements in public service delivery, without questioning whether digitalization alters the underlying governance structure. However, several studies in the field of digital governance and public administration show that digital technology is never institutionally neutral. Digital systems can reshape the way public organizations work, redistribute authority, and influence coordination patterns between government actors (5, 6). In practice, the implementation of digital licensing moves manual processes to electronic platforms and creates new workflows, new control points, and different decision-making mechanisms compared to the previous system. Urban spatial planning governance is essentially an institutional process involving various actors, overlapping authorities, and cross-sectoral and cross-level government coordination (6, 7).

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(Received 02nd December 2025; Accepted 17th January 2026; Published 27th January 2026)

Therefore, changes in governance are not solely determined by written legal norms but also by institutional design and administrative practices that evolve in the daily operations of government. When spatial planning permits are integrated into a digital system, changes in governance can occur even without formal regulatory changes, which cannot be fully explained solely through the perspective of legal certainty (8). Although research on urban governance and administrative digitalization has developed in parallel, there are still limitations in the literature directly linking digital licensing with changes in the institutional structure of spatial planning governance. Studies on digital permitting tend to emphasize compliance and efficiency aspects, while urban governance studies rarely position digital permitting systems as mechanisms that actively reshape inter-agency relationships and governance capacity. Digital licensing is examined in this study as part of a broader process of institutional reconfiguration within urban spatial planning governance. The concept of institutional reconfiguration is not introduced as an abstract framework but as a way to understand how digital licensing reshapes governance arrangements through its operation in practice. The analysis draws on established institutional perspectives to support this interpretation. Governance theory is used to explain changes in coordination and authority among public institutions involved in spatial planning. Regulatory capitalism and new institutions complement this perspective by highlighting how digital licensing systems function as institutional arrangements that reorganise administrative routines, discretion, and decision-making processes. Together, these perspectives make it possible to account for governance change that emerges through system design and everyday administrative use, even where no explicit regulatory reform has taken place. Based on this gap, this study proposes a conceptual difference by reconceptualizing digital licensing not merely as an administrative instrument or a means of legal certainty, but as an institutional reconfiguration mechanism that shapes urban spatial planning governance. The analysis focuses on how digital licensing systems reorganize authority, affect inter-agency coordination patterns, and shape governance capacity, going beyond explanations based solely

on legal certainty. To examine this argument, this study employs a qualitative institutional analysis approach, using Indonesia as an illustrative case to demonstrate governance dynamics relevant to urban contexts across various jurisdictions.

Studies on digital government generally describe the digitalization of public services as a strategy to improve efficiency, service quality, accountability, and administrative coordination. Within this literature, digital transformation in public administration is often discussed as a reorganization of administrative processes, work structures, and governance arrangements enabled by digital systems, rather than as the simple adoption of new technologies (3). Research on the transition from new public management to digital-era governance further reinforces this view by showing how digital platforms reorganize administrative practices and concentrate coordination through data-driven workflows (9-11). Despite this broader understanding, a substantial portion of e-government research continues to approach digitalization primarily as an instrument for enhancing administrative performance, transparency, and procedural compliance. This tendency is also evident in studies of licensing systems, where digital licensing is frequently treated as a technical solution aimed at improving efficiency and legal certainty, rather than as a mechanism capable of producing institutional change (11, 12).

At the same time, work in digital governance and urban governance emphasizes that digital technologies are not institutionally neutral. Digital systems interact with existing bureaucratic rules, organizational routines, and power relations, shaping administrative work by defining procedures, sequencing tasks, controlling access to data, and structuring authorization processes. Through these mechanisms, digital systems influence how authority and coordination are exercised in everyday governance practice (4, 11). Related literature in urban governance and spatial planning similarly highlights the central role of institutional coordination, authority distribution, and governance capacity in addressing the complexity of urban development processes (13, 14).

Even with these insights, relatively little attention has been paid to how digital licensing systems operate as institutional mechanisms that actively

reshape coordination patterns and authority structures in urban spatial planning. Most existing studies continue to conceptualize digital licensing as an administrative instrument focused on efficiency, transparency, and legal certainty. Building on this gap, the present study contributes theoretically by reframing digital licensing as a process of institutional reconfiguration that alters authority, coordination, and governance capacity. Empirically, this contribution is developed through an institutional analysis of digital spatial planning licensing practices in Indonesia (5, 9).

Methodology

This research employs a qualitative approach with institutional analysis to examine how digital licensing systems reshape urban spatial planning governance. This approach was chosen because the research focus was not directed toward testing legal compliance or normative evaluation of regulations, but rather toward understanding the changes in institutional arrangements, coordination mechanisms, and governance practices that emerged through the implementation of digital licensing systems (15, 16). The research design is exploratory and explanatory, with the aim of explaining how digital licensing functions as an institutional reconfiguration mechanism in urban spatial planning governance (17). Indonesia is used as an illustrative case, not for statistical generalization,

but rather to demonstrate relevant governance dynamics within the context of digital public administration reform (18, 19).

The analysis in this study follows a gradual institutional reading of digital licensing practices in urban spatial planning. Rather than applying a rigid procedural model, the research begins by reviewing policy documents and institutional records that are directly connected to the operation of digital licensing systems. These materials are used to trace how licensing procedures are actually organised and carried out in administrative practice. Attention is then directed to the way digital workflows structure administrative interaction. At this stage, the analysis focuses on how authority is exercised, how coordination between agencies takes place, and how governance capacity is shaped through routine use of the system. The final part of the analysis interprets these observations to assess their broader governance implications, particularly in relation to institutional reconfiguration. While the steps are analytically connected, they are applied flexibly to allow the institutional dynamics of digital licensing to emerge from the data. Figure 1 summarises this analytical progression, showing how the study moves from document review to institutional interpretation by examining digital licensing as part of evolving governance arrangements.

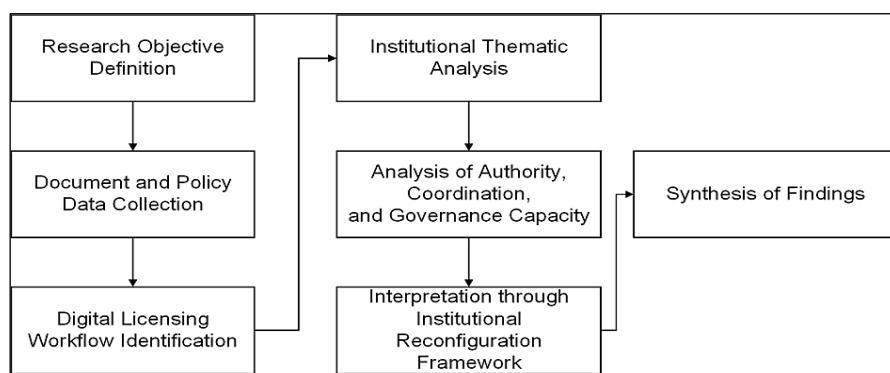


Figure 1: Research Methodology Flowchart

Figure 1 illustrates how the analytical stages are ordered in this study. The sequence is intended to make the institutional analysis of digital licensing easier to follow and to clarify how similar analytical steps could be applied in other governance settings.

Data Collection Techniques

The study draws on secondary materials taken from publicly available sources and official records that are directly related to the design of digital licensing systems and the practice of spatial planning governance (20-22). The primary data sources include (a) policy documents and operational guidelines related to the digital spatial

planning licensing system. (b). Publicly available descriptions of the digital licensing system and workflow. (c) Institutional documents from government agencies involved in the spatial planning licensing process. (d) Academic literature discussing digital governance, public administration, and urban governance. Data collection was conducted through document

analysis and a systematic review of materials relevant to the design and implementation of digital licensing (23, 24). To clarify the relationship between the data sources and the focus of the analysis, Table 1 summarizes the types of data analyzed and the institutional reconfiguration aspects that are the main concern of this study.

Table 1: Data Sources and Analytical Focus

| Data Source | Document Type | Analytical Focus |
|------------------------------------|-------------------------------------|--|
| Digital licensing policy documents | Guidelines and operational policies | Institutional objectives and system design |
| Licensing system workflows | Platform processes and procedures | Coordination mechanisms |
| Institutional documents | Organizational roles and mandates | Authority distribution |
| Digital governance literature | Peer-reviewed journal articles | Contextualization of institutional change |

Table 1 presents a summary of the data sources used in the study and the focus of institutional analysis applied to each data type. This table shows that the research analysis does not rely on a single type of document but rather combines policy documents, system workflow descriptions, institutional documents, and academic literature to capture the changes in authority, coordination mechanisms, and governance dynamics that emerge through the implementation of digital licensing. Thus, Table 1 confirms the empirical basis and methodological consistency of the institutional analysis conducted.

Data Analysis Techniques

Data analysis was conducted using institutional thematic analysis. The analysis stages include (a) identifying changes in the distribution of authority that emerge through the digital licensing system. (b) Analyzing the inter-agency coordination mechanisms that are built or changed as a result of digital licensing. (c) examine how the digital system is used in the administrative decision-making process, and (d) review how these practices relate to the capacity of urban spatial planning governance. This approach makes it possible to observe changes in administrative practice that occur through system design and daily use, even when no formal regulatory changes are introduced. To support the analysis, this study compared information from different types of documents and relevant literature. Data from these sources were reviewed side by side to determine consistency. The analysis was conducted with reference to existing studies on digital governance and urban

governance to ensure that the interpretation remains grounded in established academic discussions.

Digital Licensing as a Mechanism for Institutional Reconfiguration

In many public administration studies, digital licensing is treated as a technical instrument to improve efficiency, transparency, and procedural certainty (25). This approach positions digital systems as tools that operate within established institutional structures. The conceptual framework in this study takes a different position by viewing digital licensing as a mechanism for institutional reconfiguration, that is, as a factor that actively reshapes inter-agency relationships, lines of authority, and governance practices in urban spatial planning (26, 27). Institutional reconfiguration is understood as a process of change in the arrangements of authority, coordination, and decision-making mechanisms that occurs through the design and operation of digital systems, regardless of whether formal regulatory changes have taken place. Thus, the digital licensing system is not treated as a neutral medium but rather as an operational structure with governance implications.

This study interprets the governance implications of digital licensing by focusing on how discretion is exercised within digitally mediated administrative settings. Although digital licensing platforms rely on standardized procedures and automated workflows, they also incorporate decision rules, control mechanisms, and operational constraints that influence how discretion functions in everyday administrative

practice. Within this context, concerns such as algorithmic opacity and regulatory adaptation are understood as conditions that shape discretionary space rather than as separate analytical frameworks. This way of framing the issue reflects discussions in administrative law and digital governance, which point to the growing role of digital infrastructure in mediating uncertainty, authority, and discretionary power in contemporary public administration.

To operationalize these analytical expectations, this study adopts a simplified conceptual framework that categorizes digital licensing into four interrelated institutional elements: system design, service delivery, administrative support,

and evaluation mechanisms. These elements represent key dimensions through which digitalization restructures governance arrangements in public administration. The framework does not treat digital licensing as a stand-alone technical solution. It reflects how digital systems operate across institutional elements in practice, influencing procedures, coordination, discretion, and accountability. This perspective supports the analysis of institutional reconfiguration in urban spatial planning governance. Figure 2 shows the institutional elements considered in the framework and how digitalization affects each of them.

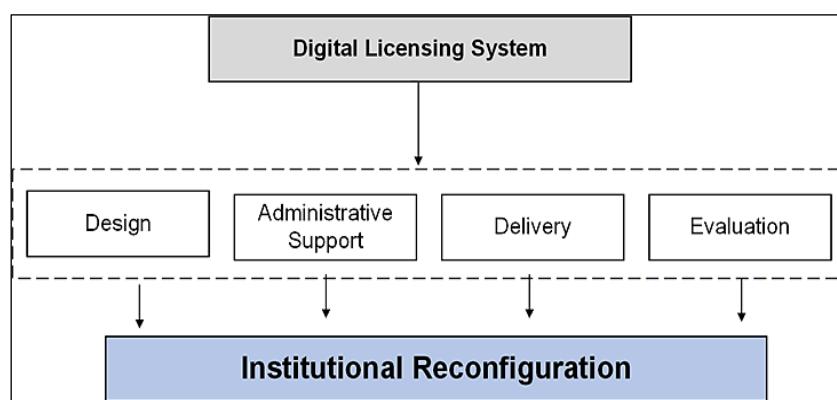


Figure 2: Conceptual Framework of Digital Licensing as Institutional Reconfiguration

This framework guides the subsequent institutional analysis by structuring the examination of governance changes across these four dimensions.

Dimensions of Institutional Reconfiguration

This study draws on previous studies on digital governance and urban governance to identify three aspects related to the use of digital permitting in urban spatial planning governance (28-30).

Authority Reconfiguration

Digital licensing can influence the exercise of authority among administrative agencies. Through standardized procedures, integrated data, and system-based control points, some decisions that were previously handled separately are now processed within the same system. As a result, certain responsibilities become more centralized or restricted by system settings. These changes are not always written explicitly in formal regulations, but they can be observed in routine decision-making practices.

Coordination Reconfiguration

Digital licensing systems establish new coordination mechanisms through workflows, data interoperability, and interdependence between organizational units. Coordination that was previously informal or based on personal relationships can transform into systemic coordination governed by digital platforms. Such coordination affects the speed, sequence, and pattern of inter-agency interactions in the spatial planning permit process.

Governance Capacity Reconfiguration

Spatial planning tasks are carried out through routine administrative work. In the current system, digital licensing is used to organize procedures and manage information. Decisions are processed within the system and follow the steps that are already set. Daily work therefore depends on how the system is configured and whether the required digital infrastructure is available (31, 32). Figure 3 shows how digital permitting is connected to administrative practices in urban spatial planning.

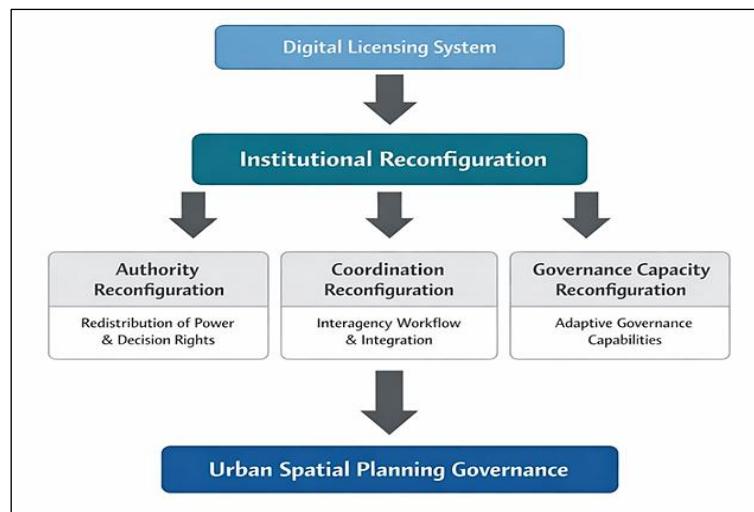


Figure 3: Digital licensing as institutional reconfiguration.

Figure 3 outlines the conceptual framework that positions digital licensing as an institutional reconfiguration mechanism in urban spatial planning governance. This framework shows that digital licensing systems are not understood as neutral administrative tools but rather as operational structures that influence how authority is exercised, how interagency coordination is formed, and how governance capacity develops in practice. Through the three main dimensions of authority reconfiguration, coordination reconfiguration, and governance capacity reconfiguration, Figure 3 confirms that the implications of digital licensing for spatial planning governance extend beyond a mere legal certainty perspective. This framework serves as the analytical basis for interpreting research findings and connecting changes occurring at the digital system level with the dynamics of institutional governance. Within this framework, legal certainty is not ignored but is positioned as a boundary condition, not as the primary focus of analysis. Legal certainty is regarded as a fundamental requirement in licensing, whereas the primary focus of the analysis is on the ways in which digital licensing systems transform governance practices and institutional frameworks. Thus, this conceptual framework moves beyond legal certainty, without negating its role in the public administration system. Conceptually, this research positions digital licensing as a trigger for institutional reconfiguration that operates through three main dimensions of authority, coordination, and governance capacity within the context of urban spatial planning. This framework provides an

analytical basis for systematically reading the research results and distinguishing this research approach from studies solely focused on legal certainty or normative compliance.

Results

Institutional thematic analysis presents the results section, bolstered by analytical indicator tables and workflow visualizations. This presentation aims to show that the research findings are derived from systematic observation of digital licensing system designs and administrative practices, not merely a normative description.

Authority Reconfiguration

The analysis results indicate that the digital licensing system is reshaping the exercise of administrative authority in urban spatial planning. Control points embedded within the digital system now mediate authority that various agencies previously exercised in a fragmented manner. The system's workflow design and validation mechanisms serve as regulators of the sequence and boundaries of authority execution, thus making the roles of individual actors increasingly structured by the platform's logic. This reconfiguration of authority is particularly evident in the changes to approval points and decision-making mechanisms. Administrative authority is not eliminated but is exercised within a systemic framework determined by the platform's design. These changes occurred without requiring formal regulatory changes, but they had a direct impact on daily administrative decision-making practices.

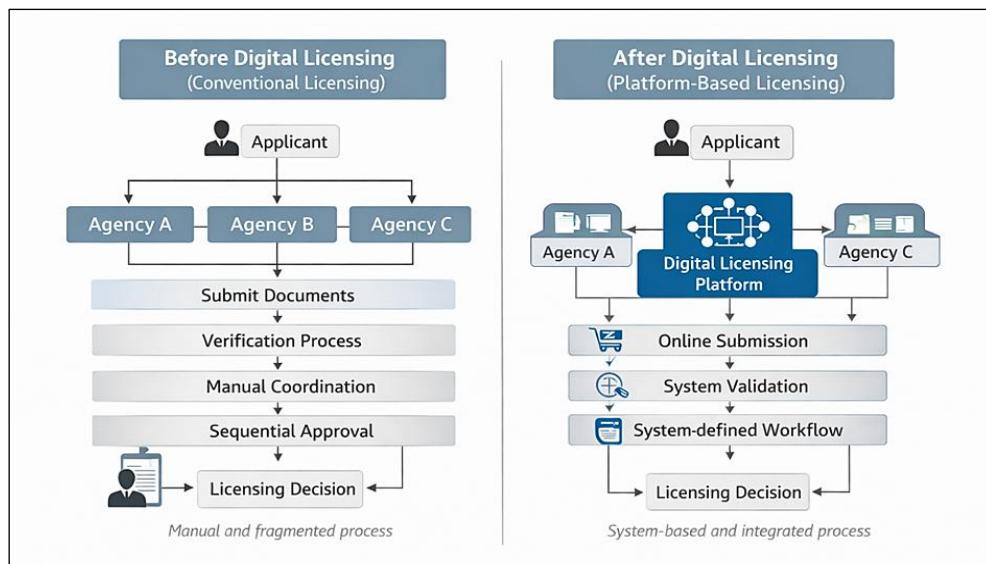


Figure 4: Institutional Workflow Reconfiguration under Digital Licensing

Figure 4 shows the workflow of the licensing process before and after the use of a digital licensing system. Before digitalization, the permitting process involved several agencies and was handled in separate stages with manual coordination. After the system was introduced, the process was handled through a single digital platform that brought together procedures, data, and coordination across agencies. As a result, administrative coordination is carried out through the system rather than through separate institutional interactions.

Coordination Reconfiguration

Coordination between agencies occurs as part of the permit handling process in spatial planning. In earlier arrangements, coordination relied on documents and separate communication between work units. With the use of digital licensing, coordination is carried out through the system. Procedures and information are processed on the

platform, and work units complete their tasks by following the steps set by the system. This change reduces coordination fragmentation and creates more consistent and predictable patterns of institutional interaction.

Governance Capacity Reconfiguration

Changes in authority and coordination influence how urban spatial planning permits are managed by public institutions. Digital licensing systems contribute to more consistent procedures, clearer records of decision-making, and improved information sharing across agencies. These conditions support more coordinated administrative practices, not only by improving service efficiency but also by structuring how licensing processes are handled. At the same time, the operation of licensing activities increasingly depends on the design, reliability, and stability of digital systems used in practice.

Table 2: Indicators of Institutional Reconfiguration in Digital Licensing

| Analytical Dimension | Observed Indicator | Pre-Digital Condition | Post-Digital Condition | Data Source |
|----------------------|------------------------|------------------------------------|---------------------------------|-------------------------|
| Authority | Permit approval points | Dispersed across multiple agencies | Consolidated within the system | Platform workflow |
| Authority | Actor roles | Discretion of individual units | Mediated by the system | Institutional documents |
| Coordination | Data exchange | Manual and paper-based | Digitally integrated | System design |
| Coordination | Process sequencing | Linear and multi-layered | System-defined workflow | SOPs and platform |
| Governance capacity | Process consistency | Varies across units | Standardized through the system | Operational guidelines |
| Governance capacity | Decision traceability | Limited | Systemically available | System logs |

Table 2 provides a comparison of administrative conditions before and after the use of digital licensing. The comparison is based on predefined indicators related to authority, coordination, and decision-making procedures, as documented in the data sources used in this study.

Discussion

In everyday administrative practice, urban spatial planning permits are processed using digital licensing systems. Administrative work is carried out within the system, where procedures and information are handled together. Decisions are made by following the steps required during the permitting process. These practices can be observed in routine administrative activities, even though the formal regulatory framework has not changed. Permit handling is closely connected to the performance of the digital system itself. Procedures, records, and coordination rely on how the system is designed and how reliably it operates. When the system runs properly, administrative work tends to proceed smoothly. When system performance is disrupted, permit processing is also affected. In this sense, daily licensing practice reflects the way the digital system functions in use.

Conceptually, this research contributes by offering an analytical framework that positions digital licensing as a trigger for institutional reconfiguration in spatial planning governance, going beyond a mere focus on legal certainty. Empirically and analytically, this study demonstrates how changes in governance authority, coordination, and capacity can be identified through document analysis and system workflow. The limitations of this study lie in the use of secondary data and the focus on a single national context as an illustrative case. Subsequent research may enhance this methodology via cross-regional comparative studies or by integrating institutional analysis with supplementary empirical data to elucidate the disparities in the effects of digital licensing. These observations are consistent with recent studies on digital governance, which argue that digital systems not only enhance administrative efficiency but also restructure coordination mechanisms and decision-making practices within public institutions (3, 33). Similar findings have been reported in studies of digital-era

governance, where digital platforms centralize administrative workflows while simultaneously reshaping institutional authority and operational capacity. The present findings reinforce these arguments by showing how routine licensing practices are increasingly shaped by the design and performance of digital systems, even in the absence of formal regulatory change.

However, compared to studies conducted in more consolidated regulatory environments, this study highlights context-specific dynamics related to institutional fragmentation and inter-agency coordination in urban spatial planning. Recent research emphasizes that the governance effects of digital systems vary significantly across administrative contexts, particularly where digital reforms interact with pre-existing institutional complexity and legal uncertainty (34, 35). In this regard, the Indonesian case illustrates how digital licensing may simultaneously streamline procedures and reproduce discretionary practices, suggesting that institutional reconfiguration through digital systems is shaped by contextual governance arrangements rather than producing uniform outcomes.

Conclusion

This study highlights that digital licensing cannot be adequately understood if it is treated only as a technical solution for improving administrative efficiency or ensuring legal certainty. In the context of urban spatial planning governance, digital licensing operates within everyday administrative practices and gradually shapes how authority, coordination, and decision-making are exercised. These effects emerge through system design and use, rather than through explicit regulatory reform. Viewing digital licensing as a form of institutional reconfiguration allows governance change to be observed at an operational level. The findings indicate that institutional arrangements may shift incrementally as digital systems structure routines, workflows, and access to information. In the Indonesian case examined here, digital licensing has become a practical arena in which governance capacity and inter-agency relations are reorganised over time.

From a policy perspective, this suggests that digital licensing initiatives should be approached with greater awareness of their institutional

implications. Decisions about system design and implementation may have consequences for discretion, accountability, and coordination that extend beyond procedural objectives. Paying attention to these dimensions is therefore important for understanding the broader governance effects of digital reforms. This study is limited by its reliance on secondary data and its focus on a single national setting. Further research could explore similar dynamics in different institutional contexts or draw on primary empirical materials to deepen the analysis. Such work would help clarify how digital licensing reshapes governance practices across varying administrative environments.

Abbreviation

AI : Artificial intelligence.

Acknowledgement

The author gratefully acknowledges the research support provided by the Faculty of Law, Universitas Wiralodra, Indramayu, Indonesia, during the preparation of this manuscript.

Author Contributions

Didi Nursidi: conceptualization, conducted the study, collected the data, analysis, interpreted the data, drafted the manuscript, Taufik Hidayat: conceptualization, analysis, interpreted the data. Roqiyul Ma'arif Syam: conceptualization,. All three authors critically reviewed the final manuscript.

Conflict of Interest

The authors have no conflicts of interest to declare.

Declaration of Artificial Intelligence (AI) Assistance

The authors declare that no artificial intelligence (AI) tools were used to generate the scientific content, analysis, interpretation, or conclusions of this manuscript. Any digital tools used during the manuscript preparation process were limited solely to language refinement, grammar checking, and formatting support, without influencing the intellectual content of the work.

Ethics Approval

This study is based on qualitative institutional analysis using publicly available policy documents, regulatory texts, and administrative system descriptions. No human participants,

personal data, or identifiable information were involved in the research process. Therefore, formal ethical approval and informed consent were not required. The study adheres to academic ethical standards by ensuring transparency, proper citation, and responsible interpretation of institutional data.

Funding

No funds were received to conduct the study.

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How to Cite: Nursidi D, Hidayat T, Syam RM. Digital Licensing as Institutional Reconfiguration: Urban Spatial Planning Governance Beyond Legal Certainty. *Int Res J Multidiscip Scope*. 2026; 7(1): 944-953. DOI: 10.47857/irjms.2026.v07i01.09932