

Smart Constitutional Oversight of Laws and Regulations in the Context of Modern Governance

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Abstract

This study aimed to identify and explain the constitutional foundations, intelligent mechanisms, accountability safeguards, institutional requirements, and implementation conditions necessary for developing smart oversight of laws and regulations within the framework of modern governance. This study employed an exploratory qualitative design. The study population consisted of experts in constitutional law, public law, administrative law, legislation and regulation, digital governance, artificial intelligence, and legal technologies working in Tehran. Using purposive sampling with maximum variation, 18 participants were selected based on relevant academic or professional expertise and at least five years of related experience. Data were collected through in-depth semi-structured interviews and continued until conceptual saturation was achieved. Interviews were transcribed verbatim and analyzed using qualitative thematic content analysis through iterative coding, constant comparison, category development, and abstraction of overarching themes. Credibility, dependability, confirmability, and transferability were strengthened through member checking, systematic documentation of coding decisions, peer consultation, and continuous comparison between raw data and emerging themes. Analysis of the interviews yielded 126 focused codes, 33 subthemes, and five overarching themes. The findings indicated that smart constitutional oversight requires constitutional legitimacy and normative conformity, including constitutional supremacy, protection of fundamental rights, equality, legality, institutional competence, separation of powers, proportionality, and procedural fairness. Intelligent oversight was further characterized by semantic constitutional screening, automated detection of conflicts and obsolete regulations, rights-risk identification, and continuous regulatory monitoring. Participants emphasized that algorithmic outputs must remain explainable, traceable, contestable, and subject to mandatory human validation. Institutional interoperability, standardized legal metadata, multidisciplinary governance, explicit legal authorization, reliable data, cybersecurity, algorithmic auditing, professional training, and phased implementation were identified as essential conditions for effective implementation.

Keywords: Smart Oversight; Constitutional Law; Laws and Regulations; Modern Governance; Artificial Intelligence; Regulatory Governance; Judicial Review; Algorithmic Accountability.

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1. Introduction

The expansion of governmental functions, the multiplication of regulatory instruments, and the growing complexity of contemporary administrative systems have transformed the traditional problem of legal supervision into a broader question of constitutional governance. Modern states no longer govern solely through statutes enacted by legislatures; they increasingly rely on executive regulations, administrative directives, delegated rulemaking, sector-specific standards, emergency instruments, and decisions issued by specialized agencies. This regulatory density creates significant challenges for maintaining the internal coherence of the legal order and ensuring that the exercise of public power remains consistent with constitutional principles. In this context, the rule of law requires more than the formal existence of legal rules. It requires that governmental authority be exercised within legally defined limits, that institutional powers remain subject to review, and that citizens be protected against arbitrary, inconsistent, or disproportionate uses of public authority. Courts have historically occupied a central position in this structure because judicial review operates as one of the principal mechanisms through which legality, constitutional supremacy, and institutional accountability are protected (Waldron, 2021). At the same time, constitutional justice has evolved through different institutional arrangements across legal systems, demonstrating that the protection of constitutional norms depends on a broader system of legal institutions, procedures, and relationships rather than on a single supervisory body (Sweet & Ryan, 2020). Accordingly, the contemporary problem is not simply whether laws and regulations are subject to oversight, but whether the oversight system is sufficiently comprehensive, timely, coordinated, and capable of responding to the rapidly increasing complexity of rulemaking.

The constitutional foundations of legal oversight are closely connected with the separation of powers and the distribution of authority among legislative, executive, and judicial institutions. Separation of powers is not merely an organizational doctrine but a mechanism intended to constrain concentrations of governmental power and preserve a system in which each institution acts within constitutionally recognized boundaries. Historical and contemporary analyses of this principle demonstrate that the relationship among the branches of government necessarily combines institutional independence with interaction and mutual restraint (Akhtar, 2023). Judicial review developed within this broader architecture as an instrument for testing exercises of governmental authority against higher legal norms and for preventing constitutionally unauthorized action. The development of the modern conception of the judiciary illustrates how judicial institutions came to be understood as essential guardians of constitutional limitations rather than merely adjudicators of ordinary private disputes (Treanor, 2020). More recent constitutional theory likewise emphasizes that judicial review should be analyzed in relation to the interaction and potential complicity of separated powers, because constitutional governance depends on the manner in which institutions monitor, restrain, and respond to one another (Sigale, 2025). Consequently, any contemporary model of oversight over laws and regulations must preserve this institutional balance and should not transform supervision into an autonomous mechanism detached from constitutional allocations of power.

The need for effective oversight becomes particularly evident in relation to executive and administrative power. Contemporary governance relies heavily on administrative institutions that possess substantial discretion in translating legislative mandates into practical policies and binding regulatory requirements. Comparative scholarship on democracy and executive power demonstrates that administrative policymaking occupies a central position in contemporary states and that the legitimacy of executive rulemaking depends on mechanisms capable of reconciling expertise and policy flexibility with democratic accountability and legal control (Rose-Ackerman, 2022). The constitutional problem is intensified when executive institutions possess wide discretionary powers. The historical analysis of constitutionalism associated with John Marshall illustrates the enduring concern that executive discretion must remain bounded by legal principles and constitutionally structured limitations (Jones, 2026). Administrative agencies can also influence constitutional development through their own interpretations and decisions, meaning that constitutional norms are shaped not only in courts but also in day-to-day administrative practices (Bernstein, 2021). At the organizational level, bureaucratic autonomy may be necessary for professional and effective governance, yet excessive insulation can weaken external accountability and create difficulties in ensuring conformity with broader constitutional and democratic objectives (Bersch & Fukuyama, 2023). These tensions indicate that modern oversight must be capable of monitoring not only formal legislation but also the large body of administrative and regulatory instruments through which public authority is actually exercised.

Legislative supervision of administrative rulemaking is therefore another crucial dimension of contemporary constitutional governance. Delegated legislation and regulatory decision-making can increase the adaptability and technical competence of government, but they also create risks of institutional dependency, weak political accountability, fragmented legal authority, and regulatory expansion beyond legislative intent. Recent analysis of legislative control over rulemaking demonstrates that the relationship between legislators and regulatory institutions may assume different forms depending on political, institutional, and administrative conditions (Costa et al., 2026). In practice, effective oversight requires the ability to determine whether administrative rules remain within the scope of statutory authorization, whether procedural requirements have been respected, and whether the resulting regulatory provisions are compatible with constitutional guarantees. The problem is especially significant because oversight may be dispersed among multiple institutions whose competencies overlap or whose information systems are poorly integrated. Research on local-government supervision likewise shows that oversight structures are strongly influenced by the broader state-legal framework and by processes of institutional transformation and legal integration (Bodrova, 2023). This suggests that regulatory supervision should be conceptualized not as an isolated act of subsequent control but as an integrated process extending throughout the regulatory lifecycle, from drafting and adoption to implementation, amendment, and eventual repeal.

Judicial review remains indispensable within this process, particularly where legislation or administrative action threatens rights or exceeds constitutionally established authority. The distinction between judicial review and ordinary appeal is important because review is fundamentally concerned with the legality and validity of governmental action rather than merely reconsidering the merits of a decision (Pandit, 2022). Comparative studies of administrative adjudication similarly demonstrate that judicial oversight can provide a mechanism for controlling administrative decisions and protecting individuals against unlawful exercises of public power (Faiez, 2022). The reach of judicial review becomes particularly important where legislatures attempt to restrict judicial supervision through ouster clauses or similar provisions. Examination of such clauses has shown that courts may interpret limitations on review cautiously in order to preserve the fundamental supervisory role of the judiciary (Azeem & Sultan, 2023). In institutional settings beyond ordinary national courts, judicial or quasi-judicial review also serves as a mechanism for assessing administrative legality and procedural justice, as demonstrated in analyses of administrative tribunals within international organizations (Pangalangan, 2022). These studies collectively highlight the importance of reviewability as a constitutional principle. Nevertheless, they also reveal an inherent limitation of conventional oversight: judicial review is frequently reactive, case-dependent, resource-intensive, and initiated only after a contested rule or decision has already produced legal consequences.

The effectiveness of constitutional review therefore depends not only on formal judicial powers but also on the capacity of institutions to identify problematic legal measures early and to operate under conditions that preserve institutional independence. Research on courts reviewing legislative action has emphasized the importance of evaluating judicial performance through a structured conceptual framework rather than assuming that the existence of judicial review automatically guarantees effective constitutional protection (Bwire et al., 2022). Courts may also be exposed to political responses intended to reduce their authority, alter their jurisdiction, restructure their composition, or otherwise constrain their supervisory capacity. Studies of court-curbing measures indicate that institutional reactions to judicial decisions can reshape the balance between courts and political actors and may affect the practical operation of constitutional controls (Catalano, 2022). Constitutional systems may also experience direct political resistance to judicial supervision, including legislative overrides, institutional backlash, or attempts to limit the judiciary's authority over constitutional questions. The Brazilian experience concerning judicial review of constitutional amendments demonstrates that courts may retain significant supervisory influence even where mechanisms of political reaction or override exist (Tommasini et al., 2021). Likewise, the Polish experience illustrates how formal legalism can become entangled with political struggles over constitutional institutions, raising broader questions regarding the resilience of legal safeguards under conditions of institutional conflict (Konciewicz, 2022). These developments reinforce the need for oversight systems that are not entirely dependent on episodic judicial intervention and that can provide systematic information concerning emerging legal and constitutional risks.

Public accountability further broadens the framework within which legal supervision must be understood. Constitutional oversight cannot function effectively when regulatory activity is inaccessible, opaque, or shielded from meaningful public

scrutiny. Public awareness may influence judicial institutions and the broader environment in which constitutional review takes place, indicating that oversight institutions operate within a social and political context rather than in institutional isolation (Krehbiel, 2020). In fields such as national security, the tension between executive confidentiality and democratic accountability becomes especially pronounced, and research has demonstrated the importance of institutional mechanisms capable of scrutinizing executive decision-making even in policy areas traditionally characterized by secrecy and discretion (Woods et al., 2021). Similar concerns arise where legal restrictions constrain journalism and public reporting. The relationship between legislative constraints and journalistic agency in reporting corruption illustrates how the legal framework itself may expand or restrict the capacity of external actors to contribute to accountability (Chitunhu & Saruchera, 2026). Thus, effective oversight of laws and regulations requires attention not only to formal constitutionality but also to transparency, access to information, institutional openness, and the broader conditions under which legal rules can be examined, questioned, and contested.

A further challenge concerns the degree of deference that courts and supervisory institutions should grant to administrative interpretations. Modern governments frequently delegate technically complex matters to specialized agencies, and such institutions may possess forms of expertise that generalist courts do not. Comparative analysis of judicial deference to administrative statutory interpretation demonstrates that legal systems adopt different approaches to balancing administrative expertise with judicial responsibility for maintaining legality (Martenet, 2020). Excessive judicial intervention may undermine legitimate administrative discretion and reduce the flexibility necessary for effective governance, whereas excessive deference may permit agencies to expand their authority or interpret statutory mandates in ways that are inconsistent with constitutional principles. This problem becomes even more important in the context of intelligent oversight because automated analytical systems could inadvertently reproduce either tendency. A system designed to flag every interpretive difference as a legal conflict could generate excessive intervention, while one trained to defer heavily to administrative interpretations could fail to detect substantial constitutional risks. Smart oversight must therefore be structured as a decision-support mechanism capable of distinguishing between matters requiring legal scrutiny and matters falling within a legitimate range of administrative discretion.

The tension between flexibility and legality also appears in areas where governments employ exceptional or rapidly evolving regulatory instruments. Rule-of-law scholarship concerning targeted sanctions demonstrates that governmental responses to urgent political and security concerns may gradually become normalized even when the mechanisms involved raise questions regarding procedural safeguards and legality (Pasculli & Stanford, 2022). Such cases demonstrate that regulatory systems must simultaneously accommodate the need for timely governmental action and prevent exceptional powers from escaping ordinary constitutional controls. Constitutional structures themselves also differ in their capacity for adaptation. Comparative analysis of written and unwritten constitutions shows that constitutional change can occur through different modalities and that formal amendment is only one mechanism through which constitutional arrangements evolve (Craig, 2022). The dynamic character of constitutional governance therefore complicates any attempt to construct a fixed checklist for monitoring regulatory validity. Smart supervision must be capable of operating within an evolving constitutional environment, distinguishing durable constitutional principles from changing legal rules and continuously updating the relationships among statutes, regulations, institutional practices, and authoritative interpretations.

Questions of institutional independence and checks and balances are similarly relevant to the design of any intelligent supervisory architecture. Independence should not be understood as total institutional isolation; rather, it operates within a system in which accountability and autonomy must be balanced. Analysis of international judicial independence through a checks-and-balances perspective has emphasized that institutional independence requires attention to the structure of relationships among actors rather than reliance on abstract claims of autonomy (Pérez, 2020). This insight is directly applicable to intelligent legal oversight. If a smart supervisory system is controlled exclusively by the same authority whose regulations it evaluates, its independence and credibility may be questioned. Conversely, if it operates completely outside existing constitutional institutions, it may lack legal authority and democratic legitimacy. The architecture of intelligent supervision must therefore clearly define institutional ownership, access rights, oversight responsibilities, review mechanisms, and the status of algorithmic outputs. It should enhance the informational capacity of constitutionally competent institutions without creating an unaccountable technological center of legal authority.

Modern governance also requires close attention to the interaction between constitutionalism and institutional design across different levels and types of legal order. Constitutional justice increasingly operates within interconnected national, supranational, and administrative systems, and this plurality reinforces the importance of coordination and mutual compatibility among legal institutions (Sweet & Ryan, 2020). At the same time, the meaning and practical reach of constitutional principles may vary across institutional environments. Administrative bodies, courts, legislatures, local authorities, and specialized regulators may each engage with constitutional norms from different functional perspectives. The proliferation of these sites of legal interpretation increases the risk of inconsistent applications, conflicting definitions, duplicated provisions, and uncertain jurisdictional boundaries. Smart oversight offers a potential response by creating a structured environment in which legal instruments can be continuously mapped according to their issuing authority, hierarchical status, subject matter, temporal validity, amendment relationships, and constitutional relevance. Such an approach could strengthen institutional memory and reduce dependence on fragmented manual review, while preserving substantive interpretation for competent legal actors.

The potential contribution of intelligent systems should therefore be understood primarily in terms of augmented constitutional governance rather than automated constitutional decision-making. Artificial intelligence, natural language processing, machine-readable legal databases, and algorithmic comparison tools can potentially assist institutions in processing volumes of legal material that exceed realistic human reviewing capacity. They may identify contradictory provisions, trace amendments, detect overlapping mandates, map regulatory relationships, highlight provisions affecting protected rights, and generate alerts concerning possible conflicts with superior norms. However, constitutional interpretation frequently involves contested concepts, competing rights, questions of proportionality, historical context, institutional competence, and normative judgment. The existence of sophisticated analytical technologies does not eliminate these interpretive dimensions. Indeed, the history and theory of constitutional review indicate that constitutional supervision has always involved judgments about institutional limits, legal meaning, democratic legitimacy, and the appropriate role of courts and administrative bodies (Treanor, 2020; Waldron, 2021). Consequently, intelligent oversight should support rather than displace the legal reasoning of constitutional institutions and qualified experts.

A human-centered model is also necessary because erroneous or opaque automated assessments could themselves generate new rule-of-law problems. An algorithm capable of classifying a proposed regulation as constitutionally problematic may influence decision-makers even where the reasoning behind that classification is not understandable or contestable. If an algorithmic warning acquires practical authority without clear procedures for review, the technology could create a new form of unaccountable administrative power. This risk is especially significant given the established importance of limits on executive discretion and the requirement that exercises of public authority remain legally reviewable (Azeem & Sultan, 2023; Jones, 2026). Accordingly, smart oversight requires explainability, traceability, identifiable responsibility, human validation, and mechanisms through which automated findings can be challenged. These safeguards parallel the broader requirements of judicial and administrative accountability identified in scholarship concerning legislative review, administrative decisions, and institutional supervision (Bwire et al., 2022; Faiez, 2022). The legitimacy of intelligent oversight thus depends as much on the governance of the technology as on its technical performance.

Another important consideration is that intelligent oversight should not be limited to detecting direct contradictions between a regulation and a specific constitutional provision. Constitutional legality is multidimensional and may involve equality, proportionality, due process, institutional competence, procedural fairness, predictability, and protection against arbitrary government. A legal instrument may contain no explicit contradiction with constitutional text while nevertheless raising substantial constitutional concerns because of its effects, implementation procedures, or interference with fundamental rights. Constitutional review in diverse institutional settings demonstrates that supervisory mechanisms must often evaluate the practical implications of governmental action rather than merely compare textual provisions (Pandit, 2022; Pangalangan, 2022). Likewise, questions surrounding administrative interpretation and bureaucratic autonomy show that legality frequently turns on institutional relationships and the boundaries of delegated authority rather than on textual incompatibility alone (Bersch & Fukuyama, 2023; Martenet, 2020). Therefore, a sophisticated smart oversight model should combine formal norm-hierarchy analysis with risk identification concerning substantive rights, institutional powers, procedural guarantees, and the practical consequences of regulation.

Despite these possibilities, the transition toward smart constitutional oversight introduces substantial legal, institutional, technical, and ethical challenges. Legal databases may be incomplete, inconsistent, or poorly structured; amendment histories may not be accurately linked; regulatory institutions may use incompatible classifications; and access to draft or internal regulatory materials may be restricted. Institutional actors may resist data sharing or perceive intelligent supervision as an intrusion into their professional authority. Algorithms may generate false positives, overlook contextual legal meanings, reproduce bias contained in historical datasets, or become outdated as legal doctrine develops. Furthermore, the effectiveness of the system depends on the existence of a clearly defined legal mandate and a precise distinction between advisory algorithmic outputs and binding institutional decisions. Experience with changing constitutional arrangements, political pressures on judicial institutions, and conflicts surrounding executive and legislative power demonstrates that oversight mechanisms cannot be evaluated independently from their political and institutional environment (Catalano, 2022; Craig, 2022; Konciewicz, 2022). A technologically advanced mechanism embedded in a weak accountability structure may merely reproduce existing institutional deficiencies in digital form.

For this reason, the concept of smart oversight should be situated within the broader framework of modern governance, which emphasizes coordinated institutions, transparent decision-making, accountable use of public power, data-informed administration, and adaptive regulatory processes. Such an approach recognizes that regulatory quality and constitutional compatibility should ideally be assessed throughout the lifecycle of a legal instrument rather than solely through ex post litigation. Legislative supervision, administrative review, constitutional adjudication, institutional auditing, and public accountability can be strengthened when reliable information is available at earlier stages of rulemaking. Research concerning legislative control, bureaucratic authority, administrative constitutionalism, and executive accountability collectively demonstrates that contemporary governance requires multiple complementary mechanisms of supervision (Bernstein, 2021; Costa et al., 2026; Woods et al., 2021). Similarly, studies of constitutional and judicial systems show that effective oversight depends on institutional design, reviewability, resilience, and the preservation of appropriate relationships among governmental actors (Sigalet, 2025; Tommasini et al., 2021). Smart technologies can potentially connect these dimensions by facilitating continuous legal monitoring, structured information exchange, risk prioritization, and documented pathways from automated detection to human review.

Nevertheless, an important research gap remains between traditional scholarship on constitutional and administrative oversight and the emerging possibility of technology-supported, continuous regulatory supervision. Existing studies provide substantial insight into judicial review, separation of powers, executive discretion, administrative interpretation, legislative control, court independence, bureaucratic autonomy, and rule-of-law safeguards, yet these dimensions are generally examined separately and primarily through conventional institutional mechanisms (Akhtar, 2023; Pérez, 2020; Rose-Ackerman, 2022). Less attention has been given to how these constitutional requirements might be integrated into a smart supervisory architecture capable of systematically monitoring laws and regulations while preserving human judgment, institutional competence, transparency, and accountability. This gap is particularly significant for contemporary governance systems facing increasing regulatory complexity and the need to review large and continuously changing bodies of legal rules. A qualitative investigation drawing on the perspectives of legal, regulatory, governance, and technological experts can therefore contribute to identifying the normative foundations, technological capacities, institutional arrangements, safeguards, and implementation conditions necessary for a constitutionally legitimate model of intelligent oversight.

Accordingly, the aim of this study was to identify and explain the constitutional foundations, intelligent mechanisms, accountability safeguards, institutional requirements, and implementation conditions of smart oversight of laws and regulations within the framework of modern governance.

2. Methods and Materials

This study employed an exploratory qualitative research design to develop an in-depth understanding of the requirements, mechanisms, capacities, and challenges associated with smart oversight of laws and regulations based on constitutional principles within the framework of modern governance. A qualitative approach was selected because the subject involves multidimensional legal, institutional, technological, and governance-related concepts that cannot be adequately investigated

through predetermined quantitative indicators alone. The study population consisted of experts and professionals residing or working in Tehran who possessed specialized knowledge or practical experience in constitutional law, public law, legislation and regulatory affairs, administrative law, modern governance, digital governance, legal technologies, or the application of artificial intelligence and intelligent systems in public-sector decision-making. Participants were selected through purposive sampling with a maximum-variation strategy in order to obtain perspectives from individuals with different academic and professional backgrounds. A total of 18 participants were included in the study. The participants comprised university faculty members specializing in constitutional and public law, legal scholars with research experience in legislation and regulatory governance, experts involved in legislative or regulatory institutions, and specialists familiar with digital governance and intelligent decision-support systems. Eligibility criteria included possessing relevant academic or professional expertise, having substantial knowledge of the Iranian constitutional and regulatory system, having at least five years of relevant academic, research, managerial, legislative, or executive experience, and expressing willingness to participate in an in-depth interview. Individuals whose professional or academic background was not directly related to the research topic or who were unable to complete the interview process were excluded. Sampling and interviewing proceeded simultaneously, allowing emerging findings to guide the selection of subsequent participants. Data saturation was considered to have been reached when additional interviews no longer generated substantively new concepts, categories, or relationships relevant to the research questions. Conceptual saturation became evident after the sixteenth interview; nevertheless, two additional interviews were conducted to verify the stability and completeness of the identified categories, resulting in the final sample of 18 participants.

Data were collected primarily through in-depth semi-structured interviews using a researcher-developed interview guide. The semi-structured format was adopted because it provided sufficient consistency across interviews while allowing participants to elaborate on complex legal and governance issues and introduce dimensions that had not been anticipated in advance. The initial interview guide was developed on the basis of the objectives of the study and the conceptual domains of constitutional oversight, legislative and regulatory quality, smart governance, digital transformation, algorithmic decision-making, transparency, accountability, and institutional supervision. The interview questions were designed to explore participants' perceptions of the meaning and characteristics of smart oversight of laws and regulations, the constitutional foundations and limitations of such oversight, the deficiencies of conventional mechanisms for reviewing legislation and regulations, the potential applications of artificial intelligence and data-driven technologies in constitutional and regulatory supervision, the institutional requirements for establishing an intelligent oversight system, the relationship between technological tools and human legal judgment, and the legal, ethical, technical, and organizational challenges associated with implementing such a system in the context of modern governance. Participants were also asked to explain the safeguards required to prevent algorithmic bias, excessive automation, violations of constitutional rights, lack of transparency, and inappropriate delegation of public authority to automated systems. Follow-up and probing questions were used throughout the interviews to clarify meanings, obtain concrete examples, identify causal relationships, and explore differences among participants' perspectives. Before the main interviews, the interview guide was reviewed by specialists in public law and qualitative research to evaluate its clarity, relevance, comprehensiveness, and alignment with the study objectives, and minor modifications were made accordingly. Interviews were conducted individually in a setting appropriate to each participant and lasted approximately 45 to 75 minutes. With participants' permission, interviews were audio-recorded and subsequently transcribed verbatim. Field notes were also prepared during and immediately after each interview to document contextual information, key observations, emerging analytical ideas, and issues requiring further exploration in subsequent interviews. Data collection continued concurrently with preliminary analysis so that emerging concepts could be examined more deeply in later interviews and questions could be progressively refined in accordance with the developing analytical framework.

The interview data were analyzed using a systematic qualitative thematic content analysis approach. Analysis began immediately after the first interview and continued concurrently with data collection. Each recorded interview was transcribed verbatim and reviewed repeatedly to obtain an overall understanding of the participant's perspective before formal coding commenced. The transcripts were then examined line by line, and meaningful statements, propositions, and passages related to constitutional oversight, the quality and legitimacy of legislation and regulations, smart governance, institutional accountability, technological capacities, implementation requirements, and potential risks were identified as meaning units. These meaning units were condensed without altering their essential meaning and were assigned initial codes that represented the underlying legal, institutional, technological, or governance concept. Similar codes were continuously compared, merged,

differentiated, and organized into preliminary subcategories. Through constant comparison across interviews, conceptually related subcategories were subsequently grouped into broader categories representing the principal dimensions of smart constitutional oversight of laws and regulations. At the higher analytical level, relationships among the categories were examined to identify overarching themes explaining how an intelligent regulatory oversight system could operate within the constitutional order and the broader framework of modern governance. Particular attention was paid to the interaction between constitutional legitimacy, institutional authority, technological infrastructure, data governance, transparency, accountability, protection of fundamental rights, human supervision, and the limits of automated legal decision-making. Data analysis was iterative rather than linear; therefore, earlier transcripts were repeatedly revisited as new concepts emerged from later interviews, and the coding framework was refined until conceptual coherence and saturation were achieved. To enhance the trustworthiness of the findings, several procedures were employed. Credibility was strengthened through prolonged engagement with the data, comparison of perspectives across participants with different professional backgrounds, and member checking of selected interpretations. Dependability was supported by maintaining a systematic record of coding decisions, category development, and modifications to the analytical framework. Confirmability was reinforced through repeated review of the relationship between raw interview data, codes, categories, and final themes, as well as consultation with knowledgeable researchers regarding potentially ambiguous interpretations. Transferability was facilitated by clearly defining the characteristics of the participants, the research context, and the analytical procedures. The final thematic structure was accepted when each major theme was supported by multiple interview statements, demonstrated conceptual distinctiveness from the other themes, and contributed directly to explaining the components, requirements, opportunities, safeguards, and challenges of smart constitutional oversight of laws and regulations within modern governance.

3. Findings and Results

The participants consisted of 18 experts working in Tehran whose academic and professional backgrounds were directly related to constitutional law, public law, legislation and regulatory affairs, governmental decision-making, digital governance, artificial intelligence, and legal technologies. Of the 18 participants, 11 were men and 7 were women. Their ages ranged from 36 to 62 years, with a mean age of approximately 48.3 years. Regarding educational qualifications, 15 participants held doctoral degrees and 3 held master's degrees in relevant fields. In terms of professional position, 7 participants were university faculty members specializing primarily in constitutional law, public law, or administrative law; 4 were experts with direct experience in legislative or regulatory institutions; 3 were legal advisers or senior managers working in public-sector organizations; and 4 were specialists in digital governance, artificial intelligence, legal informatics, or intelligent public-sector systems. The participants had between 8 and 31 years of relevant professional, academic, research, legal, or executive experience, with a mean professional experience of approximately 17.6 years. Ten participants had more than 15 years of relevant experience, while the remaining 8 had between 8 and 15 years of experience. This composition provided variation in legal, institutional, managerial, and technological perspectives and enabled the phenomenon of smart constitutional oversight to be examined from multiple complementary viewpoints. Analysis of the 18 interviews generated 812 initial meaning units. Through continuous comparison, elimination of semantic duplication, integration of conceptually similar statements, and progressive abstraction, these meaning units were condensed into 126 focused codes, which were subsequently organized into 33 subthemes and five overarching themes. The five main themes represented the constitutional, technological, accountability-related, institutional, and implementation dimensions of smart oversight of laws and regulations within the framework of modern governance.

Table 1. Overall Thematic Structure of Smart Constitutional Oversight of Laws and Regulations

Main theme	Principal subthemes	Number of subthemes	Participants referring to the theme, n (%)
Constitutional legitimacy and normative conformity	Constitutional supremacy and normative hierarchy; protection of fundamental rights and freedoms; equality and non-discrimination; legality and institutional competence; separation of powers and institutional boundaries; legal certainty, accessibility, and predictability; proportionality and necessity; procedural fairness, reviewability, and remedies	8	18 (100.0)
Intelligent detection and continuous regulatory monitoring	Machine-readable legal corpus; semantic constitutional screening; detection of conflict and inconsistency; identification of duplication, redundancy, and obsolete rules; constitutional-rights impact and risk flagging; regulatory lifecycle, version, and alert monitoring	6	18 (100.0)

Transparent, accountable, and human-centered algorithmic governance	Explainability of automated assessments; audit trails and data provenance; human validation of machine-generated outputs; contestability and review; algorithmic fairness and bias monitoring; clear allocation of institutional and professional responsibility	6	18 (100.0)
Institutional integration and regulatory coordination	Interoperable legislative and regulatory databases; cross-institutional information exchange; standardized legal metadata and ontologies; establishment of multidisciplinary oversight structures; integration of intelligent oversight into legislative and regulatory workflows	5	17 (94.4)
Implementation capacity, safeguards, and risk control	Explicit legal mandate and procedural rules; data quality and completeness; technical infrastructure and scalability; cybersecurity and privacy protection; algorithm validation and independent auditing; professional capacity and training; organizational change management; phased implementation and performance evaluation	8	18 (100.0)

As shown in Table 1, the findings indicated that smart oversight of laws and regulations was perceived by the participants as a multidimensional governance system rather than merely as the application of artificial intelligence to legal texts. All 18 participants emphasized constitutional legitimacy and normative conformity, intelligent detection and monitoring, transparent and accountable algorithmic governance, and implementation capacity and safeguards, while 17 participants explicitly discussed the necessity of institutional integration and regulatory coordination. The first theme demonstrated that constitutional oversight must remain grounded in the supremacy of the Constitution and cannot be reduced to a technical exercise in text comparison. Participants consistently described the protection of constitutional rights, institutional competence, equality, separation of powers, legal certainty, proportionality, and procedural fairness as substantive criteria against which laws and regulations should be evaluated. The second theme reflected the technological dimension of the proposed system and showed that participants envisioned a continuously operating intelligent infrastructure capable of processing large volumes of legislative and regulatory data, identifying possible inconsistencies, and providing early warnings before or after the adoption of legal rules. The third theme demonstrated that the legitimacy of intelligent oversight depended heavily on explainability, traceability, human validation, contestability, and identifiable responsibility, indicating a clear rejection of fully autonomous constitutional decision-making. The fourth theme revealed that fragmented institutional information and disconnected regulatory databases were regarded as substantial obstacles to meaningful smart oversight. Participants therefore emphasized interoperability, standardized legal data, and coordination among institutions involved in legislation, regulation, implementation, and constitutional supervision. Finally, the fifth theme showed that effective implementation required not only advanced technology but also a clear legal basis, reliable data, secure infrastructure, independent algorithmic evaluation, trained professionals, organizational readiness, and gradual implementation. Taken together, these themes indicate that smart constitutional oversight was conceptualized as an integrated socio-legal and technological arrangement in which constitutional standards determine the normative boundaries of the system, intelligent technologies increase the capacity for detection and monitoring, and human institutions retain ultimate responsibility for interpretation and decision-making.

Table 2. Constitutional and Legal Foundations of Smart Oversight of Laws and Regulations

Constitutional-legal dimension	Analytical meaning derived from the interviews	Participants, n (%)
Constitutional supremacy and normative hierarchy	Continuous examination of statutes, regulations, directives, bylaws, administrative decisions, and other subordinate rules to identify incompatibility with superior constitutional norms and legally superior instruments	18 (100.0)
Protection of fundamental rights and freedoms	Identification of provisions that may unjustifiably restrict privacy, property, freedom, due process, access to information, participation, or other constitutionally protected rights	17 (94.4)
Equality and non-discrimination	Detection of legal provisions that may create unjustified distinctions, unequal access, discriminatory treatment, or disproportionate burdens for particular groups	15 (83.3)
Legality and institutional competence	Verification that the authority issuing a rule possesses a valid legal mandate and has acted within the substantive and procedural limits of its delegated powers	17 (94.4)
Separation of powers and institutional boundaries	Identification of regulations or decisions through which an institution may interfere with constitutionally allocated powers or effectively assume legislative, executive, or adjudicative authority beyond its mandate	16 (88.9)
Legal certainty, accessibility, and predictability	Assessment of ambiguity, contradictory terminology, unstable legal definitions, inaccessible rules, inconsistent amendments, and provisions that make legal consequences difficult to predict	16 (88.9)
Proportionality and necessity	Examination of whether restrictions, obligations, sanctions, or administrative interventions are suitable, necessary, and reasonably balanced in relation to their stated public objectives	14 (77.8)
Procedural fairness, reviewability, and remedies	Ensuring that rules affecting rights and obligations are accompanied by transparent procedures, opportunities for objection or review, reason-giving requirements, and effective mechanisms for legal remedy	15 (83.3)

Table 2 demonstrates that the constitutional basis of intelligent oversight extended substantially beyond checking whether a legal text explicitly contradicted a constitutional provision. The most universal finding was the importance of constitutional supremacy and normative hierarchy, which was raised by all 18 participants. Participants regarded the legal system as a hierarchical structure in which subordinate regulations, executive directives, administrative circulars, and institutional rules must remain compatible not only with statutes but also with constitutional norms and principles. Seventeen participants emphasized the protection of fundamental rights and freedoms, suggesting that an intelligent oversight system should be capable of flagging provisions that may affect privacy, property, procedural guarantees, access to information, participation, or other protected interests. Importantly, participants did not suggest that an algorithm should conclusively determine whether a constitutional right had been violated. Rather, automated analysis was regarded as an early-warning and decision-support mechanism capable of identifying potentially high-risk provisions for subsequent legal examination. Legality and institutional competence were also emphasized by 17 participants, reflecting concern about the proliferation of regulations and administrative instruments issued by bodies whose legal authority or delegated competence may be uncertain or exceeded. Sixteen participants referred to both separation of powers and legal certainty, indicating that smart oversight should examine not only the substantive content of legal provisions but also the institutional source of authority, consistency of terminology, temporal validity, amendments, repeal relationships, and predictability of legal consequences. Equality and non-discrimination were raised by 15 participants, who argued that machine-assisted comparison across laws and regulations could help reveal differences in treatment that might not be apparent when legal instruments are reviewed separately. Proportionality and necessity, mentioned by 14 participants, emerged as more interpretive criteria requiring greater human judgment because determining whether a restriction is necessary or excessive frequently depends on context, evidence, and competing constitutional values. Procedural fairness and reviewability were emphasized by 15 participants and reflected the view that constitutional governance is concerned not only with the content of governmental rules but also with the procedures through which public authority is exercised. Overall, these findings show that participants conceptualized smart constitutional oversight as a layered legal assessment combining formal hierarchy, substantive rights protection, institutional competence, procedural legality, and principled evaluation of governmental interference.

Table 3. Intelligent Functions and Accountability Mechanisms Required for Smart Regulatory Oversight

Functional component	Identified function within the proposed oversight system	Participants, n (%)
Machine-readable legislative and regulatory corpus	Conversion and organization of laws, regulations, amendments, repealed provisions, judicially relevant materials, and associated metadata into structured and searchable digital formats	18 (100.0)
Semantic constitutional screening	Use of natural language processing and semantic analysis to compare new or existing provisions with constitutional concepts, principles, rights, and superior legal norms	17 (94.4)
Automated conflict and inconsistency detection	Identification of contradictory requirements, incompatible obligations, inconsistent definitions, and conflicting legal commands across different instruments	17 (94.4)
Detection of duplication, redundancy, and obsolete provisions	Identification of repetitive regulations, unnecessary parallel rules, outdated provisions, and norms that remain formally accessible despite amendment or repeal	16 (88.9)
Constitutional-rights risk flagging	Assignment of preliminary risk indicators to provisions potentially affecting constitutional rights, legal equality, due process, privacy, or other protected interests	15 (83.3)
Regulatory lifecycle and version monitoring	Continuous tracking of enactment, amendment, implementation, suspension, repeal, and replacement of laws and regulations	16 (88.9)
Explainability of machine-generated assessments	Presentation of the legal texts, constitutional standards, linguistic relationships, and analytical reasons underlying each automated warning or recommendation	18 (100.0)
Audit trails and data provenance	Preservation of records showing the data sources, algorithm versions, changes, users, decisions, and analytical steps involved in producing an oversight result	17 (94.4)
Human-in-the-loop validation	Mandatory expert review before machine-generated findings can influence formal constitutional, legislative, regulatory, or administrative decisions	18 (100.0)
Contestability and review	Ability of affected institutions and authorized experts to question, correct, challenge, or request reassessment of algorithmic outputs	15 (83.3)
Algorithmic fairness and bias monitoring	Regular evaluation of models to identify systematic error, discriminatory outcomes, linguistic bias, or unequal treatment embedded in training data or analytical rules	16 (88.9)
Allocation of responsibility and accountability	Clear identification of the institution, legal authority, technical team, and responsible human decision-maker associated with each stage of intelligent oversight	17 (94.4)

The findings presented in Table 3 clarify the practical meaning of “smartness” in constitutional and regulatory supervision. All participants considered the existence of a comprehensive machine-readable legal corpus to be a fundamental prerequisite

because intelligent analysis would be unreliable if laws, regulations, amendments, repeals, institutional mandates, and related legal information remained dispersed across incompatible databases or unstructured documents. Seventeen participants identified semantic constitutional screening as a major function of the proposed system. This function was understood as more advanced than simple keyword matching because constitutional concepts are frequently expressed through different terminology and because a regulatory provision may affect a constitutional principle without explicitly mentioning it. Automated conflict and inconsistency detection was likewise emphasized by 17 participants, particularly because the increasing volume and sectoral fragmentation of regulation make comprehensive manual comparison difficult. Sixteen participants stressed the potential usefulness of automatic identification of obsolete, repetitive, or redundant rules and continuous version monitoring, suggesting that smart oversight could contribute not only to constitutional compliance but also to regulatory simplification and legal certainty. Fifteen participants supported risk-based flagging of provisions that potentially affect constitutional rights; however, they generally treated such risk scores as prioritization mechanisms rather than definitive legal judgments. The accountability-related findings were particularly strong. All 18 participants emphasized both explainability and human-in-the-loop validation. The participants repeatedly distinguished between intelligent assistance and autonomous constitutional adjudication, maintaining that artificial intelligence could search, compare, detect patterns, generate warnings, and prioritize cases, whereas the final determination of constitutional compatibility must remain subject to qualified human legal judgment and the authority of legally competent institutions. Seventeen participants emphasized audit trails and clear responsibility allocation, showing that the system should preserve sufficient evidence to reconstruct how a particular warning was generated and who was responsible for accepting, rejecting, or modifying it. Sixteen participants emphasized algorithmic fairness and bias control, especially because legal language, historical regulatory practices, and incomplete datasets could reproduce existing institutional biases. Contestability was identified by 15 participants as an additional safeguard, meaning that institutions affected by an algorithmic assessment should be able to examine its basis and request reconsideration. These findings indicate that technological sophistication alone was not considered sufficient for smart governance. The participants regarded explainability, traceability, human control, bias monitoring, and institutional responsibility as constitutive elements of the legitimacy of intelligent oversight itself.

Table 4. Institutional Requirements, Implementation Conditions, and Risks of Smart Constitutional Oversight

Implementation dimension	Main finding	Participants, n (%)
Interoperable legal and regulatory databases	Legislative, executive, administrative, and supervisory institutions should be able to exchange standardized legal data through technically compatible systems	17 (94.4)
Cross-institutional information exchange	Oversight requires timely access to draft regulations, final instruments, amendments, implementation information, and relevant institutional decisions	16 (88.9)
Standardized legal metadata and ontology	Legal instruments should be classified according to issuing authority, legal basis, subject matter, hierarchical level, date, status, amendment relationships, affected rights, and relevant constitutional concepts	15 (83.3)
Multidisciplinary oversight structure	Legal experts, constitutional scholars, regulatory specialists, data scientists, information-security professionals, and AI specialists should jointly govern the system	16 (88.9)
Integration into legislative and regulatory workflows	Intelligent review should operate before adoption, at the time of promulgation, and during post-implementation monitoring rather than functioning only as an ex post control mechanism	16 (88.9)
Explicit legal mandate and procedural framework	The authority, legal status, evidentiary value, permissible uses, and procedural consequences of intelligent assessments must be formally defined	17 (94.4)
Data quality and completeness	Missing laws, inaccurate versions, inconsistent amendments, poor digitization, and unreliable metadata were identified as major threats to analytical validity	17 (94.4)
Technical infrastructure and scalability	Secure computing capacity, reliable storage, advanced search, integration capabilities, and scalable processing were regarded as prerequisites for national-level implementation	15 (83.3)
Cybersecurity and privacy protection	Sensitive institutional data, logs, user identities, and potentially confidential legal or administrative information must be protected against unauthorized access and manipulation	16 (88.9)
Algorithm validation and independent auditing	Models should be tested for accuracy, false positives, false negatives, bias, reproducibility, and performance deterioration and should be periodically reviewed by independent experts	16 (88.9)
Professional capacity and specialized training	Judges, lawyers, regulators, legislative experts, civil servants, and technical personnel require training in both the capabilities and limitations of intelligent legal systems	15 (83.3)
Organizational change and resistance management	Institutional resistance, concerns about loss of professional authority, limited digital culture, and reluctance to share data may impede implementation	14 (77.8)
Phased implementation and continuous performance evaluation	The system should begin with selected regulatory domains and gradually expand after evaluation of accuracy, legal usefulness, institutional acceptance, and unintended consequences	17 (94.4)

As indicated in Table 4, the participants regarded institutional and organizational arrangements as equally important as the underlying technological architecture. Seventeen participants emphasized interoperable legal databases, arguing that a smart oversight system cannot function effectively when laws and regulations are scattered across disconnected repositories with different technical formats, inconsistent classifications, and incomplete amendment histories. Sixteen participants stressed cross-institutional information exchange, indicating that effective monitoring requires access not only to final published regulations but also, where legally permissible, to draft instruments, explanatory materials, implementation reports, amendment decisions, and institutional responses. Standardized legal metadata and ontologies were emphasized by 15 participants because intelligent systems require structured information concerning the source, legal hierarchy, subject, temporal status, delegated authority, constitutional relevance, and relationships among legal instruments. Sixteen participants supported the establishment of a multidisciplinary governance structure, reflecting the view that constitutional lawyers alone cannot address model design, data architecture, cybersecurity, or algorithm validation, while technical specialists alone cannot determine constitutional meaning or institutional competence. Participants therefore viewed collaboration between legal and technical expertise as a structural necessity. Integration into existing legislative and regulatory workflows was also mentioned by 16 participants, with the findings indicating that smart oversight would be most useful if it operated at multiple stages: during drafting to prevent defects, immediately before or after adoption to identify legal inconsistencies, and throughout implementation to detect emerging constitutional or regulatory problems. Among implementation conditions, 17 participants emphasized the need for an explicit legal mandate. This finding was especially important because uncertainty concerning the legal status of algorithmic assessments could undermine both institutional adoption and accountability. Participants considered it necessary to specify whether system outputs constitute advisory alerts, mandatory review triggers, technical evidence, or formal components of regulatory procedures. Data quality and completeness were also emphasized by 17 participants and were identified as one of the most immediate practical vulnerabilities. Participants noted that even a highly sophisticated model would generate unreliable results when operating on outdated, incomplete, duplicated, or incorrectly classified legal data. Cybersecurity and privacy concerns were raised by 16 participants, particularly because a national regulatory oversight platform could become a high-value target for unauthorized access, manipulation, or disruption. The same number emphasized independent algorithmic validation, including assessment of accuracy, false-positive and false-negative rates, bias, consistency, and changes in performance over time. Fifteen participants referred to professional training, indicating that successful adoption requires legal professionals to understand how algorithmic outputs are generated and, equally importantly, when those outputs should not be trusted. Organizational resistance was discussed by 14 participants and included concerns regarding institutional autonomy, loss of discretionary authority, reluctance to share information, and a tendency to perceive digital transformation as a threat rather than an administrative support mechanism. Finally, 17 participants favored phased implementation rather than immediate nationwide deployment. Participants proposed beginning with selected regulatory areas characterized by relatively structured data and high volumes of regulation, evaluating the legal and technical performance of the system, identifying unintended consequences, and expanding only after necessary modifications had been made. Overall, the findings show that smart constitutional oversight requires the simultaneous establishment of legal authority, integrated data infrastructure, institutional coordination, professional capability, technical security, and continuous evaluation. The participants therefore understood successful implementation as a process of institutional transformation rather than merely the procurement or installation of an artificial intelligence system.

Taken together, the qualitative findings reveal a coherent model of smart constitutional oversight in which the Constitution provides the primary normative framework, intelligent technologies provide enhanced analytical and monitoring capacity, and accountable public institutions retain ultimate interpretive and decisional authority. The participants did not conceptualize artificial intelligence as a substitute for constitutional institutions or legal professionals. Instead, intelligent oversight was predominantly understood as an augmented governance mechanism capable of strengthening the speed, consistency, comprehensiveness, and anticipatory capacity of conventional supervision. In this model, legal texts would be continuously organized, compared, screened, and monitored; potentially unconstitutional or inconsistent provisions would be identified at an early stage; affected constitutional principles and rights would be made visible to competent experts; and the reasoning behind each automated alert would remain traceable and open to human scrutiny. At the same time, the findings indicate that the constitutional legitimacy of such a system depends on firm boundaries around automation. Final constitutional judgments, authoritative interpretations, and decisions producing binding legal consequences should remain within legally established

institutional structures. Accordingly, smart oversight emerged from the interviews not as automated constitutional governance but as a constitutionally constrained, technologically supported, transparent, reviewable, and human-centered model of regulatory governance designed to improve the quality and responsiveness of the contemporary legal system.

4. Discussion and Conclusion

The present study sought to identify and explain the constitutional foundations, intelligent mechanisms, accountability safeguards, institutional requirements, and implementation conditions of smart oversight of laws and regulations within the framework of modern governance. The findings revealed five interconnected themes: constitutional legitimacy and normative conformity; intelligent detection and continuous regulatory monitoring; transparent, accountable, and human-centered algorithmic governance; institutional integration and regulatory coordination; and implementation capacity, safeguards, and risk control. Taken together, these findings indicate that smart constitutional oversight should not be understood as the simple automation of legal review. Rather, it represents a socio-legal and technological governance architecture in which computational tools enhance the capacity of public institutions to identify potential inconsistencies, constitutional risks, overlaps, and regulatory defects, while constitutional interpretation and legally binding decisions remain within the authority of competent human institutions. This interpretation is consistent with broader constitutional scholarship emphasizing that the rule of law depends on institutionalized constraints on governmental power, reviewability, and adherence to higher-order legal norms rather than on the mere existence of formal legal rules (Waldron, 2021). It is also compatible with comparative constitutional perspectives that conceptualize constitutional justice as a system of interacting institutions and procedures rather than a function confined exclusively to courts (Sweet & Ryan, 2020).

The first major finding concerned constitutional legitimacy and normative conformity. Participants emphasized constitutional supremacy, protection of fundamental rights, equality, institutional competence, separation of powers, legal certainty, proportionality, and procedural fairness as the core normative criteria of smart oversight. This finding suggests that any intelligent system designed to examine legislation and regulations must be constitutionally oriented from the outset. A system limited to detecting linguistic inconsistencies or formal contradictions would be insufficient because constitutionality involves both formal and substantive dimensions. The prominence of constitutional supremacy in the findings corresponds with the traditional understanding of judicial review as a mechanism for ensuring that governmental action remains within higher legal limits. Treanor's account of the development of the modern theory of the judiciary demonstrates the historical significance of judicial institutions in preserving constitutional limitations on political power (Treanor, 2020). Similarly, Waldron emphasizes the centrality of courts and legal institutions to the rule of law and the necessity of structuring public authority through legally reviewable processes (Waldron, 2021). The present findings extend this logic into the technological domain by suggesting that intelligent systems may assist constitutional institutions in identifying possible violations before such issues reach the stage of formal litigation.

The emphasis on separation of powers and institutional competence further demonstrates that the participants did not regard smart oversight as a substitute for constitutional institutions. Instead, they viewed technology as an instrument operating within established allocations of authority. This interpretation aligns with Akhtar's discussion of Montesquieu's theory of separation of powers, which stresses both institutional differentiation and the need for flexibility in the interaction among branches of government (Akhtar, 2023). Sigalet similarly analyzes judicial review through the relationships among separated yet interacting political powers, indicating that constitutional supervision cannot be detached from institutional structure (Sigalet, 2025). The present study therefore supports the proposition that a smart oversight system must be designed in a manner that strengthens, rather than disrupts, constitutional balances. Algorithmic systems may detect possible conflicts or identify cases requiring scrutiny, but they cannot legitimately assume the constitutional authority of legislatures, courts, or supervisory institutions. This distinction is particularly important in jurisdictions characterized by multiple bodies exercising legislative, executive, administrative, and regulatory functions.

The finding concerning legality and institutional competence is also strongly supported by previous research on administrative power. Participants emphasized that smart oversight should examine whether an institution issuing a regulation possesses adequate statutory authority and whether it has acted within the limits of delegated competence. This concern reflects

longstanding debates surrounding executive discretion and administrative policymaking. Jones shows that constitutional thought concerning executive discretion has historically been shaped by the need to distinguish lawful discretion from exercises of power that escape legal limitations (Jones, 2026). Rose-Ackerman likewise demonstrates that modern administrative policymaking creates an enduring tension between the need for flexible and expert executive action and the necessity of democratic and legal accountability (Rose-Ackerman, 2022). The present findings indicate that intelligent oversight could contribute to resolving this tension by systematically linking regulatory instruments to their statutory bases, institutional mandates, and superior constitutional norms, thereby making possible instances of ultra vires action easier to identify.

The participants' emphasis on bureaucratic authority and institutional boundaries also corresponds with research on bureaucratic autonomy. Bersch and Fukuyama argue that bureaucratic autonomy is a significant feature of modern administrative systems, but that its meaning and legitimacy depend on institutional context and relationships with political control (Bersch & Fukuyama, 2023). From the perspective of the present study, intelligent oversight could provide an additional layer of visibility over administrative rulemaking without necessarily eliminating legitimate bureaucratic discretion. This is an important distinction because an effective modern regulatory system requires administrative expertise, yet such expertise must remain linked to statutory authorization and constitutional accountability. Bernstein's discussion of administrative constitutionalism further supports this finding by demonstrating that administrative agencies themselves participate in constitutional development through routine interpretations and policy decisions (Bernstein, 2021). Consequently, the proposed smart oversight model must be capable of examining administrative constitutional practice as well as formally enacted legislation.

The second major theme, intelligent detection and continuous regulatory monitoring, highlighted the potential of computational tools to respond to the increasing scale and complexity of contemporary regulation. Participants identified machine-readable legal corpora, semantic constitutional screening, automatic detection of conflicts, identification of obsolete or duplicate provisions, constitutional-rights risk flagging, and regulatory lifecycle monitoring as important functions. These findings indicate that the main advantage of intelligent supervision lies in its capacity to perform systematic, continuous, and large-scale analysis that would be difficult to achieve through exclusively manual review. The relevance of this finding is particularly evident in the context of legislative control over administrative rulemaking. Costa and colleagues show that the supervision of rulemaking is institutionally complex and may vary according to the structure of legislative-executive relations (Costa et al., 2026). The present study suggests that intelligent monitoring could strengthen such supervision by giving oversight institutions earlier and more structured access to information concerning the content, origin, legal basis, and possible conflicts of regulatory rules.

This finding also corresponds with Bodrova's analysis of the legal framework for oversight over local self-government, which demonstrates that effective supervision is closely connected with the broader organization of state and legal institutions (Bodrova, 2023). The capacity of an intelligent system to track rules across institutions could be particularly valuable where authority is dispersed among central, local, regulatory, and administrative bodies. In such contexts, inconsistency may result not from an intentional constitutional violation but from institutional fragmentation, overlapping mandates, poor information exchange, and outdated regulatory records. The finding that participants valued the detection of duplication, obsolete rules, and conflicting regulations therefore indicates that smart oversight may serve both a constitutional and a regulatory-quality function.

The findings concerning continuous monitoring are also important when compared with conventional judicial review. Judicial review generally operates after a legal dispute has emerged, and its effectiveness depends on access to courts, procedural standing, institutional capacity, and judicial independence. Pandit's distinction between judicial review and appeal underscores that review is focused on the legality of governmental action rather than simple reconsideration of its merits (Pandit, 2022). Faiez similarly demonstrates the importance of judicial oversight over administrative decisions for maintaining legality and protecting individuals against unlawful public action (Faiez, 2022). However, the present findings suggest that judicial review can be complemented by earlier forms of detection. If potentially problematic provisions can be identified during drafting or immediately after promulgation, some constitutional defects may be addressed before they generate disputes or produce extensive legal consequences.

This preventative capacity does not diminish the importance of courts. On the contrary, it may enhance judicial and constitutional oversight by directing attention toward regulatory instruments that pose higher risks. Bwire and colleagues

emphasize that the performance of courts undertaking review of legislative action must be assessed in relation to their institutional capacity and practical effectiveness (Bwire et al., 2022). Intelligent systems could potentially improve this capacity by organizing large bodies of legal information, detecting relevant legislative relationships, and facilitating identification of constitutional issues. At the same time, the findings strongly reject the idea that automated systems should themselves make final determinations of constitutionality. This distinction preserves the difference between computational risk detection and authoritative legal review.

The third theme, transparent, accountable, and human-centered algorithmic governance, was among the strongest findings of the study. Participants consistently emphasized explainability, audit trails, data provenance, human validation, contestability, fairness, and explicit responsibility for algorithmic outputs. These findings show that the constitutional legitimacy of smart oversight depends not merely on accuracy but also on the procedural characteristics of the system. An algorithmic conclusion that cannot be explained, questioned, or traced would create accountability problems even if it were statistically reliable. This concern resonates with the broader constitutional principle that governmental decisions affecting rights or institutional authority should remain open to legal scrutiny. Azeem and Sultan's analysis of ouster clauses illustrates the importance of preserving the reach of judicial review against attempts to shield governmental decisions from scrutiny (Azeem & Sultan, 2023). In the context of intelligent governance, opacity may function as a technological equivalent of reduced reviewability if decision-makers cannot reconstruct or challenge the basis of an automated output.

The finding regarding contestability is also compatible with the broader understanding of judicial and administrative review developed in previous studies. Pangalangan's discussion of judicial review in the context of the Asian Development Bank Administrative Tribunal emphasizes the role of review mechanisms in maintaining procedural legality in specialized administrative settings (Pangalangan, 2022). The present study extends this logic to algorithmic systems by indicating that the outputs of smart oversight should be subject to reconsideration, correction, and professional disagreement. Human-in-the-loop validation emerged as essential because legal interpretation frequently depends on contextual reasoning that cannot be reduced to formal textual comparison. Martenet's comparative examination of judicial deference to administrative interpretations demonstrates the complexity involved in deciding how much weight should be given to administrative expertise (Martenet, 2020). An intelligent system therefore should not treat every difference in interpretation as a constitutional violation. Instead, it should function as an analytical aid capable of highlighting potentially significant issues for qualified human review.

The emphasis on human control also reflects concerns arising from the protection of institutional independence. Pérez's checks-and-balances approach to judicial independence shows that autonomy must be understood within a network of institutional relationships and accountability mechanisms (Pérez, 2020). Similarly, smart oversight should not create a technologically autonomous authority operating beyond established legal institutions. If an algorithmic platform could effectively determine constitutional compatibility without accountability to a recognized institution, it would generate a new center of public power lacking conventional constitutional legitimacy. The participants' insistence on human validation, responsibility allocation, and auditability therefore appears consistent with constitutional theory emphasizing accountable institutional authority.

The fourth theme concerned institutional integration and regulatory coordination. Participants stressed interoperable databases, cross-institutional information exchange, standardized legal metadata, multidisciplinary oversight structures, and integration of smart review into legislative and administrative workflows. These findings suggest that technological intelligence depends fundamentally on institutional connectivity. A fragmented legal information environment cannot support reliable automated oversight because the system may lack access to current amendments, repeal relationships, delegated authorities, or relevant institutional decisions. This finding is supported by previous work showing that oversight is conditioned by the structure of government itself. Costa et al. demonstrate that legislative control over rulemaking depends on institutional arrangements and patterns of dependency between legislative and executive actors (Costa et al., 2026), while Bodrova shows how supervisory frameworks are shaped by state-legal organization and processes of institutional integration (Bodrova, 2023). The present findings therefore reinforce the need to view smart oversight as a governance infrastructure rather than as a standalone software application.

The findings also show that institutional integration should not undermine autonomy and checks and balances. Excessive centralization of oversight may create risks similar to those associated with excessive concentration of political power. Research on court curbing demonstrates that political institutions may attempt to weaken judicial authority or reshape oversight arrangements when judicial decisions conflict with political objectives (Catalano, 2022). Tommasini and colleagues likewise demonstrate that constitutional review can operate under conditions of backlash and political override, highlighting the importance of institutional resilience (Tommasini et al., 2021). Koncewicz's analysis of Poland further illustrates how constitutional institutions can become vulnerable when formal legality is used within broader political struggles over judicial authority (Koncewicz, 2022). Consequently, a smart oversight infrastructure should distribute functions carefully, preserve institutional independence, and avoid concentrating control over legal data, algorithm design, and constitutional interpretation within a single political or administrative actor.

The fifth theme concerned implementation capacity, safeguards, and risk control. Participants emphasized an explicit legal mandate, data quality, secure technical infrastructure, cybersecurity, algorithm validation, professional training, organizational readiness, and phased implementation. This finding demonstrates that the transition toward smart constitutional oversight cannot be achieved simply through acquisition of artificial intelligence tools. A legal basis is necessary to define the status of algorithmic outputs, the authority of the institution operating the system, access to regulatory information, procedures for challenging findings, and responsibility for errors. The importance of formal legal safeguards is consistent with Pasculli and Stanford's discussion of rule-of-law concerns arising when exceptional regulatory mechanisms become normalized without sufficient procedural protection (Pasculli & Stanford, 2022). It also accords with Craig's analysis of constitutional change, which shows that legal systems evolve through formal and informal mechanisms and therefore require attention to the modalities through which institutional transformations acquire legitimacy (Craig, 2022).

The importance participants attached to transparency and public accountability can also be understood in light of previous scholarship. Woods and colleagues demonstrate that executive accountability remains essential even in sensitive fields such as national security, where secrecy may otherwise limit effective scrutiny (Woods et al., 2021). Chitunhu and Saruchera show that legislative constraints can shape the ability of journalists to expose corruption and participate indirectly in accountability processes (Chitunhu & Saruchera, 2026). Krehbiel's analysis of public awareness and unpopular courts further illustrates that constitutional oversight operates within a broader environment of public knowledge and institutional legitimacy (Krehbiel, 2020). These studies support the present finding that a smart oversight system should not become a closed technical structure. Its outputs, procedures, and institutional consequences should be sufficiently transparent to permit appropriate legal, professional, and public scrutiny.

Overall, the findings support a model of smart constitutional oversight as augmented rather than automated governance. Intelligent technologies may improve the speed, breadth, and consistency of regulatory analysis, but they do not eliminate the need for constitutional interpretation, institutional independence, judicial review, legislative accountability, or administrative responsibility. Instead, their principal value lies in strengthening the informational capacity of those institutions. This interpretation is consistent with the literature on constitutional justice, administrative governance, and the rule of law, which collectively emphasizes that effective supervision depends on multiple interacting institutions rather than a single mechanism (Rose-Ackerman, 2022; Sweet & Ryan, 2020). The findings therefore suggest that the most defensible model is a layered oversight architecture in which machine-readable legal data and computational analysis provide early warnings and structured evidence, legal experts evaluate those findings, and constitutionally competent institutions retain authority over binding decisions. Such a model could enhance preventive constitutional control while avoiding the risks associated with substituting technological authority for legal judgment.

This study has several limitations that should be considered when interpreting its findings. First, the research was qualitative and involved 18 experts working in Tehran; therefore, the findings are analytically transferable rather than statistically generalizable to all legal, governmental, or regulatory institutions. The concentration of participants in Tehran may have resulted in greater representation of perspectives associated with central governmental, academic, and policy institutions than those of provincial or local authorities. Second, the study relied primarily on expert interviews and therefore captured participants' professional perceptions and conceptual judgments rather than directly observing the performance of an

operational smart constitutional oversight system. Because such a comprehensive system was not experimentally implemented within the present study, issues such as actual algorithmic accuracy, false-positive and false-negative rates, user behavior, organizational resistance, cost, interoperability, and unintended consequences could only be explored conceptually. Third, although maximum variation was sought in participant selection, other relevant actors, including judges, parliamentary staff, local-government officials, civil-society representatives, software developers, and citizens directly affected by regulatory decisions, may identify additional requirements or risks. Finally, the rapidly changing nature of artificial intelligence and digital governance means that technological capabilities and associated legal concerns may evolve, requiring periodic reassessment of the proposed conceptual framework.

Future studies should test and refine the proposed framework through empirical, comparative, and applied research. Quantitative studies may develop validated instruments for measuring institutional readiness for smart constitutional oversight and assess the relative importance of the dimensions identified in this study across larger samples of legal and governmental professionals. Comparative research across different jurisdictions could examine how constitutional structure, judicial review, administrative organization, and legislative procedures influence the design of intelligent oversight systems. Future researchers should also conduct pilot studies in specific regulatory fields and evaluate actual system performance using measurable indicators such as accuracy of conflict detection, identification of obsolete rules, rate of false constitutional-risk alerts, time saved in legal review, and user acceptance. Experimental studies comparing human-only, AI-only, and human-AI collaborative review could provide stronger evidence regarding the appropriate division of responsibilities between experts and intelligent systems. Additional research is also required on constitutional rights impact assessment, algorithmic explainability in legal reasoning, bias in legal language models, security of regulatory databases, and mechanisms for contesting automated findings. Longitudinal studies could further investigate how institutional behavior, legal doctrine, and professional roles change after the introduction of intelligent oversight technologies.

In practice, the development of smart constitutional oversight should proceed gradually and through a legally defined, human-centered, and institutionally coordinated strategy. Public authorities should first establish a comprehensive and continuously updated machine-readable repository of laws, regulations, amendments, repealed provisions, issuing authorities, statutory mandates, and other relevant legal metadata. A multidisciplinary governance structure should then be created involving constitutional and public-law specialists, legislative experts, regulatory officials, data scientists, artificial-intelligence specialists, information-security professionals, and system auditors. The role of artificial intelligence should be expressly limited to functions such as search, classification, comparison, risk detection, inconsistency identification, regulatory mapping, and generation of review alerts, while final legal judgments and binding decisions should remain with authorized human institutions. Every automated alert should provide understandable reasons, identify the relevant legal sources, preserve an audit trail, and be open to expert correction and institutional challenge. Implementation should begin with limited pilot projects in regulatory areas where legal data are relatively structured and the benefits of continuous monitoring are clear. Performance should then be evaluated before expansion to additional domains. Parallel investment should be made in cybersecurity, data-quality control, professional training, organizational change management, and procedures for independent algorithm auditing. Through such an approach, intelligent oversight can strengthen constitutional compliance and regulatory quality while preserving legal accountability, institutional competence, and human responsibility.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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