



Digital Constitutionalism and Human Rights: A Comparative Constitutional Response to Global Technological Challenges

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Abstract

The rapid growth of digital technologies has reshaped communication, governance, and the interpretation of constitutional rights. This study examines how constitutionalism, traditionally designed to limit state power, must adapt to new digital challenges such as surveillance, data exploitation, algorithmic governance, and restrictions on online expression. Using a normative-comparative approach, this study examines constitutional texts, landmark decisions, and regulatory frameworks from Germany, India, South Africa, and Indonesia, alongside international instruments such as the ICCPR and the GDPR. Findings highlight three main patterns. First, privacy and data protection are increasingly recognized as constitutional rights, although this recognition is inconsistent across jurisdictions. Second, digital freedom of expression remains a contested issue, with some courts applying proportionality while others rely on administrative controls. Third, responses to state surveillance reveal a global trend toward stronger safeguards; yet, significant gaps persist in developing contexts, such as Indonesia. This article advances the concept of digital constitutionalism as a paradigm shift extending constitutional protections beyond the state to powerful technology corporations. Theoretically, it reframes constitutionalism in the digital era; practically, it offers normative guidance for courts and policymakers to reinforce digital rights. Ultimately, digital constitutionalism is vital not only for protecting individual rights but also for sustaining democracy in the digital age.

Keywords: Digital Constitutionalism; Human Rights; Privacy; Freedom Of Expression; State Surveillance; Comparative Constitutional Law; Indonesia

Introduction

The constitution was essentially born as a social contract that reflects a fundamental agreement on the limits of state power and the protection of fundamental human rights (Bhuta, 2025; Ferrajoli, 2001; Michelman, 2003). Since its inception, constitutionalism has served as a “gatekeeper” against potential tyranny, both by rulers and by the majority. However, the development of digital technology presents new challenges that the framers of the classic constitution never imagined (Breyer, 2002; Celeste, 2019; Loughlin, 2015; Young, 2007). Whereas in the past the main threat to human rights came from the state through visible instruments of power, today that threat also arises from algorithms, big data, and artificial intelligence controlled by state entities and global corporations (Ahmad et al., 2025; Charamba, 2022; DoCarmo et al., 2021; Land & Aronson, 2020; Liu et al., 2019; McGregor et al., 2019). Thus, constitutionalism is required to evolve to remain relevant in responding to the dilemmas of the digital age.

The development of digital technology in the last two decades has drastically changed the way of life of global society. Based on the 2023 International Telecommunication Union (ITU) report, more than 5.4 billion people, or around 67% of the world's population, are connected to the internet. This increase in digital access brings great opportunities for the democratization of information and political participation. However, at the same time, serious issues have also arisen, such as the misuse of personal data, disinformation, hate speech, and mass surveillance by the state and technology corporations. This phenomenon has created a dilemma between the protection of human rights and the need for security management in the digital space.

The urgency of this research lies in the fact that the digital space has now become a new arena for the realization and violation of constitutional rights (Bleshchik et al., 2021; Custers, 2022; Hanafi, 2025; Teubner, 2015; Yilma, 2017). For example, the 2022 Freedom House report shows a downward trend in internet freedom for 12 consecutive years, characterized by practices of content blocking and surveillance without an adequate legal basis. In the Indonesian context, large-scale personal data leaks involving digital platforms in 2022 reveal the weakness of constitutional instruments in providing guarantees for the protection of privacy rights. This shows that digital issues are not merely technological issues, but touch on the core of constitutionalism: the relationship between state power, individuals, and the guarantee of human rights.

However, existing academic studies still show limitations. Many previous studies have focused solely on sectoral aspects, such as the legal analysis of data protection, freedom of expression on social media, or cybersecurity (Haber & Zarsky, 2017; Helm & Nasu, 2021; Karabacak et al., 2016; Kosseff, 2017; Mantelero et al., 2020; Müller, 2024; Rochefort, 2020; Sumartono et al., 2024; Wylde et al., 2022). Meanwhile, discourse on digital constitutionalism, which views digital space as an integral part of the development of constitutional principles, is still minimal. This is the research gap, specifically the lack of comprehensive studies that link global technological dynamics with constitutional responses in protecting human rights.

Based on this background, this study aims to analyze the global challenges of technology to constitutionalism, identify constitutional responses in various jurisdictions, and formulate a concept of digital constitutionalism that developing countries, including Indonesia, can adapt. The contribution of this research is twofold: theoretically, it expands the discourse on constitutionalism with a digital dimension; practically, it provides recommendations for policymakers and constitutional courts in strengthening the protection of digital rights as part of the constitutional rights of citizens.

Research Objectives

This research is primarily intended to address the fundamental question of how constitutionalism can adapt to the global challenges posed by the development of digital technology. Amidst the increasingly digitized world, constitutions are not only required to function as instruments that limit state power, but also as normative devices capable of guaranteeing human rights in the digital space. Thus, this research aims to build a more comprehensive understanding of digital constitutionalism as a new paradigm in contemporary constitutional law.

More specifically, this study aims to critically examine the global challenges posed by digital technology to the principles of constitutionalism, with an emphasis on issues of privacy, freedom of expression, and surveillance practices by the state and technology corporations. Through a comparative approach, this study also seeks to examine the constitutional responses of various jurisdictions, identifying normative models that can serve as references for other countries, including Indonesia.

Furthermore, this study seeks to formulate a concept of digital constitutionalism that is not only descriptive but also normative and prescriptive. This concept is expected to broaden the academic discourse on the relationship between constitutional law, technology, and human rights. At the same time, this research makes practical contributions, specifically providing policy recommendations for legislators and constitutional courts on how to strengthen the protection of citizens' digital rights. Thus, the purpose of this research is not only to produce a conceptual review but also to provide concrete directions for constitutional law reform in the digital age.

Research Methodology

This study employs a legal-normative approach (Negara, 2023), with an emphasis on comparative analysis of constitutional practices across various jurisdictions. This approach was chosen based on the need to understand the dynamics of the relationship between the principles of constitutionalism and the challenges of cross-border digital technology.

The legal-normative study was conducted through an in-depth review of constitutions, legislation, and relevant decisions of the constitutional court. At the same time, a comparative analysis was performed to assess variations in constitutional responses among countries to digital issues. Data collection was carried out through a search of primary and secondary legal materials.

Primary legal materials include constitutional texts, laws related to data protection, freedom of expression, and cybersecurity, as well as decisions from constitutional courts in countries such as Germany, India, South Africa, and Indonesia. The selection of these jurisdictions was based on considerations of variations in legal traditions and the intensity of constitutional court involvement in digital issues. Secondary legal materials consist of academic articles published in reputable international journals, reports from global institutions such as the United Nations Human Rights Council (UNHRC), the Office of the High Commissioner for Human Rights (OHCHR), and the Council of Europe, as well as legal literature discussing the relationship between technology, human rights, and constitutionalism.

The collected data was analyzed using content analysis and comparative constitutional law methods. Content analysis was used to identify normative principles contained in legal documents and court decisions, particularly those related to privacy rights, freedom of expression, and state surveillance. Comparative legal analysis was conducted to examine the differences and similarities between jurisdictions, so that generalizations could be drawn about constitutional responses to digital challenges.

The entire analysis process was conducted systematically to ensure the repeatability of the research. Primary sources were accessed through internationally available legal databases, such as HUDOC for European Court of Human Rights rulings, SCC Online for Indian Supreme Court rulings, and the official website of the Bundesverfassungsgericht for German Constitutional Court

rulings. In this way, this research can be replicated by other researchers who wish to examine similar issues or extend them to additional jurisdictions.

The chosen methodology enables this study not only to produce a normative description but also to offer a conceptual framework that can be applied across disciplines to assess the extent to which constitutions can adapt to the global challenges posed by digital technology. Thus, the approach used provides space for integrating constitutional law perspectives, human rights theory, and global socio-political dynamics that shape contemporary digital reality.

Result

Privacy Rights and Personal Data Protection

This analysis reveals that privacy issues are crucial in constitutional responses to the digital age. As a pioneer, Germany, through the Census Case (1983), introduced the doctrine of informational self-determination, which gives individuals sovereignty to determine the use of their personal data (Eberle, 2001, 2012; Legg et al., 2012). This fundamental principle then reached its peak in the European Union's General Data Protection Regulation (GDPR), which not only regulates but further reinforces data protection as a fundamental human right. Thus, this European model demonstrates the progressive evolution of constitutionalism by explicitly incorporating digital privacy guarantees into the framework of constitutional rights (Baer, 2009; Bradford, 2023; Celeste & Formici, 2024; Lenaerts, 2021).

In contrast to the constitutional landscape in Europe, Indonesia only passed the Personal Data Protection Law (PDP Law) in 2022. Although this is an important step forward, the right to personal data protection in Indonesia does not yet have explicit legitimacy in the 1945 Constitution. As a result, a significant normative gap has been created. This situation is particularly vulnerable when compared to jurisdictions such as the European Union, which has already affirmed digital privacy as an integral and inseparable part of its citizens' constitutional rights.

Therefore, strategic and visionary measures are necessary to strengthen personal data protection in Indonesia (Astariyani et al., 2023; Marune & Hartanto, 2021; Prasetyo et al., 2025). A constitutional amendment to recognize the right to personal data protection as a human right is the ideal solution to provide a solid and permanent foundation. In addition, the Constitutional Court can also play a progressive role by interpreting the right to privacy in the 1945 Constitution dynamically and adaptively to include personal data protection, pending the political momentum for such an amendment. In this way, Indonesia will not only have regulations at the statutory level but also a strong constitutional foundation, equivalent to the highest global standards in digital privacy protection.

Freedom of Expression in the Digital Space

Research findings confirm that progressive court decisions have pioneered mainly constitutional developments regarding freedom of expression in the digital space (Balkin, 2008). As a paradigmatic example, the Indian Supreme Court in its landmark decision *Shreya Singhal v. Union of India* (2015) explicitly applied the principle of proportionality by overturning a section of the Information Technology Act that was deemed to restrict digital expression too broadly and irrationally. On a different continent, courts in South Africa have also demonstrated a similar commitment by emphasizing the importance of striking a balance between protecting against hate

speech and maintaining a free democratic space for all citizens. Thus, these two jurisdictions illustrate the vital role of the judiciary in protecting citizens' digital rights from arbitrary state intervention.

In contrast to the strong judicial approach in India and South Africa, Indonesia exhibits a contrasting trend. Restrictions on freedom of expression in the digital world are often still carried out through administrative approaches and executive policy instruments, such as ministerial regulations or circular letters, which frequently escape adequate constitutional review (Alvina et al., 2022; Aziz & Ristawati, 2020; Ghofur, 2024; Misbahul Mujib & Muchlas, 2023; Tommi Imanuel & Fauzan, 2023). As a result, this practice not only has the potential to violate fundamental rights but also highlights the immaturity of the checks and balances mechanism in protecting digital rights in Indonesia. The absence of strong judicial precedents to overturn vague articles or repressive executive policies further weakens the position of citizens before the state.

Therefore, encouraging a more progressive role for the Constitutional Court (MK) is a must. The MK needs to learn from its counterparts in India and South Africa by actively using proportionality and strict scrutiny tests for every law and de facto policy that restricts digital expression (Kaur, 2024). In addition, the participation of civil society in filing judicial reviews of problematic articles such as the ITE Law needs to be encouraged even more vigorously. Only with these corrective measures can Indonesia transition from a paradigm of administrative control to a solid constitutional guarantee of freedom of expression, ensuring that digital space truly functions as an arena for healthy democracy.

State Surveillance and Constitutional Practice

The issue of state surveillance occupies a position as one of the most complex areas of testing in digital constitutionalism (Celeste, 2019; De Gregorio & Radu, 2022; Teubner & Golia, 2023). Strict international standards have been established through the *Big Brother Watch v. United Kingdom* (ECHR, 2018) ruling, which firmly affirms the state's obligation to ensure that all forms of digital surveillance are subject to the rule of law, have a clear and accessible legal basis, and are effectively monitored by independent institutions. This landmark ruling not only sets a precedent for European countries but also reflects a growing global consensus to limit mass surveillance practices so that they are proportional and do not violate citizens' privacy rights.

In contrast to these strict standards, the legal framework for surveillance in Indonesia still leaves high-risk gaps in legitimacy. The provisions on wiretapping in the Electronic Information and Transactions Law (EIT Law) and several other sectoral regulations are considered weak, overbroad, and inadequate in ensuring accountability, raising serious concerns about potential abuse of authority. Although the Constitutional Court (MK) has conducted formal reviews of several related articles, its decisions have not yet fully adopted or reflected the standards of proportionality and accountability that are common in international jurisprudence (Hirschl, 2018). As a result, Indonesia lags in creating a surveillance mechanism that is transparent and in line with the principles of the rule of law.

Therefore, strategic efforts to reform the legal framework for oversight are imperative. The first and most urgent step is to conduct a more substantive and in-depth judicial review of the wiretapping articles, encouraging the MK to adopt a strict three-part test of proportionality, as applied in the *Big Brother Watch* ruling. In addition, establishing a genuinely independent and multi-stakeholder wiretapping oversight agency is also essential to monitor wiretapping practices

carried out by law enforcement and intelligence agencies. Only by implementing these corrective measures can Indonesia establish a surveillance system that is not only effective for national security but also respects the constitutional rights of its citizens, aligning itself with global trends in constitutionalism.

Discussion

The above findings reveal that constitutionalism in the digital age is facing a paradigmatic transformation. While classical constitutions were designed to control state power, constitutions are now also required to regulate non-state power, especially global technology corporations that have significant control over data, information, and algorithms.

In this context, the theory of transnational constitutionalism (Slaughter, 2004) becomes relevant because it emphasizes the need for coordination among jurisdictions in responding to global challenges that individual countries cannot overcome (Ferrarese, 2009; Hirschl, 2018; Schwöbel, 2010).

Furthermore, the results of the study show the need to revise the fundamental doctrine of constitutionalism. The principle of separation of powers is no longer sufficient to ensure accountability, because the distribution of digital power is not always in the hands of state institutions (Caruso, 2025; Michaels, 2015). Therefore, new concepts such as algorithmic accountability and digital due process should be considered as constitutional instruments to protect digital rights effectively.

In the Indonesian context, the Constitutional Court plays a vital role as the guardian of the constitution (Arifin, 2023, 2024; Eddyono, 2017; Irawan et al., 2024; Latif et al., 2024; Mendy & Sarr, 2025; Moh. Thohir & Didik Sukriono, 2024; Prasetyaningih, 2020; Setyawan et al., 2024; Surono & Widjaja, 2025). Through progressive interpretation, the Constitutional Court can close the normative gap between the 1945 Constitution and international standards on digital rights. However, this success also depends on the courage of legislators in harmonizing sectoral regulations, such as the ITE Law and the PDP Law, with the principles of digital constitutionalism.

Thus, this study demonstrates that the challenges posed by digital technology necessitate a reevaluation of the fundamental values enshrined in the Constitution. Digital constitutionalism is not only crucial for enhancing the protection of individual rights but also for ensuring the sustainability of democracy in a digital space that is becoming increasingly complex and vulnerable to power abuse.

Scientific Novelty and Research Contribution

The main novelty of this research lies in its systematic attempt to construct a conceptual framework of digital constitutionalism as a new paradigm in the study of constitutional law and human rights. Most previous studies have only highlighted specific issues, such as data protection, freedom of expression, or state surveillance, without placing them within a more comprehensive theoretical construct of constitutionalism. This article contributes by linking these issues into a single, comprehensive analytical framework, thereby providing a comprehensive perspective on how constitutions should respond to developments in digital technology.

In addition, this study adds a comparative dimension that is rarely explored in depth in similar studies. By examining the constitutional responses of various jurisdictions, including Germany, India, South Africa, and Indonesia, this study presents a cross-traditional legal overview of digital rights

protection patterns. This approach not only reveals normative variations but also identifies common ground that can serve as the basis for universal standards in addressing digital challenges. This gives rise to a scientific innovation in the form of a proposed concept of digital due process and algorithmic accountability as constitutional instruments relevant in the age of algorithms.

The contribution of this research is twofold, both theoretically and practically. Theoretically, this article broadens the scope of constitutionalism studies by integrating the digital dimension, which has been previously marginalized in academic discourse. This is important to encourage a paradigm shift from classical constitutionalism, which focuses on the state, to transnational constitutionalism, which also includes non-state actors such as technology corporations. In practical terms, this research provides normative references that can be utilized by policymakers and constitutional courts, particularly in Indonesia, to formulate more effective legal measures to protect digital rights. Thus, this research not only contributes to the advancement of science but also has a tangible impact on enhancing constitutional governance in the digital age.

Conclusion

This study confirms that the development of digital technology has presented serious challenges to the principles of constitutionalism, especially in the protection of human rights. The rights to privacy, freedom of expression, and limits on state surveillance, which were initially formulated in an analog context, must now be reinterpreted to remain relevant in the digital world. Cross-jurisdictional comparisons show that despite variations in approach, there is a global consensus that digital rights are an integral part of constitutional rights that must be effectively protected.

Reflection on these findings suggests that classical constitutionalism is no longer sufficient if it focuses solely on controlling state power; instead, it must evolve into digital constitutionalism that also considers the role of non-state actors, particularly global technology corporations. In the Indonesian context, this study highlights the normative gap between the 1945 Constitution and international standards, necessitating progressive steps through both Constitutional Court interpretations and sectoral regulatory harmonization.

Thus, this study makes a conceptual contribution in the form of a digital constitutionalism framework, serving as a new paradigm, while also offering practical recommendations for policymakers and judicial institutions on how to strengthen the protection of digital rights. Ultimately, the success of constitutional adaptation to technological challenges not only determines the quality of human rights protection but also ensures the sustainability of democracy in an increasingly complex digital era.

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