

## REGULATORY TRANSFORMATION OF THE DIGITAL ECONOMY AND THE CHALLENGES OF PERSONAL DATA PROTECTION IN INDONESIA: A LITERATURE REVIEW

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### Abstract

The transformation of digital economy regulations in Indonesia is a response to the rapid development of information and communication technology that has changed the national economic landscape. The Indonesian government has initiated various policies and regulations to support the growth of the digital economy, including strengthening personal data protection through the Personal Data Protection Law (PDP Law). However, the implementation of these regulations still faces various challenges, such as disharmony between institutions, weak law enforcement, and low digital literacy among the public and business actors. In addition, the rise of personal data leakage cases highlights the importance of monitoring and strengthening cybersecurity infrastructure. This literature review analyses the dynamics of digital economy regulatory transformation and the challenges of personal data protection in Indonesia, and recommends the need for regulatory harmonisation, improved digital literacy, and multi-stakeholder collaboration to create a safe, inclusive, and sustainable digital ecosystem.

**Keywords:** Digital Economy, Regulation, Personal Data Protection, Indonesia, Legal Transformation, Digital Literacy

### Introduction

Digital economic transformation in Indonesia has become an inevitable phenomenon amid the rapid development of information and communication technology. This progress has driven fundamental changes in various aspects of life, ranging from the way of doing business, public consumption patterns, to governance. Indonesia, as the country with the largest population in Southeast Asia, has enormous digital economy potential, supported by high internet penetration and a young, technology-adaptive population (Suratman Hukom & Nurma Humi., 2025)

The growth of the digital economy in Indonesia not only expands business opportunities, especially for Micro, Small and Medium Enterprises (MSMEs), but also creates dynamic new business models. Digitalisation allows MSMEs to access a wider market, improve operational efficiency, and encourage product and service innovation. This is evident from the number of MSMEs reaching more than 62 million units, most of

which have begun to adopt digital technology in their business activities (Nurul Hidayah & Rina Oktaviani ., 2022)

On the other hand, the transformation of the digital economy brings new challenges that cannot be ignored. One of the main challenges is the unpreparedness of digital infrastructure in various regions, especially in remote areas and islands. Limited internet access, electricity supply, and technological devices are significant obstacles to equitable distribution of the benefits of the digital economy throughout Indonesia. This digital divide has the potential to widen socio-economic inequality between urban and rural areas (Rachmat Gunawan & Indah Sari, 2024) .

In addition to infrastructure challenges, low digital literacy is also a crucial issue. Many people, especially the elderly and communities in the regions, still do not understand the risks and benefits of using digital services. This has an impact on the low level of technology adoption, as well as increased vulnerability to cybercrime and misuse of personal data (Budi Priyono Harvest, 2024) .

Regulation is a key factor in creating a conducive and sustainable digital ecosystem. The Indonesian government has initiated various pro-innovation policies, such as increasing broadband penetration, investing in technology education and training, and strengthening personal data protection. However, the existing regulations are still not fully adaptive to the rapid development of technology, so they often lag behind the dynamics of innovation in the field (Deni Anggreani Sutomo, 2024) .

Digital transformation also demands changes in governance. The government seeks to improve the efficiency and transparency of public services through the digitalisation of administration and services, such as the implementation of Online Single Submission - Risk Based Approach (OSS-RBA) for business licensing. This effort is expected to accelerate investment, create a more transparent business environment, and improve national competitiveness (Siti Nurjanah & Ahmad Fauzi, 2025) .

Amidst the immense opportunities offered by the digital economy, personal data protection has become an increasingly pressing issue. The increase in digital transactions and online data exchange raises the risk of leakage and misuse of personal data. Data breach cases that occur in various sectors highlight the need for strict regulations and effective protection mechanisms for consumers and businesses (John Smith, 2023) .

The Indonesian government has passed the Personal Data Protection Law (PDP Law) in response to this challenge. However, the implementation of the PDP Law still faces various obstacles, such as the limited capacity of supervisory institutions, low law enforcement, and lack of public and business awareness about the importance of personal data protection. In addition to the regulatory aspect, collaboration between the government, private sector, and society is crucial in building a safe and inclusive digital ecosystem. This partnership is needed to improve digital literacy, strengthen

infrastructure, and create innovations oriented towards consumer protection and data security (N Rizqiyanto ., 2025)

The transformation of the digital economy also raises the need for substantial investment in the development of technology-competent human resources. The government has allocated resources for education and training, including information technology curriculum development and advanced training for the existing workforce . This step is expected to increase the competitiveness of the Indonesian workforce in the digital economy era (Norazlina Binti Abdul Wahab & Mohd Azam Mohd Noor, 2025).

In the global context, Indonesia must be able to adjust its economic regulations and policies to be in line with international standards, such as the General Data Protection Regulation (GDPR) in the European Union. This regulatory harmonisation is important to increase investor and consumer confidence, and strengthen Indonesia's position in international digital trade (Francisca Romana Nanik Alfiani ., 2024)

Thus, the transformation of digital economy regulation and personal data protection in Indonesia is a complex and multidimensional process. A synergy between adaptive policies, infrastructure improvement, digital literacy, and strong legal protection is needed to create an inclusive, innovative and sustainable digital ecosystem. This research will examine the dynamics of digital economy regulatory transformation in Indonesia as well as the main challenges in personal data protection, using a comprehensive literature review approach.

## **Research Methods**

The research method used in this study is a qualitative method with a literature study approach. The research was conducted by collecting and analysing various relevant secondary sources, such as scientific journals, books, research reports, policy documents, and academic articles that discuss the transformation of digital economy regulations and the challenges of personal data protection in Indonesia (Eliyah & Aslan, 2025) . The data collection process began with the identification of appropriate keywords, followed by a literature search through academic databases and trusted online sources. Each source was evaluated for relevance and credibility and then analysed using content analysis techniques to identify key themes, patterns and challenges that emerged in the literature (Cronin et al., 2008) .

## **Results and Discussion**

### **Transformation of Digital Economy Regulation in Indonesia**

The transformation of digital economy regulation in Indonesia is a response to the rapid development of technology and digitalisation that is changing the national economic landscape. In the past decade, digitalisation has driven the growth of various sectors, ranging from electronic commerce, digital financial services, to the creative economy. The government recognises that adaptive and responsive regulation is

essential to ensure inclusive and sustainable growth of the digital economy (Lurong Chen et al., 2023).

In its early stages, regulation of the digital economy in Indonesia was sectoral and fragmentary. Each institution, such as the Financial Services Authority (OJK) and Bank Indonesia (BI), issued its own rules to regulate digital financial services, fintech, and digital banking. This leads to overlapping regulations and legal uncertainty for digital businesses (Muhammad Safuan Yusoff et al., 2023).

As the complexity of the digital ecosystem increases, the government has begun to adopt a more integrated approach. One important milestone was the issuance of Law No. 27 of 2022 on Personal Data Protection (PDP Law), which provides a legal basis for the protection of consumer and business data in the digital realm (Mar'atus Solikhah, 2025). This law is an important foundation for building public trust in the digital economy. In addition to the PDP Law, the government has also strengthened regulations in the digital finance sector. OJK issued OJK Regulation No. 21 of 2023 on Digital Services by Commercial Banks, which provides a framework for banks to develop digital services in a more flexible and innovative manner. This regulation emphasises the importance of information technology infrastructure, risk management, and customer data protection (Tri Wahyuni & Awaluddin Tjalla., 2024)

Regulatory transformation can also be seen in the government's efforts to regulate the trading of digital financial assets, including crypto assets. In January 2025, OJK issued a special regulation governing the implementation of digital financial asset trading, ranging from licensing, governance, to consumer protection and personal data. This step shows the government's seriousness in anticipating the risks and opportunities of financial technology innovation (A. Lanini et al., 2023).

The regulatory approach taken by the government is not only top-down, but also begins to adopt the concept of coregulation. Coregulation is a collaboration between the government, industry players, and the public in formulating and implementing regulations. This approach is considered more flexible and responsive to rapid technological change, while maintaining a balance between innovation and consumer protection. However, the transformation of digital economy regulation in Indonesia still faces a number of challenges. One of them is the gap between the speed of technological innovation and the slow legislative process. Many new business models have not been accommodated in existing regulations, resulting in legal uncertainty and risks for businesses (I Suhendra., 2025)

Another challenge is the consistency and harmonisation of regulations across sectors. Often, rules issued by one agency are not aligned with other agencies, thus confusing industry players. The government needs to strengthen inter-agency coordination and accelerate regulatory harmonisation so that the digital ecosystem can grow in a healthy and competitive manner. In addition to regulatory aspects, digital economic transformation also requires strengthening national digital infrastructure.

Limited internet access, especially in remote areas, is still a major obstacle to equitable distribution of digital economy benefits. The government continues to encourage the development of equitable digital infrastructure so that all levels of society can access digital services easily (Andi Pratama & Lilis Suryani, 2024).

Public digital literacy is also a focus in regulatory transformation. Low public understanding of the risks and benefits of digital services increases vulnerability to cybercrime and misuse of personal data. Therefore, existing regulations must be supported by massive education and socialisation programmes.

In the context of consumer protection, digital economy regulations in Indonesia increasingly emphasise the importance of data security and service transparency. OJK and BI actively supervise digital service providers to comply with security and consumer protection standards. This is important to maintain public trust and encourage widespread adoption of digital services (Dwi Ariyanti & Fajar Prasetyo., 2022)

The government has also begun to adopt international principles in formulating digital economy regulations, such as referring to the General Data Protection Regulation (GDPR) in the European Union. Harmonisation of regulations with global standards is needed to increase Indonesia's competitiveness in the international digital market and attract foreign investment (Ira Aprilianti & Siti Alifah Dina, 2021).

The transformation of digital economy regulations cannot be separated from the active role of the private sector and civil society. Multi-stakeholder collaboration is needed to create a safe, inclusive and innovative digital ecosystem. The government encourages public-private dialogue in policy formulation so that the resulting regulations are truly relevant and applicable in the field (Robiyati Podungge & Mohamad Agus Salim Monoarfa., 2025)

Going forward, the government is expected to continue to update and refine digital economy regulations in line with technological developments and market dynamics. An adaptive, collaborative, and risk-based approach is key to ensuring Indonesia's digital economy grows sustainably and provides benefits for the entire community (Salfarina Samsudin & Fatin Afiqah Md. Azmi, 2023).

Thus, the transformation of digital economy regulation in Indonesia is a dynamic and continuous process. A synergy between adaptive policies, strengthening infrastructure, increasing digital literacy, and strong legal protection is needed to create a competitive, innovative and globally competitive digital ecosystem.

### **Challenges of Personal Data Protection in the Digital Economy Era**

Personal data protection in Indonesia's digital economy faces increasingly complex challenges due to the rapid adoption of information and communication technology. Personal data is now a valuable asset, both for individuals, companies, and governments, so the risk of data misuse and leakage has increased significantly (Kalamullah Ramli et al., 2023).

Firstly, low public awareness of the importance of personal data protection is a major challenge. Many internet users in Indonesia do not understand the risks that lurk when sharing personal data carelessly on digital platforms. The lack of digital education and literacy makes people vulnerable to becoming victims of cybercrime such as phishing, identity theft, and online fraud (Dwi Ariyanti & Fajar Prasetyo ., 2022)

Second, the lack of regulation and implementation of personal data protection remains a fundamental problem. Although the Personal Data Protection Law (PDP Law) has been passed and is scheduled to take effect from October 2024, its implementing regulations have not been fully completed and independent supervisory institutions have not been established optimally. This has led to weak and inconsistent law enforcement on data breaches (Suratman Hukom & Nurma Humi ., 2025)

Thirdly, increasingly sophisticated cybercrime threats exacerbate the situation. Cybercriminals use various techniques such as hacking, malware, ransomware, and social engineering to steal or exploit personal data. Cyber attacks in Indonesia even reached an average of 13 million per day in 2024, signalling the urgency of strengthening the national information security system (Nurul Hidayah & Rina Oktaviani ., 2022)

Fourth, data leakage cases that repeatedly occur in various government and private institutions reduce public confidence in the state's ability to protect its citizens' data. Major incidents such as the leak of NPWP data, vaccination data, and National Data Centre data in 2024 have a direct impact on privacy rights, increase the risk of fraud, and disrupt important public services (Rachmat Gunawan & Indah Sari, 2024) .

Fifth, the establishment and independence of a personal data protection supervisory institution has not been optimal. This institution is expected to be able to supervise, enforce sanctions, and provide education, but until now it is still in the preparation and incubation stages, so supervision has not run optimally (Budi Priyono Harvest, 2024) .

Sixth, the digital literacy of Indonesian society is still relatively low. Many individuals do not understand their digital rights and obligations to protect personal data, making it easy to get caught up in unsafe digital practices. The digital literacy programme run by the government has shown positive results, but its scope still needs to be expanded and deepened (Deni Anggreani Sutomo, 2024) .

Seventh, the challenge of cross-sector and cross-country regulatory harmonisation is also an important issue. Multinational companies must comply with different data protection standards in each country, while Indonesia's own regulations are still in the adjustment stage with global standards such as the European Union's GDPR (Siti Nurjanah & Ahmad Fauzi, 2025) .

Eighth, the weak cybersecurity infrastructure in many organisations, especially MSMEs and local government agencies, makes personal data easily accessible to irresponsible parties. Many institutions do not have adequate security systems, regular security audits, or effective incident response procedures (John Smith, 2023) .

Ninth, the law enforcement process for personal data breaches is still slow and expensive. Victims of data leaks often have difficulty obtaining justice due to long investigation processes, complicated bureaucracy, and limited law enforcement resources (N Rizqiyanto ., 2025)

Tenth, challenges in applying the principle of *privacy by design* to digital systems. Many digital applications and services in Indonesia have not integrated personal data protection from the design stage, so security gaps are often found after the service is running (Norazlina Binti Abdul Wahab & Mohd Azam Mohd Noor, 2025).

Eleventh, there is a lack of collaboration between the government, private sector, and society in building an effective data protection ecosystem. Cross-sector synergy is needed to strengthen education, supervision, and innovation in data security technology (Francisca Romana Nanik Alfiani ., 2024)

Twelfth, the rapid development of technologies such as artificial intelligence, big data, and the Internet of Things (IoT) brings new challenges that have not been fully anticipated by existing regulations and security systems. These new technologies expand the potential risks of personal data leakage and misuse. Thirteenth, challenges in *cross-border data flow*. The lack of uniform standards and oversight mechanisms makes Indonesians' personal data processed overseas vulnerable to privacy violations. Fourteenth, there is still resistance from some digital businesses to comply with personal data protection standards due to cost, technical complexity or lack of incentives. This slows down the adoption of best practices in personal data management in the private sector (Lurong Chen et al., 2023).

Thus, the protection of personal data in Indonesia's digital economy requires a comprehensive effort that involves strengthening regulations, improving digital literacy, developing security infrastructure, establishing independent oversight institutions, and multi-stakeholder collaboration to create a safe and sustainable digital ecosystem.

## **Conclusion**

The transformation of digital economy regulation in Indonesia has become an important foundation in driving national economic growth in the digital era. The government has initiated various pro-innovation policies, strengthened digital infrastructure, and encouraged collaboration between the public and private sectors. However, this transformation process still faces major challenges, such as regulations that are not fully adaptive, infrastructure gaps, and low digital literacy in society. Efforts to harmonise regulations and increase human resource capacity are key to creating an inclusive and competitive digital ecosystem.

On the other hand, personal data protection is becoming a crucial issue as digital transactions and online data exchange increase. Although the Personal Data Protection Law (PDP Law) has been passed, its implementation still faces obstacles, such as the

limited capacity of supervisory institutions, weak law enforcement, and low public awareness of the importance of data privacy. Other challenges include the threat of cybercrime, weak data security infrastructure, and the resistance of some businesses to implement adequate data protection standards.

Overall, this literature review confirms that the success of the transformation of digital economy regulation and personal data protection in Indonesia is highly dependent on multi-stakeholder synergies, adaptive regulatory updates, institutional strengthening, and increased public digital literacy. A sustainable commitment from the government, business actors, and the community is needed to build a safe, innovative, and sustainable digital ecosystem, so that it can provide optimal benefits for all levels of Indonesian society.

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