JURNAL MASALAH-MASALAH HUKUM
Tersedia online di https://ejournal.undip.ac.id/index.php/mmh/
Volume 53, Nomor 3, November 2024

ENABLING DATA PORTABILITY AND INTEROPERABILITY UNDER INDONESIA'S DATA PROTECTION LAW[1]

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Abstract

The Indonesian parliament ratified the Personal Data Protection (PDP) Law in October 2022, introducing the Right to Data Portability (RtDP) in Article 13. This concept enables seamless information transfer, enhances personal control, and fosters innovation in the digital economy. This study analyzed data portability provisions under the PDP Law and drew insights from the EU and UK's experiences. Findings showed that data portability under the PDP Law, similar to the GDPR, fell short due to the absence of standardized guidelines, interoperability architectures, and non-mandatory compatibility policies. Prioritizing Open APIs for interoperability was crucial. Effective public-private collaboration was key in establishing sector-specific and cross-sector interoperability standards aligned with PDP Law regulations.

Keywords: *Data Portability; Interoperability; PDP Law; Data Protection.*

A. Introduction

Data is an important raw resource in the data-based economy, impacting various aspects of lives. The management of this resource with technological assistance enables the emergence of new and more efficient products and services capable of addressing societal issues (Walters, Trakman, & Zeller, 2019). Furthermore, data and service providers simultaneously introduce heightened competition in the digital economy, generating a larger scale of obtained and processed personal information over time. This indirectly leads to consumer behavioural effects, emphasizing lock-in due to high switching costs and negative network impacts developed by service providers through established ecosystems (Andreoni & Roberts, 2022; Krämer & Stüdlein, 2019). Based on the high costs associated with transferring and reusing data, several individuals are observed to lack control over information when switching from one service provider to another (Andreoni & Roberts, 2022). Therefore, the increasing awareness of this issue is responsible for data portability proposals. The issue is also critically evaluated as a new subject information right enacted by regulators in various jurisdictions, emphasizing a legal innovation capable of supporting digital economic growth (Zufall & Zingg, 2021).

This potential originates from the key factors learned through the initial regulations implemented by specific jurisdictions in the digital economy era. In thes digital economy era, the implementation of early data portability experiences is also evaluated in the literature. This shows that the portability concept has become crucially important in several countries, specifically in Europe. For instance, the European Union (EU) has included the proposed right in

[1] This study was generously supported by the Grand Group Research Grant from the Faculty of Law at Universitas Sebelas Maret in 2024

its GDPR since 2018, with challenges implementation ally remaining due to insufficient standardized guidelines and technical architecture for achieving direct data portability (CERRE, 2020). This was in line with the European Commission analysis, where the lack of interoperability, limited guidelines, and technical architecture standards hindered the implementation of the information process (European Comission, 2020). The deficiency also led to fragmented conditions of data portability in the EU, necessitating both horizontal and vertical repairs. Meanwhile, the United Kingdom (UK) deserves commendation for developing moderate information flexibility level using Midata. This development is enhanced through Open Banking under the Smart Data initiative, prioritizing individual empowerment toward initiating direct portability process (Weinlong Li, 2019). This promotes interoperability through standardization, enabling seamless, sustainable, and real-time data sharing (Brown, 2022). Therefore, this study aims to examine and comprehend RtDP as a new data subject right in Indonesia following the enactment of Law Number 27 of 2022 concerning Personal Data Protection (PDP Law).

Data portability literature explores its implications for competition, privacy, and individual empowerment under various legal frameworks. Scholars have highlighted the need for robust frameworks to overcome complexities in data access and privacy (Gill & Kerber, 2020), and identified challenges in implementing technologically neutral data portability rights (Wong & Henderson, 2019). Others have linked data portability to fundamental principles like human dignity and privacy in the absence of explicit regulations (Laje & Schmidt, 2024). This body of work underscores the potential of data portability to empower individuals and enhance transparency, while also identifying challenges related to privacy, technology, and legal systems. However, this article specifically examines data portability under Indonesia's Personal Data Protection (PDP) Law, focusing on its role in crafting interoperability for the digital economy. Distinct from previous studies emphasizing GDPR or other legal contexts, this research analyzes how Indonesia's unique legal and digital landscape can leverage interoperability mechanisms to foster economic innovation and data governance. By addressing this niche, the study contributes to the broader discourse on data portability, aligning it with Indonesia's evolving regulatory and economic priorities, and filling a gap in existing literature. It evaluates the emergence, impact, and implementation challenges of data portability requirements in Indonesia, offering valuable insights for future applications, particularly in the banking sector.

B. Research Methods

This study examines the emergence, implications, and challenges of data portability requirements within Indonesia's personal data protection law. By exploring the evolving data protection landscape, it identifies legal and practical challenges Indonesia faces in aligning with global standards. These insights serve as a basis for comparing international best practices. Focusing on the EU and UK's robust data governance models, the study analyzes their legislative frameworks, enforcement strategies, and operational challenges. It highlights valuable lessons for addressing technical, legal, and procedural barriers to data portability. The research proposes tailored solutions for Indonesia, emphasizing the need for a balanced framework that upholds individual rights and promotes innovation and economic growth.

C. Analysis and Discussion

1. Understanding Data Portability and The Reason for Its Relevance in The Digital Economy Age

The absence of data portability in data privacy laws restricts user control, stifles competition, and hinders innovation. New businesses, particularly fintech firms and startups, face difficulties accessing incumbent datasets, exacerbating monopolistic practices. The lack of portability increases privacy risks and reduces transparency among data controllers (Zanfir,

2012; Nicholas, 2021). Recognizing these interrelated challenges, many countries are strengthening regulations to empower users and foster fair competition. Addressing data portability is essential for building a secure, equitable, and interconnected global digital economy. The Right to Data Portability (RtDP) is also proposed as a newer development and extension of the RoA (Right of Access). Besides sharing the same objective, RtDP remains more specific due to requiring a 'structured, commonly used, and machine-readable' format (Vrabec, 2021). When this right is available to individuals, another interesting aspect emphasizes granting the obligation to access the data stored by incumbents. These data are expected to be transferred/switched to more agencies, easily enabling multi-home (use different competing service providers) without switching cost barriers (Kira, Sinha, & Srinivasan, 2021).

The above descriptions explain that the concept of data portability is proposed to place individuals at the centre of the information economy, providing a set of privacy rights known as RtDP. In this case, RtDP is considered a fundamental right enabling individuals to fully benefit from the accumulation of their data history, emphasizing determination and growth without confinement to one ecosystem in the digital economic era (Ursic, 2018). Besides benefiting the improvement of individual data control, the availability of the rights also enhances diverse experiences of service products and trust in providing information to controllers (Hondagneu-Messner, 2021). This is considered a business strategy for incumbents, which is capable of opening up new markets, specifically for those establishing specific data advantages (Biglaiser, Calvano, & Crémer, 2019). Regarding complementary service providers and potential new competitors, the strategy reduces entry barriers and promises a reduction in switching costs, facilitating data acceptance and transmission (Nixdorf, 2020).

Data portability is subsequently capable of functioning with interoperability based on the previously stated descriptions. This is because both principles are closely related regardless of the subtle differences, emphasizing 'two sides of the same coin' (Weinlong Li, 2019). Data portability also prioritizes the ability to transfer information from one online provider to another (OECD, 2021). However, interoperability emphasizes structuring data for machine readability and transfer between information systems with subject consent. This allows two controllers, such as in open banking with APIs, to collaborate for data exchange and connectivity (OECD, 2021). Both concepts prioritize the multiple aspects showing that service providers need to be considered for cooperation, facilitating uninterrupted real-time data transfers while maintaining continuity with previous producers (OECD, 2021).

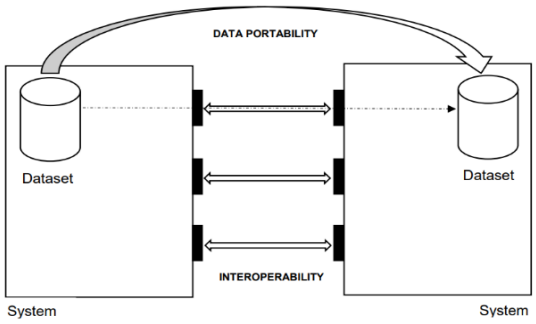

Figure 1. Data Portability & Interoperability Concept
Source: Wenlong Li (2022)

The concept of data portability is also categorized into various levels, with Wenlong Li identifying and developing three distinct phases. Firstly, low-level or indirect data portability is identified and implemented to narrowly provide control to individuals where interoperability is not required (Wenlong Li, 2022). For instance, Article 20 of the GDPR does not mandate the information flexibility level. Secondly, a moderate level of data portability is implemented, as

shown in the UK Midata initiative. This indicates that individual well-being and interoperability requirements are primarily emphasized and optional, respectively (Wenlong Li, 2022). Thirdly, a strong or direct data portability level is determined and adopted, ensuring easy information transfer, as well as enhancement of competitiveness and market access with the need for interoperability (Wenlong Li, 2022). An appropriate example of this data flexibility level is the existence of Open Banking.

The above descriptions also prove that the allowance of direct data portability helps to address innovation issues at the levels of service product and different providers, regardless of the existing I formation flexibility phases (Krämer, Senellart, & Streel, 2020). This is because the direct portability level provides a switch-facilitating effect from a competitive perspective in the digital economy, emphasizing the reduction of lock-in influences, including switching costs and positive network impacts (Lam & Liu, 2020). Therefore, the free flow of the data is observed, as switching becomes easier and faster (Vezzoso, 2021). In this case, the relationship between interoperability and portability is similar to 'two sides of the same coin,' emphasizing distinct and interconnected concepts.

2. Comparative Approach: Remaining Concern and Lessons from The EU and UK

European Union (EU)

Based on the assessments of information safety, the General Data Protection Regulation (GDPR) is considered a reference for global countries, toward establishing personal relevant laws (Ryngaert & Taylor, 2020). This reference is known as the most significant rule in data privacy reform, including the new information subject right of RtDP designed in 2012. GDPR is also implemented to maintain individual control over personal data, alongside other new subject rights previously unavailable (Hoofnagle, van der Sloot, & Borgesius, 2019). In Article 20 of the GDPR, the definition and implementation patterns of RtDP are outlined as follows: 1) The data subject should have the right to obtain the personal information provided to a controller in a structured, commonly used, and machine-readable format. The subject should also have the right to transmit the data to another controller without hindrance, where the following is emphasized: a) The processing is based on consent according to point (a) of Article 6(1), Article 9(2), or point (b) of Article 6(1); and b) The processing is carried out by automated means. 2) In exercising the right to data portability according to paragraph 1, the data subject should be obligated to have the personal information directly transmitted from one controller to another, where technical feasibility is observed.

Article 20 of the GDPR established the concept of data portability and ensured sufficient interpretation according to the above descriptions. This showed that specific non-obligatory interoperability requirements were considered inadequate due to their limited scope (See GDPR, Retical 68). Moreover, the European Commission stated that data subjects had limited rights because interoperability was not mandated, with the lack of official standardization guidelines and technical architecture interoperability emphasizing Article 20 of the GDPR (European Comission, 2020). Since standard guidelines were not observed, the only official criteria were proposed by WP29 before the enforcement of GDPR. In this case, De Hert et al. showed that the proposed guidelines were not technology-specific, emphasizing a downside (De Hert et. al., 2018). Graef et al. also expressed the need for subsequent standardization and technical standards, toward facilitating interoperability for the application of direct portability (Graef, Husovec, & Purtova, 2018). This was supported by the development of Matteo Nebbiai, where the absence of standard guidelines and interoperability criteria was observed for technical architectures, causing the growth of appropriate scheme initiatives in the EU from 2000 to 2020. The schemes were also formed voluntarily and mostly driven by private actors, indicating that GDPR was not greatly effective during the enforcement of RtDP (Nebbiai, 2022).

Based on Borgogno and Colangelo, numerous new proposals concerning data portability were introduced by the EU, emphasizing the requirement for interoperability to strengthen existing concepts and facilitate direct information flexibility (Colangelo & Maggiolino, 2019). This indicated that the mandate for data portability in the EU was presently fragmented horizontally and vertically (Graef, Husovec, & Boom, 2020). Regarding horizontal fragmentation, the Digital Content Directive (DCD) was initiated, with information flexibility schemes applicable to the provision of virtual content or services (See DCD, Art. 16(3)(d); DCD, Art. 13(2)(c)). Although interoperability was not mandated by DCD, such as GDPR, the Free Flow of Non-personal Data (FFNPD) upheld the concept for only the user data functioning in a business or professional capacity (See also FPND, Art. 3(8)). This was not in line with the activities of the EU, where DCD was endorsed with interoperability as a requirement, enabling the permission of only voluntary industry-driven arrangements (FPND, Art. 6). After the implementation of the three intricate laws, the Digital Market Act (DMA) was emphasized, indicating that the scope of data portability surpassed GDPR, including non-personal information (DMA, Art. 3; DMA, Art 6(9)). The DMA also mandated gatekeepers to implement direct data portability in safeguarding fairness and competition in the digital market from May 1, 2023 (Yan & He, 2022).

United Kingdom (UK)

The UK was considered the frontrunner through the implementation of the Midata initiative in 2011, before the addition of RtDP to the GDPR proposal in 2012. This was conducted to facilitate the transfer of data from one service provider to another. The UK Department for Business, Innovation, and Skills (BIS) also initiated public consultations as part of the "Better Choices: Better Deals" blueprint, to grant individuals access to their data in portable and electronic formats (BIS, 2011). Based on the initial implemented idea emphasizing main sectors such as banking, energy, and telecommunications, the facilitation of economic growth and innovative business service provisions were expected (BIS, 2011). Since the introduction of the Midata initiative, the scope of data portability was also incorporated and shaped through standard formats to enable interoperability (BIS, 2012).

The above descriptions showed that the data portability initiative under Midata was only minimally effective and rarely implemented due to the lack of subsequent standard guidelines (Brown, 2022). Furthermore, the Data Protection Act 2018 (UK GDPR) did not incorporate RtDP as expected, primarily due to insufficient interoperability. This indicated that the requested data was not promptly shared, as individuals were expected to endure a waiting period of up to 30 days. A deficiency was also observed in technical architecture interoperability standards required for secure data transmission, including APIs (Information Commissioner's Office, 2020). This led to the establishment of the Smart Data initiative by the BIS, to facilitate information portability in securely sharing knowledge between service providers upon consumer requests (BIS, 2018). The initiative also surpassed the requirements of the UK GDPR to achieve its goals, enabling direct data provision between service providers.

The above descriptions also stated that a recent development prioritized the introduction of the Data Protection and Digital Information Bill in September 2021, including the enhancement of knowledge safety designed to improve the state of previous RtDP implementation (UK Parliament, 2022). This change was part of a larger national plan to promote data-driven innovation and rank the UK as a global data hub after the Brexit decision from the EU (Mazzi et al., 2022). The commitment also concretely fortified and strengthened the ongoing Smart Data initiative to uphold direct information portability.

3. The New Indonesia Personal Data Protection Law and Quo Vadis Regulatory Framework on Data Portability

A standalone national data protection law was finally regulated by Indonesia after a six-year delay since the submission of the draft proposal, following the lead of other prominent jurisdictions such as the EU and UK. This indicated that the Indonesian parliament enacted the PDP Law on November 22, 2022, to strengthen privacy protection regarding the challenges encountered by businesses and society. Data protection regulations were also previously controlled on a sectoral basis in various laws, abandoning inadequacies in data management and developing a fertile ground for cybercrime and lack of accountability, specifically in the new digital economy (Hicks, 2021). Furthermore, RtDP was initially enshrined in Article 13 of the PDP Law, whose implementation emphasized Indonesia preparedness to embrace the evolving digital economy (Rosadi, Noviandika, Walters, & Aisy, 2022). The following data portability provisions are outlined by Article 13: 1) *Personal Data Subjects have the right to obtain and/or use Private Information about themselves from Service Controllers in a form suitable with the structure and/or format commonly used or readable by electronic systems; 2) Personal Data Subjects have the right to transfer Private Information about themselves to other Service Controllers, as long as the systems used can securely communicate with each other according to the principles of PDP Law; 3) Subsequent provisions regarding the rights of Personal Data Subjects to use and transfer Private Information as emphasized in paragraph (2) should be regulated by Government Regulation.*

According to Article 13 of the PDP Law, RtDP provided two available procedures for data transfer and reuse. Firstly, individuals whose data was acquired were obligated to request a copy of their information in a 'structured, commonly used, and machine-readable' format suitable for reuse (PDP Law, Art. 13(1)). Secondly, individuals were allowed to directly share their data from the original information controller to another, based on the mutual communication capability of the systems'. To continuously define the dimension of Article 13(2), Article 13(3) also granted significant authority to the State, regarding the development of expertise over time through Government Regulation. Since the interpretation of 'mutual communication' under Article 13(2) was unavailable, it was commonly defined as the method of ensuring interoperability, enabling original data controllers to transfer information in a user-friendly format to other service providers without disruption. To implement this right, the technical feasibility of data transfer was also emphasized between information controllers. This was facilitated by 'export-import modules' supported by interface devices, allowing for smooth and real-time data transfer from one service provider to another, leading to the establishment of direct information portability (Swire & Lagos, 2013).

Clarity was also required while examining and identifying the provisions of RtDP in Indonesia based on the above descriptions. The explanation of Article 13 PDP Law, for now, merely provides a 'sufficiently clear' description for this right. Also, Article 15 PDP Law, RtDP is exempted when processing operations are necessary for the performance of public interest tasks or to fulfill legal obligations. Although the novelty of Article 13 granted rights to individuals, several unfinished works were observed by not specifying the conditions for data portability. This lack of specification enabled the difficult prediction of the implementation patterns of information flexibility under the PDP Law, specifically during the comparisons to the two previously-stated jurisdictions. The determination of three crucial terms was also prioritized, namely structured, commonly used, and machine-readable. These terms were highly devoted in Article 13(1), to continuously define the 'mutual communication' system in Article 13(2). The condition was subsequently supported by a recent OECD analysis, where the following aspects need to be considered when building the implementation of data portability: *"Implementing data portability measures will require identifying the information that should be included, potentially based on an assessment of the requirements needed to enable entry into a market. The data*

format, the timeline, and the static or dynamic nature of the transfer process will also be important considerations."

Based on the PDP Law, the challenges of RtDP were compounded by the non-existence of the previous framework to institutionalize the right. Although the introduction of RtDP was prioritized by several experts in the Public Hearing (Rapat Dengar Pendapat Umum), the right was not a primary focus in the drafting process of the PDP Law. In this case, the lack of feedback ensured the difficulty of precisely anticipating the patterns by which the PDP Law managed data portability. During the inappropriate resolution of the issue, numerous ambiguities regarding the definition of RtDP were observed, causing unclear execution and goal achievement patterns for the obligation. Therefore, the scope of RtDP under the PDP Law heavily prioritized the interpretation patterns of the open concept. Ensuring the continuity of the obligation through the regulation also necessitated an interpretation of Article 13 provisions before establishing practices. This indicated that analysis of the implementation patterns of the EU and UK through previous approaches was advantageous for the achievement of appropriate interpretations. The jurisdictions also provided diverse approaches to data portability, spanning from minimal to extensive levels. In addition, the provision of opportunity to stakeholders was important regarding the adaptation of strategies for efficient information flexibility implementation. This condition included collaborative endeavors to establish universally applicable standards.

4. Developing Commons Standards: Toolkit for Technical Solutions in Practice

Empowering individuals with the right to data portability is equally important for upholding governance and validating the RtDP, regardless of the challenge in defining the scope of standard portable information. This enforcement activity was obtained by securing the consent of the subjects before processing and transmission (Kuebler-Wachendorff et al., 2021). The general principles of personal data protection, which focused on purpose limitation and information minimization, also restricted the transfer of details. Meanwhile, RtDP stimulated data exchange and reuse, leading to the significant consideration of the risks evolving from the implementation of direct information portability. This condition prioritized the economic risks indicating that continuous data transfer requirements imposed unnecessary burdens (Jurcys, Donewald, & Globocnik, 2020). In this case, the principles of purpose limitation and data minimization should be considered when using relevant information to carry out RtDP (Wong, Henderson, & Ball, 2022). Data governance was also expected to clearly and specifically determine the scope of potentially shared information. Subsequently, storage limitations should ensure that data was not shared unnecessarily to achieve the stated purposes. Data also needs to be processed accurately, completely, non-misleadingly, up-to-date, and accountable. In this case, the implementation of direct data portability was recommended when its benefits outweighed the costs.

Based on the above descriptions, the availability of open standards for APIs played a crucial role in achieving interoperability during the execution of direct data portability (Qiu, 2017). The use of standard APIs, as interface tools, also ensured the transfer of data and their implementation across various service providers. This enabled more competition and new ideas in the market, due to providing a standardized pattern to access and share data between systems and applications. Based on the PDP Law, the use of standard APIs significantly facilitated direct transmission between data controllers. This was considered a step towards achieving the realization of rights under Article 13(2), where inter-system "communication" was demanded. The acquisition of broad acceptance among numerous data controllers was also highly emphasized through the standards established using public-private collaboration. This indicated that individual data controllers were not required to shape their systems to support interoperability with specific service providers, as minimum standards for both data transmission and reception were easily accessible (Borgogno & Colangelo, 2019). Moreover, the presence of standardization ensured a fair and level playing field for data controllers by facilitating smooth

exchange between systems. This emphasized cooperation within a connected industry framework, subsequently nurturing an integrity-focused ecosystem guided by a transparent roadmap and achievable targets (de Weck, 2022).

Several concerns were also persistent based on data portability, regardless of the great benefits of APIs standard availability, where potential adverse effects should be safeguarded against various features, such as information breach risks, discrimination, or processing exploitation (Economides & Lianos, 2021). Security and governance standards were also similarly necessary considering the technical aspects of each open standard scheme, which emphasized three aspects, including communications, authentication & authorization; and payload/functionalities (Hesse, Teubner, & Adam, 2022). These features focused on technical questions related to the connection patterns of two parties, authenticating each other, and securely sharing data without discrimination. The standards also ensured clarity in the scope and use of standards, including the roles and responsibilities of the parties engaged in data portability operations. To ensure the non-hindrance of effective adoption, the development, maintenance, and publication of open standards accessible to the public were subsequently performed, specifically through a developer site (Weston, 2017). This included facilitating a standardized sandbox for testing, leading to the prioritization of technical, security, and data standards (Weston, 2017).

The above descriptions showed that the use of a bottom-up approach through public-private collaboration was specifically hindered. In this case, critical considerations were emphasized regarding the hindrances, for the achievement of viable standard establishment. This was due to concerns about the potential lack of interest from data controllers in ensuring uniform standards (Delacroix & Lawrence, 2019). Therefore, significant efforts were carried out by data controllers concerning the establishment and publication of the standards. These activities prioritized the adoption of the standards for implementation across various service providers. In the absence of progress or apprehensions about adoption, a range of gradual measures were also considered, starting with the existence of highly prepared controllers to ensure appropriate achievement or set adequate deadlines after the evaluation of implementation status by the government (Delacroix & Lawrence, 2019). For example, a similar strategy was applied by the CMA in the UK, where the adoption of standards established by OBIE was enforced upon the nine largest banks (Cooper, 2021). The implementation of periodic evaluations and/or updates of the standards was also equally important during standardization. This included considering various factors, including business model evolution, conformity with national interests, and support for implementing standards shaped to specific requirements.

D. Conclusion

In conclusion, this study explored the potential impacts and challenges evolving from introducing data portability as a new right for information subjects, accompanied by its operationalization in Indonesia under the PDP Law. Effective policy considerations also indicated that the right's success was intricately linked to establishing standard-setting and technical architecture standards. Based on the EU and UK experiences, the difficulty did not originate from the inability to use data beyond its development. This proved the difficulty was due to the absence of comprehensive standard guidelines and tools to facilitate swift and seamless data sharing among service providers. Furthermore, insights regarding observations related to data portability under Article 13 of the PDP Law were analytically extracted and presented. Firstly, the implementation of data portability, as a right, should be critically and cautiously considered. This indicated that the mere invocation of terms, such as 'structured, commonly used, and machine-readable' formats and 'mutual communication', was highly insufficient, leading to adoption challenges. RtDP should also be facilitated in the digital economy, with standard-setting delineating the data scope. In this case, the inclusion of 'observed

data, such as browsing, online behavior, or clickstreams, was specifically recommended to ensure the sharing of all relevant data. Secondly, public-private collaboration could be maneuvered due to a bottom-up approach to standard-setting enabled by granting roles to SSOS through the flexibility of Article 13(3). Thirdly, achieving direct data portability on a technical level was feasible, facilitated by appropriate guidelines and architectural standards, through open development, maintenance, and publication accessible across various sectors. This proved that the availability of standard-setting allowing direct data portability promoted more service providers to share personal information, with several individuals initiating the transmission process. In this case, the digital economy was likely to become more innovative and competitive, leading to the realization of its full potential. The results were also prudent for Indonesian stakeholders, promoting future engagement to address legal implications experimentally. This emphasized various discussions regarding the potential establishment of standards to improve the theoretical understanding and practical use of RtDP.

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