

The Regulations of the Supervisory Officer Personal Data Protection-Based Accountability Principle

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ABSTRACT

This study examines The Model of Regulations Supervisory Officer Personal Data Protection-Based Accountability Principle: Lessons from Sweden. This study is a qualitative approach by reviewing and analyzing legal aspects and comparing laws. Even though Indonesia has a personal data protection law, misuse of personal data is still excessive. Owing to accountability basis PDP supervision arrangements have not been properly implemented. Meanwhile, Sweden was chosen as a comparison country since it was one of the first countries to have a personal data protection law. The result shows that in Sweden, personal data is regulated in the General Data Protection Regulation and the personal data supervisor well implemented the principle of accountability therefore it worked effectively. Meanwhile in Indonesia, given that a data protection supervisor has not been established, Protection of personal data is still carried out by each agency appointed by law on a sectoral basis and it deemed less effective in providing personal data protection. Therefore, the personal data supervisor with a single rule and direct responsibility to the president is the perfect model for Indonesia.



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1. Introduction

The era of globalization has given information technology a significant status because it can create parts of the world without boundaries, distance, space, or time and can increase work productivity and time efficiency.¹ Information technology changes the lives of the community and leads to rapid socio-cultural, economic, and legal changes.² Protecting personal data has been more vital than ever with the increasing number of cell phone and

¹ Vibhushinie Bentotahewa, Chaminda Hewage, and Jason Williams, 'The Normative Power of the GDPR: A Case Study of Data Protection Laws of South Asian Countries', *SN Computer Science*, 3.3 (2022), 1–18 <https://doi.org/10.1007/s42979-022-01079-z>

² Deborah Hicks, 'Information Technology, Change and Information Professionals' Identity Construction: A Discourse Analysis', *Proceedings of the ASIST Annual Meeting*, 51.1 (2014) <https://doi.org/10.1002/meet.2014.14505101049>

internet users.³ Some cases have emerged, especially those related to the leakage of personal data and resulting in fraud or criminal acts of pornography, forcing the discourse on the importance of laws of personal data protection.⁴ This action relates to the concept of privacy.⁵ The concept itself is the idea of maintaining personal integrity and dignity.⁶



Based on the data that the author analyzes, it can be seen that the data on personal data leakage in Indonesia was relatively high in 2020, while in 2021, the cases decreased slightly, namely 85,763. However, in 2021 towards 2022, there was an increase in data regarding stolen personal data of 109.47, and in 2023, there was also an increase of 143.74. The Swedish Data Protection Authority said that since GDPR came into force on May 25, 2018, it has received 3,000 complaints and 3,500 reports of privacy breaches. Most of the complaints relate to video surveillance and direct marketing. It says that six out of ten reported privacy breaches are caused by human activity.

In August 2020, details of bank vaults, alarm systems, and security arrangements for Swedish authorities were leaked online after a security company was hacked, local media reported on Tuesday. A total of 19 gigabytes of information and about 38,000 files were stolen from the Gunnebo security group by one or more hackers in August, according to the Dagens Nyheter newspaper.⁷ In November 2020, it said on Tuesday that Sweden's largest insurance company, Folksam, accidentally leaked the personal data of around one million customers to some of the world's largest technology companies. Folksam, which insures 50% of homes and individuals in Sweden, shares the data with tech giants such as Facebook, Google, Microsoft, and LinkedIn.

³ Rahime Belen Saglam, Jason R.C. Nurse, and Duncan Hodges, 'Personal Information: Perceptions, Types and Evolution', *Journal of Information Security and Applications*, 66.March (2022), 103163 <https://doi.org/10.1016/j.jisa.2022.103163>

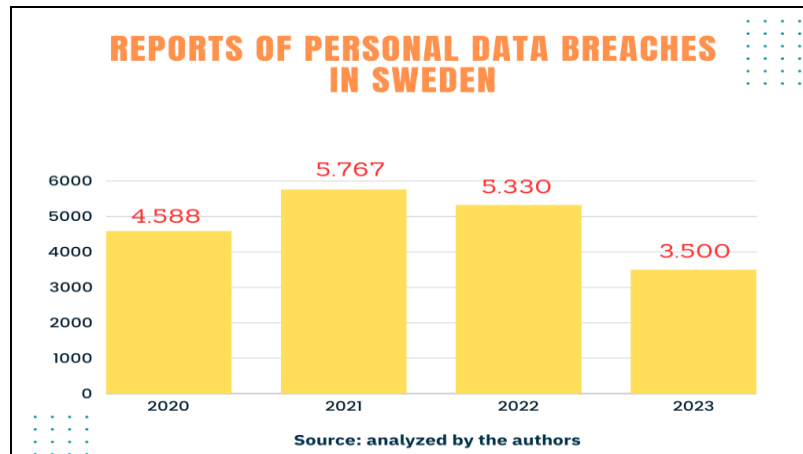
⁴ Marie Helen Maras and Alex Alexandrou, 'Determining Authenticity of Video Evidence in the Age of Artificial Intelligence and in the Wake of Deepfake Videos', *International Journal of Evidence and Proof*, 23.3 (2019), 255–62 <https://doi.org/10.1177/1365712718807226>

⁵ Michaela Padden and Andreas Öjehag-Pettersson, 'Protected How? Problem Representations of Risk in the General Data Protection Regulation (GDPR)', *Critical Policy Studies*, 15.4 (2021), 486–503 <https://doi.org/10.1080/19460171.2021.1927776>

⁶ Vera Zinovieva, Mikhail Shchelokov, and Evgeny Litvinovsky, 'Legal Issues of Protection of Personal Data: Cases of Transport Data Leaks', *Transportation Research Procedia*, 68 (2023), 461–67 <https://doi.org/10.1016/j.trpro.2023.02.062>

⁷ Tiago Cruz and others, 'A Cybersecurity Detection Framework for Supervisory Control and Data Acquisition Systems', *IEEE Transactions on Industrial Informatics*, 12.6 (2016), 2236–46 <https://doi.org/10.1109/TII.2016.2599841>

In 2021, around 500 Coop supermarket stores in Sweden were forced to close due to the "colossal" impact of a cyber-attack that affected the organization worldwide. Coop Sweden said it closed over half its 800 stores on Friday after point-of-sale cashiers and self-service checkouts stopped working. Hackers did not target the supermarket - but is one of a growing number of organizations indirectly affected by attacks on major software suppliers that companies use. Cyber researchers say around 200 businesses have been affected by a "colossal" disease of ransomware attacks, most of which impacted the US.



The Swedish Authority for Privacy Protection's (IMY) role is to uphold personal data protection, monitoring that they are handled correctly and avoiding falling into the wrong hands. This is an increase of 26 percent compared to 2020, which only saw 4,588 reports. In 2022, IMY received around 5,330 reports of personal data breaches, of which 70 percent came from the public sector and around 25 percent from the private sector. In 2023, IMY received reports that personal data theft in Sweden had decreased significantly from the previous year. The emergence of personal data protection is a form of respect for the right to privacy. The genesis of the protection of the right to privacy is contained in the Indonesian constitution, namely the Constitution of the Republic of Indonesia 1945, especially Article 28G which states that the law guarantees the protection of personal rights because they are included as human rights against all fear. Based on these provisions, which are strong recommendations for protecting human rights, this article can be used as a reference for forming more specific regulations regarding the protection of personal data.⁸

Based on that constitution, the protection of personal data becomes part of the protection of human rights. These rules are then explained clearly in various existing regulations. Regarding regulations on personal data protection, there are 30 rules that regulate the protection of personal data.⁹ Referring to the delegation of supervisory authority over the protection of personal data to government agencies, so far the protection of personal data is partially regulated in various statutory regulations and is also accompanied by certain institutions that have the authority to act as personal data supervisors, for example in the telecommunications law, supervisory institutions are determined in the form of the Indonesian Telecommunications Regulatory Body (BRTI), for the Human Rights Law, the supervisory authority is National Human Right Commision (*Komnas HAM*). This practices

⁸ Pasquale Cantiello, Michele Mastroianni, and Massimiliano Rak, 'A Conceptual Model for the General Data Protection Regulation', in *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 2021, 12956 LNCS, 60–77 https://doi.org/10.1007/978-3-030-87010-2_5

⁹ Aysem Diker Vanberg, 'Informational Privacy Post GDPR—End of the Road or the Start of a Long Journey?', *International Journal of Human Rights*, 0.0 (2020), 52–78 <https://doi.org/10.1080/13642987.2020.1789109>

clearly conflict with international standards which emphasize the importance of an independent institution which can supervise all kinds of actions involving the use of personal data.¹⁰

Another problem that also arises related to the existence of all these institutions is the reality that each of these bodies acts only on sectoral issues contained in the relevant sectoral law, and is not supported by supervisory authority that crosses issue boundaries.¹¹ The absence of a mechanism like this will certainly cause problems in the future, if there is an intrusion on personal data. Furthermore, another weakness of the supervisory mechanism for personal data protection in Indonesia is that there is no uniformity in the mechanism for carrying out supervision between agencies.¹² Observing at the current situation of legal enforcement mechanisms which are expected to provide guaranteed protection for personal data which tends to show deficiencies, the establishment of a personal data monitoring agency is an inevitable agenda in grounding personal data protection in a more concrete Indonesian legal framework. Thus, through a special agency that has the authority to supervise all forms of personal data, it is hoped that it will not only be able to overcome these gaps, but will be the first step for improving personal data protection mechanisms in the future.¹³

The absence of personal data supervisor in Indonesia is not the only problem that arise, the lack of accountability principle also become a major problem on the personal data protection. Some problem implementation of the Accountability Principle ascends when the government programs related to digitalization, such as e-KTP to e-health¹⁴, to the widespread misuse of personal data of consumers of online application-based transportation services.¹⁵ With the limitations of existing regulations, has implications for inadequate recovery for victims whose rights have been violated. This then became the basis for urging the implementation of the PDP Law with the hope that it can provide a sense of security in the use of personal data, especially digitally.¹⁶

The key concept of personal data protection is accountability, it means that data carried out in a manner that complies with the law if the data is processed lawfully, fairly and transparently with respect to the data subject.¹⁷ This means that all data controllers may

¹⁰ Januardo Sulung Partogi Sihombing and others, 'The Regulation of Legal Protection for Poor Communities Toward Justice in Indonesia and the Netherlands', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 331–53 <https://doi.org/10.53955/jhcls.v4i2.274>

¹¹ Shakila Bu-Pasha, 'Cross-Border Issues under EU Data Protection Law with Regards to Personal Data Protection', *Information and Communications Technology Law*, 26.3 (2017), 213–28 <https://doi.org/10.1080/13600834.2017.1330740>

¹² Safira Widya Attidhira and Yana Sukma Permana, 'Review Of Personal Data Protection Legal Regulations In Indonesia', *Awang Long Law Review*, 5.1 (2022), 280–94 <https://doi.org/10.56301/awl.v5i1.562>

¹³ Alexander Wodi, 'The EU General Data Protection Regulation (GDPR): Five Years After and the Future of Data Privacy Protection in Review', *SSRN Electronic Journal*, 2023 <https://doi.org/10.2139/ssrn.4601142>

¹⁴ Hendra Hendra and others, 'E-Health Personal Data Protection In Indonesia', *Jurnal Hukum Kesehatan Indonesia*, 1.02 (2022), 121–31 <https://doi.org/10.53337/jhki.v1i02.15>

¹⁵ Ewa Kulesza, 'The Protection of Customer Personal Data as an Element of Entrepreneurs' Ethical Conduct', *Annales. Etyka w Życiu Gospodarczym*, 21.7 (2018), 27–44 <https://doi.org/10.18778/1899-2226.21.7.02>

¹⁶ Claudia Quelle, 'Enhancing Compliance under the General Data Protection Regulation: The Risky Upshot of the Accountability- and Risk-Based Approach', *European Journal of Risk Regulation*, 9.3 (2018), 502–26 <https://doi.org/10.1017/err.2018.47>

¹⁷ Valentin Rupp and Max von Grafenstein, 'Clarifying "Personal Data" and the Role of Anonymisation in Data Protection Law Including and Excluding Data from the Scope of the GDPR (More Clearly) through

only process data according to the purposes for which it was obtained and taking into account the rights of data subjects.¹⁸ The principle of accountability relates to the principle of responsibility of each party related to the processing of personal data. Therefore, the roles of each data processing party are regulated.¹⁹ Data processing parties must demonstrate compliance with PDP requirements, all parties must be proactive in processing data in accordance with the law, maintaining processed personal data, providing notifications regarding personal data leaks, and providing updates regarding data processing carried out to data subjects.²⁰ All of the principles above aim to provide security for all data processing parties. Data processing is a complicated process because it relates to a person's personal information, therefore PDP exists as a legal patronage that protects citizens' rights to be protected from data leaks in data processing.²¹

Economic analysis of law looks at the efficiency aspect to minimize the costs of operating legal (rules) that have been prepared so as not to cause high economic costs and inefficiency.²² This article will discuss the relevance of using an economic approach to personal data protection practices. As a law regulating economic issues, the personal data protection law requires the help of other sciences outside the law to interpret the meaning of legal rules. Using the rule of reason principle in the PDP Law is a proof process that requires the help of non-legal factors such as economics.²³

Personal data protection cases are one of the legal cases that are complicated to handle compared to other legal cases, where analysis from an economic perspective is necessary to help when carrying out the evidentiary process for many instances. Because personal data is closely related to economic factors, as mentioned earlier, personal data is considered the new gold, a precious and costly commodity. Moreover, existing personal data can be used for data theft related to economic losses incurred or to win elections in Indonesia. So, related to personal data, many non-legal factors such as economics also influence legal development, mainly because personal data has very high economic value using Richard Posner's theory that the principles of economics are used in the use of law because it is a tool for analyzing and answering questions about the law. Furthermore, it is said that the economic approach to law is intended to concentrate on how economic thinking is related to the rule of law.²⁴

Refining the Concept of Data Protection', *Computer Law and Security Review*, 52.1 (2024), 105932 <https://doi.org/10.1016/j.clsr.2023.105932>

¹⁸ Alan Dahi and Marcelo Corrales Compagnucci, 'Device Manufacturers as Controllers – Expanding the Concept of "Controllorship" in the GDPR', *Computer Law & Security Review*, 47 (2022) <https://doi.org/10.1016/j.clsr.2022.105762>

¹⁹ Talita Maria Tsekoura and Fereniki Panagopoulou, 'GDPR: A Critical Review of the Practical, Ethical and Constitutional Aspects One Year after It Entered into Force', *International Journal of Human Rights and Constitutional Studies*, 7.1 (2020), 35 <https://doi.org/10.1504/IJHRCS.2020.106548>

²⁰ Yuliannova Lestari and M. Misbahul Mujib, 'Optimizing Personal Data Protection Legal Framework in Indonesia (a Comparative Law Study)', *Supremasi Hukum: Jurnal Kajian Ilmu Hukum*, 11.2 (2022), 203 <https://doi.org/10.14421/sh.v11i2.2729>

²¹ Blessing Mutiro, 'The Future of EU Data Protection Law for Collectives: A Reverse Brussels Effect', *European Data Protection Law Review*, 9.4 (2023), 409–17 <https://doi.org/10.21552/edpl/2023/4/7>

²² Andriyanto Adhi Nugroho, Atik Winanti, and Surahmad Surahmad, 'Personal Data Protection in Indonesia: Legal Perspective', *International Journal of Multicultural and Multireligious Understanding*, 7.7 (2020), 183 <https://doi.org/10.18415/ijmmu.v7i7.1773>

²³ Filippo Lorè and others, 'An AI Framework to Support Decisions on GDPR Compliance', *Journal of Intelligent Information Systems*, 61.2 (2023), 541–68 <https://doi.org/10.1007/s10844-023-00782-4>

²⁴ Richard A Posner, 'Law and Economics in Common-Law, Civil-Law, and Developing Nations', *Ratio Juris*, 17.1 (2004), 66–79 <https://doi.org/10.4013/rechtd.2009.12.04>

The Economic Analysis of Law theory developed by Richard Posner can be used as an analytical tool in data protection. It can also help in solving personal data protection problems. Based on this reality, the legal issue related to the economic approach in personal data protection law is regarding the relevance of using an economic approach to personal data theft, especially concerning data theft, which has recently increased. According to Posner, the role of law must be seen in terms of value, utility, and efficiency. Posner defines efficiency as the allocation of resources where value is maximized. Next, Posner expressed his views on using economic theory in law by saying that many legal doctrines are best understood and explained as efforts to increase resource efficiency, a system for maximizing society's wealth.

The use of resources (production factors) must be carried out rationally and efficiently. Resources are said to be used efficiently if all available resources are fully utilized, and the mode of use is such that there are no other modes of use that would increase the prosperity of society. To understand efficiency issues, two definitions of efficiency are usually used to assess the use of resources, namely productive efficiency and allocative efficiency. Economic analysis of law looks at the efficiency aspect in determining choices in human life. The concepts of choice and rationality result in people having to incur costs because they have to abandon one option to pursue another that they consider better.²⁵ When compared to previous studies, this study displays a difference, in which this research only discusses the comparison of Data Protection Acts between Indonesia, and Sweden on the scope of the Personal Data Protection Supervisory Agency. Based on the background above, the problem discussed in this study is what is suitable model for personal data protection supervisory agency for Indonesia.

2. Research Method

The research method in this research is qualitative legal research.²⁶ This research is descriptive and aims to explain a legal event or legal condition.²⁷ The legal materials used in this study were secondary data sources by emphasizing and adhering to the juridical aspects, comprising legal materials or primary legal materials which include Law No. 27 of 2022 concerning Personal Data Protection Act (PDPA) as well as the GDPR that applies in European Union countries including Sweden on May 25, 2018.²⁸ This research examined law with the object of legal norms and it studies legal aspects and legal comparisons.²⁹ At this stage, the method of interpretation of the legal system is applied by investigating the similarities and differences in the legal system of rules related to personal data, there by obtaining a form of personal data monitoring body that is compatible with the Indonesian legal state.

²⁵ Nahshon Perez, 'Posner's "Law and Economics" and Politics: Bringing State-Skepticism Back In', *Journal of Social Philosophy*, 49.4 (2018), 589–609 <https://doi.org/10.1111/josp.12263>

²⁶ Kelik Wardiono and Wardah Yuspin, 'The Sharia Microfinance and the Counter-Hegemonic Movement: Examining the Legal Norms Regulating Aspects of Institutional and Business Activities in Surakarta', *Humanities and Social Sciences Reviews*, 7.3 (2019), 45–51 <https://doi.org/10.18510/hssr.2019.737>

²⁷ Daniar Supriyadi, 'The Regulation of Personal and Non-Personal Data in the Context of Big Data', *Journal of Human Rights, Culture and Legal System*, 3.1 (2023), 33–69 <https://doi.org/10.53955/jhcls.v3i1.71>

²⁸ W. Gregory Voss and Kimberly A. Houser, 'Personal Data and the Gdpr: Providing a Competitive Advantage for u.s. Companies', *American Business Law Journal*, 56.2 (2019), 287–344 <https://doi.org/10.1111/ablj.12139>

²⁹ Vasyi Kopcha, 'Methodology of Legal Phenomenon Research: Concept, Structure, Tools', *Law Review of Kyiv University of Law*, 1, 2020, 54–58 <https://doi.org/10.36695/2219-5521.1.2020.08>

3. Results and Discussion

3.1. The Model of Regulations Supervisory Officer in Sweden

In 2016, the European Union, for instance, agreed on a package of regulations, the General Guidelines for General Data Protection Regulation, commonly called the GDPR.³⁰ This success recompensed the pioneering initiative carried out for the past two decades. This instrument requires the treatment of limited data in the corridor of respecting privacy and the individual rights of the data owner (data subject), so that the information collected cannot be used for purposes other than the initial purpose that the user knows when registering for a digital service.³¹ In cross-border data transfer and placement, the GDPR stipulates that cross-border data transfer activities can only be carried out in limited countries with adequate standards.³²

The European Union has General Data Protection (GDPR) implementing personal data protection rules on 25 May 2018.³³ The principle of transparency states that citizens can access, change, and delete their data from the company's customer data anytime.³⁴ Companies are also asked to be transparent about why they collect data and how they will use it.³⁵ Companies are also asked to be transparent about why they collect data and how they will use it. The protection of personal data in the GDPR regarding race, ethnicity, politics, health, gender³⁶, and sexuality applies.³⁷

Adequate privacy protection regarding data and personal can create a public trust to provide personal data for various interests of the greater community without being abused or violating their rights.³⁸ Therefore, this law will balance the rights of individuals and

³⁰ Chris Jay Hoofnagle, Bart van der Sloot, and Frederik Zuiderveen Borgesius, 'The European Union General Data Protection Regulation: What It Is and What It Means', *Information and Communications Technology Law*, 28.1 (2019), 65–98 <https://doi.org/10.1080/13600834.2019.1573501>

³¹ Nadezhda Purtova, 'The Law of Everything. Broad Concept of Personal Data and Future of EU Data Protection Law', *Law, Innovation and Technology*, 10.1 (2018), 40–81 <https://doi.org/10.1080/17579961.2018.1452176>

³² Silvio Simani, Saverio Farsoni, and Paolo Castaldi, 'Supervisory Control and Data Acquisition for Fault Diagnosis of Wind Turbines via Deep Transfer Learning', *Energies*, 16.9 (2023), 3644 <https://doi.org/10.3390/en16093644>

³³ Dara Hallinan, 'Broad Consent under the GDPR: An Optimistic Perspective on a Bright Future', *Life Sciences, Society and Policy*, 16.1 (2020), 1–18 <https://doi.org/10.1186/s40504-019-0096-3>

³⁴ Emre Bayamloğlu, 'The Right to Contest Automated Decisions under the General Data Protection Regulation: Beyond the so-Called "Right to Explanation"', *Regulation and Governance*, 16.4 (2022), 1058–78 <https://doi.org/10.1111/regg.12391>

³⁵ Bart Custers and others, 'A Comparison of Data Protection Legislation and Policies across the EU', *Computer Law and Security Review*, 34.2 (2018), 234–43 <https://doi.org/10.1016/j.clsr.2017.09.001>

³⁶ Zlatana Knezevic and others, 'Gender-and Power Sensitivity, Securitisation and Social Peace: Rethinking Protection for Children Exposed to Post-Separation Violence', *Journal of Gender-Based Violence*, 6.1 (2022), 99–114 <https://doi.org/10.1332/239868021X16212648592069>

³⁷ Marvin van Bekkum and Frederik Zuiderveen Borgesius, 'Using Sensitive Data to Prevent Discrimination by Artificial Intelligence: Does the GDPR Need a New Exception?', *Computer Law and Security Review*, 48 (2023), 105770 <https://doi.org/10.1016/j.clsr.2022.105770>

³⁸ Brooke Willis, Tunmin Jai, and Mitzi Lauderdale, 'Trust and Commitment: Effect of Applying Consumer Data Rights on U.S. Consumers' Attitudes toward Online Retailers in Big Data Era', *Journal of Consumer Behaviour*, 20.6 (2021), 1575–90 <https://doi.org/10.1002/cb.1968>

communities whose interests are represented by the government.³⁹ Regulations regarding PDP will contribute significantly to creating order and progress in the information society.⁴⁰

The implementation of the PDPA requires the presence of a special commission whose task is to ensure the implementation of the Law.⁴¹ The PDPA has not regulated the establishment of a specific committee to oversee personal data protection but to realize personal data protection for data subjects.⁴² The government assigns the Ministry of Communication and Information to handle data privacy issues.⁴³ The data controller and data processor carry out processing and collecting data. In the GDPR stated that Personal Data Controllers are every person, public agency, and international organization that acts individually or collectively in determining goals and exercising control over the processing of Personal Data.

Article 1 (5) explains that a Personal Data Processor is any person, public agency, or international organization acting individually or collectively in processing Personal Data on behalf of a Personal Data Controller. Data Controllers and Processors include individuals, public agencies, and international organizations. In carrying out their duties, data controllers and data processors have obligations that should be fulfilled so that they are carried out according to the PDPA. The responsibilities of data controllers are contained in Articles 20 to 50 of the Law. Meanwhile, the obligations of Data Processors are contained in Article 51 and Article 52.⁴⁴

The establishment of an independent supervisory authority, for example, was emphasized by the European Union General Data Protection Regulation (EU GDPR)⁴⁵ 46/1995 and European Council Convention 108,⁴⁶ almost 90% of European countries adhere to this model, including Sweden.⁴⁷ To ensure security in data processing carried out by controllers and data processors, the GDPR has established an independent personal data protection supervisory agency consisting of the European Data Protection Board (EDPB)

³⁹ Francis Aldhouse, 'A Reflection on the Priorities of a Data Protection Authority', *Computer Law and Security Review*, 34.4 (2018), 816–23 <https://doi.org/10.1016/j.clsr.2018.05.002>

⁴⁰ Panchapawn Chatsuwana and others, 'Personal Data Protection Compliance Assessment: A Privacy Policy Scoring Approach and Empirical Evidence from Thailand's SMEs', *Heliyon*, 9.10 (2023), e20648 <https://doi.org/10.1016/j.heliyon.2023.e20648>

⁴¹ Ali Alibeigi, Abu Bakar Munir, and Adeleh Asemi, 'Compliance with Malaysian Personal Data Protection Act 2010 by Banking and Financial Institutions, a Legal Survey on Privacy Policies', *International Review of Law, Computers and Technology*, 35.3 (2021), 365–94 <https://doi.org/10.1080/13600869.2021.1970936>

⁴² Hanne Sørsum, Ragnhild Eg, and Wanda Presthus, 'A Gender Perspective on GDPR and Information Privacy', *Procedia Computer Science*, 196.2021 (2021), 175–82 <https://doi.org/10.1016/j.procs.2021.12.003>

⁴³ Nur Fatimatuz Zuhroh and Tony Dwi Susanto, 'Analysis of the Driving Factors for the Implementation of Personal Data Protection in Local Governments', in *AIP Conference Proceedings* (American Institute of Physics Inc., 2023), MMCDLXXXII, 2021 <https://doi.org/10.1063/5.0134013>

⁴⁴ Livia Puljak, Anamarija Mladinić, and Zvonimir Koporc, 'Workload and Procedures Used by European Data Protection Authorities Related to Personal Data Protection: A Cross-Sectional Study', *BMC Research Notes*, 16.1 (2023), 1–7 <https://doi.org/10.1186/s13104-023-06308-z>

⁴⁵ Katarzyna Kolasa and others, 'Future of Data Analytics in the Era of the General Data Protection Regulation in Europe', *PharmacoEconomics*, 38.10 (2020), 1021–29 <https://doi.org/10.1007/s40273-020-00927-1>

⁴⁶ Alessandro Mantelero, 'The Future of Data Protection: Gold Standard vs. Global Standard', *Computer Law and Security Review*, 40.xxxx (2021), 1–5 <https://doi.org/10.1016/j.clsr.2020.105500>

⁴⁷ Awatef Issaoui, Jenny Örtensjö, and M Sirajul Islam, 'Exploring the General Data Protection Regulation (GDPR) Compliance in Cloud Services: Insights from Swedish Public Organizations on Privacy Compliance', *Future Business Journal*, 9.1 (2023) <https://doi.org/10.1186/s43093-023-00285-2>

and Data Protection Authorities (DPA).⁴⁸ This aligns with the primary objective of establishing the GDPR to protect personal data and respect the use of personal data principles responsibly and openly.⁴⁹

DPA is an independent government agency with the main task of overseeing personal data per what is contained in the GDPR. These institutions must be spread across every European Union country. The basis for establishing the DPA has been stated in Article 51 in the GDPR relating to personal data controllers state that Each Member State shall provide one or more independent public authorities responsible for enforcing the standards of this Regulation to protect the fundamental rights and freedoms of individuals in regulating and facilitating the free flow of personal data within the Union.⁵⁰

The existing personal data supervisory authority is an independent institution whose main task is to supervise the traffic and security of personal data. This institution is referred to DPA. Referring to Article 52 GDPR, the personal data protection authority must at least meet the independence requirements, namely that each supervisory authority must act with complete independence in carrying out its duties and exercising its authority under the law. Apart from that, the personal data supervisory agency must have human resource independence where the State must ensure that each Supervisory Authority selects its staff in accordance with the law or members of the supervisory authority concerned. Apart from that, financial independence is also something that must be fulfilled by personal data monitoring institutions.⁵¹ Where here financial control must not affect independence. Therefore, the state must ensure that each Supervisory Body subject to financial control does not affect its independence and has its own public annual budget which can be part of the state budget.

Article 52 of the GDPR explains that at least five categories of independent data protection authority bodies exist. This article can be adopted as a principle for establishing a personal data protection authority in Indonesia. In addition, the formation of a personal data protection authority in Indonesia can be granted the status of an auxiliary state's organ. While the DPA's duties and powers have been stipulated in Article 57 of the GDPR, some of the DPA's tasks include supervising and enforcing GDPR, raising public awareness about the importance of maintaining the confidentiality of personal data, facilitating public and data controller consultations about the problems being experienced by parties who handle personal data conflicts, and continuing to innovate in developing networks for parties who have an essential role in personal data protection. In addition, the DPA also has the authority to demonstrate its position as an independent supervisory institution expressly. This authority includes the authority to carry out investigative and corrective activities and impose sanctions or fines on data controllers and processors.⁵²

⁴⁸ Rik Crutzen, Gjalte Jorn Ygram Peters, and Christopher Mondschein, 'Why and How We Should Care about the General Data Protection Regulation', *Psychology and Health*, 34.11 (2019), 1347–57 <https://doi.org/10.1080/08870446.2019.1606222>

⁴⁹ Jukka Ruohonen and Kalle Hjerpe, 'The GDPR Enforcement Fines at Glance', *Information Systems*, 106 (2022), 101876 <https://doi.org/10.1016/j.is.2021.101876>

⁵⁰ Gábor János Dudás, András György Kovács, and Márton Schultz, 'Personal Data as Consideration', *Santander Art and Culture Law Review*, 9.2 (2023), 215–42 <https://doi.org/10.4467/2450050XSNR.23.029.18649>

⁵¹ Ari Wibowo, Widya Alawiyah, and Azriadi, 'The Importance of Personal Data Protection in Indonesia's Economic Development', *Cogent Social Sciences*, 10.1 (2024) <https://doi.org/10.1080/23311886.2024.2306751>

⁵² Charles Raab and Ivan Szekely, 'Data Protection Authorities and Information Technology', *Computer Law and Security Review*, 33.4 (2017), 421–33 <https://doi.org/10.1016/j.clsr.2017.05.002>

Apart from the DPA, there is the European Data Protection Board (EDPB), a personal data protection supervisory body established to oversee the implementation of the GDPR at the European Union level. This supervisory body has a composition of members from each personal data monitoring agency at the national level (DPA). EDPB has the competencies regulated in Article 56 of GDPR.⁵³ Apart from that, EDPB also has quite crucial tasks. These tasks include namely, first, providing direction regarding GDPR, which contains rules and recommendations, and carrying out an understanding of GDPR uniformity; second, ensuring consistency in the implementation of GDPR rules in European Union member countries; third, ensuring that there is a cooperative relationship among DPA members in each European Union member country; fourth publish periodic guidelines on the main concepts and implementation of the GDPR; fifth handle complaints regarding receipt of reports of GDPR violations and carry out investigative activities related to said violations; sixth providing facilities for data protection issues; seventh be the first party if there are questions related to data protection in each European Union country.^{54 55}

The EU GDPR also mandates explicitly the establishment of an independent supervisory authority, including the APEC Privacy Framework, which also emphasizes the establishment of personal data protection enforcement agencies or institutions, with the model assigned to each country, whether in the form of Privacy Enforcement Authorities, multiagency enforcement bodies, a network of designated industry bodies, courts, and tribunals, or a combination of various models.⁵⁶ An independent supervisory authority, also known as the DPA, is a public agency responsible for monitoring the application of regulations and protecting individuals' fundamental rights and freedoms concerning the processing of personal data.⁵⁷ Article 4 (21) of the EU GDPR states that supervisory authority means an independent public authority that a Member State establishes under Article 51.⁵⁸ Although the EU GDPR requires establishing a supervisory authority, it does not explicitly mandate the adoption of a single supervisory authority model.⁵⁹

⁵³ Gaurav Natarajan Ramani, 'One Size Doesn't Fit All: The General Data Protection Regulation Vis-à-Vis International Commercial Arbitration', *Arbitration International*, 37.3 (2021), 613–30 <https://doi.org/10.1093/arbint/aiaa032>

⁵⁴ Md Zahurul Haq, 'How Does the General Data Protection Regulation (GDPR) Affect Financial Intelligence Exchange with Third Countries?', *Journal of Money Laundering Control*, 27.1 (2024), 158–70 <https://doi.org/10.1108/JMLC-09-2022-0137>

⁵⁵ Ira S. Rubinstein and Nathaniel Good, 'The Trouble with Article 25 (and How to Fix It): The Future of Data Protection by Design and Default', *International Data Privacy Law*, 10.1 (2020), 37–56 <https://doi.org/10.1093/idpl/ipz019>

⁵⁶ Bambang Sugeng Rukmono, Pujiyono Suwadi, and Muhammad Saiful Islam, 'The Effectiveness of Recovering Losses on State Assets Policy in Dismissing Handling of Corruption', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 299–330 <https://doi.org/10.53955/jhcls.v4i2.259>

⁵⁷ Tomáš Pikulík and Peter Štarchoň, 'Public Registers with Personal Data under Scrutiny of DPA Regulators', *Procedia Computer Science*, 170.2019 (2020), 1170–79 <https://doi.org/10.1016/j.procs.2020.03.033>

⁵⁸ Frederik Zuiderveen Borgesius and others, 'The GDPR's Rules on Data Breaches: Analysing Their Rationales and Effects', *SCRIPTed: A Journal of Law, Technology & Society*, 20.2 (2023), 352–82 <https://doi.org/10.2218/scrip.20.2.2023.8979>

⁵⁹ Nguyen Binh Truong and others, 'GDPR-Compliant Personal Data Management: A Blockchain-Based Solution', *IEEE Transactions on Information Forensics and Security*, 15 (2020), 1746–61 <https://doi.org/10.1109/TIFS.2019.2948287>

The EU GDPR allows countries to form a single or multiple supervisory authority.⁶⁰ The EU GDPR emphasizes the independence of supervisory authorities so that these bodies can carry out their duties and exercise their powers in complete autonomy, which is a crucial component of protecting natural persons concerning the processing of their data.⁶¹ It is, therefore, mandatory for countries to designate one or more independent public authorities as supervisory authorities to be responsible for monitoring the application of data protection laws⁶², protecting the fundamental rights and freedoms of individuals about processing, and facilitating cross-border data flows.⁶³ Supervisory authorities must contribute to the consistent application of data protection regulations.⁶⁴

Suppose a country establishes several supervisory authorities at once. In that case, the country must develop a legal mechanism to ensure the effective participation of the supervisory authority in the consistency mechanism as stipulated in the EU GDPR.⁶⁵ The country should designate a supervisory authority as the sole point of contact for effective participation in the compliance mechanism to ensure speedy and smooth cooperation with the other supervisory authorities, particularly the EU Council and EU Commission.⁶⁶ The designated supervisory authority represents the Board and shall establish mechanisms to ensure compliance by other authorities with the rules relating to compliance mechanisms.⁶⁷

According to the implementation of the duties of the personal data supervisor in Sweden, it has effectively carried out its duties.⁶⁸ This is proven by the implementation of the principle of accountability in the supervision of personal data.⁶⁹ In this case it can be said that each part in the processing of personal data is responsible for carrying out its respective functions to protect the personal rights of the data subject.⁷⁰ The duties of the personal data supervisory body in Sweden, it has effectively carried out its duties. This is proven by the implementation of the principle of accountability in the supervision of personal data. In this case it can be said that each part in the processing of personal data is responsible for

⁶⁰ Paweł Hajduk, 'The Powers of the Supervisory Body in the GDPR as a Basis for Shaping the Practices of Personal Data Processing', *Review of European and Comparative Law*, 45.2 (2021), 57–75 <https://doi.org/10.31743/recl.10733>

⁶¹ Valery Stepenko and others, 'EU Personal Data Protection Standards and Regulatory Framework', *Journal of Applied Security Research*, 17.2 (2022), 190–207 <https://doi.org/10.1080/19361610.2020.1868928>

⁶² Christian Meurisch and Max Mühlhäuser, 'Data Protection in AI Services', *ACM Computing Surveys*, 2021, 1–38 <https://doi.org/10.1145/3440754>

⁶³ Julian Wagner, 'The Transfer of Personal Data to Third Countries under the GDPR: When Does a Recipient Country Provide an Adequate Level of Protection?', *International Data Privacy Law*, 8.4 (2018), 318–37 <https://doi.org/10.1093/idpl/ipy008>

⁶⁴ Apostolos Malatras and others, 'Pan-European Personal Data Breaches: Mapping of Current Practices and Recommendations to Facilitate Cooperation among Data Protection Authorities', *Computer Law & Security Review*, 33.4 (2017), 458–69 <https://doi.org/10.1016/j.clsr.2017.03.013>

⁶⁵ FangBing Zhu and Zongyu Song, 'Systematic Regulation of Personal Information Rights in the Era of Big Data', *SAGE Open*, 12.1 (2022), 1–11 <https://doi.org/10.1177/21582440211067529>

⁶⁶ Francesco Vigna, 'Co-Regulation Approach for Governing Big Data: Thoughts on Data Protection Law', in *ACM International Conference Proceeding Series*, 2022, pp. 59–63 <https://doi.org/10.1145/3560107.3560117>

⁶⁷ Heru Setiawan and others, 'Digitalization of Legal Transformation on Judicial Review in the Constitutional Court', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 263–98 <https://doi.org/10.53955/jhcls.v4i2.263>

⁶⁸ Eric Lachaud, 'What GDPR Tells about Certification', *Computer Law and Security Review*, 38 (2020), 105457 <https://doi.org/10.1016/j.clsr.2020.105457>

⁶⁹ Stephen Breen, Karim Ouazzane, and Preeti Patel, 'GDPR: Is Your Consent Valid?', *Business Information Review*, 37.1 (2020), 19–24 <https://doi.org/10.1177/0266382120903254>

⁷⁰ Al Sentot Sudarwanto and Dona Budi Budi Kharisma, 'Comparative Study of Personal Data Protection Regulations in Indonesia, Hong Kong and Malaysia', *Journal of Financial Crime*, 29.4 (2022), 1443–57 <https://doi.org/10.1108/JFC-09-2021-0193>

carrying out its respective functions to protect the personal rights of the data subject.⁷¹ This is supported by data on personal data theft in Sweden amounting to 3,500 throughout 2023. From this figure, it can be seen that there was a sharp decline in the number of data thefts from the previous year. This figure is much lower than Indonesia, where the figure continues to rise until it reaches almost 150 million cases throughout 2023.

The typical penalties imposed for breaches of the Swedish Penal Code resulting in prosecution are a fine and compensation awarded to the victim.⁷² Acceptable rates vary according to the degree of crime and income of the person responsible for the offense. In March 2022, an employee of the Swedish Police who had conducted several unauthorized searches of the Police Data Registry was sentenced to pay a fine of SEK 22,5000 (approx. EUR 2,250) and fees to the Victims of Crime Fund (Sw. Brottsofferfonden).

3.2. *The Model of Regulations Supervisory Officer in Indonesia*

In the context of the global economy, personal data protection has actually become an important instrument for conducting international trade. This guarantee of protection is a necessity for international economic cooperation partners, such as the Organization for Economic Cooperation and Development (OECD)⁷³, Asia-Pacific Economic Cooperation (APEC) which has formed special instruments to protect personal data in implementing international transactions.⁷⁴ Indonesia, as a strategic country in international trade has the pretension to have adequate personal data protection regulations in place with international standards. Even though Indonesia already has personal data protection regulations, when compared with other countries, especially in the region Southeast Asia, which is part of ASEAN, Indonesia is a country that is lagging behind in preparing data privacy protection.⁷⁵

As human activities become more digitally connected, personal data intrusions become increasingly high. This is coupled with a condition where the majority of Indonesian people feel that personal data is not something that must be protected, so they easily share their personal data without realizing the importance of protecting that data. Reports regarding the increase in personal data leaks in Indonesia continue to increase, in 2023 alone there will be an increase of 50 million cases of personal data theft from the previous year. This condition makes the accountability of the existing personal data protection law questionable. Because after the enactment of the personal data protection law, reports of data theft have increased in number. The principle of accountability has been mentioned and is the basis for the pattern of accountability in the PDP Law.⁷⁶ It is stated that what is meant by the principle of

⁷¹ Ester Herlin-Karnell, 'EU Data Protection Rules and the Lack of Compliance in Sweden', *Nordic Journal of European Law*, 3.2 (2020), 95–103 <https://doi.org/10.36969/njel.v3i2.22395>

⁷² Chlotia Garrison and Clovia Hamilton, 'A Comparative Analysis of the EU GDPR to the US's Breach Notifications', *Information and Communications Technology Law*, 28.1 (2019), 99–114 <https://doi.org/10.1080/13600834.2019.1571473>

⁷³ Ran Zhuo and others, 'The Impact of the General Data Protection Regulation on Internet Interconnection', *Telecommunications Policy*, 45.2 (2021) <https://doi.org/10.1016/j.telpol.2020.102083>

⁷⁴ Mark Phillips, 'International Data-Sharing Norms: From the OECD to the General Data Protection Regulation (GDPR)', *Human Genetics*, 137.8 (2018), 575–82 <https://doi.org/10.1007/s00439-018-1919-7>

⁷⁵ Vina Himmatus Sholikhah, Noering Ratu Fatheha Fauziah Sejati, and Diyanah Shabitah, 'Personal Data Protection Authority: Comparative Study between Indonesia, United Kingdom, and Malaysia', *Indonesian Scholars Scientific Summit Taiwan Proceeding*, 3 (2021), 54–63 <https://doi.org/10.52162/3.2021112>

⁷⁶ Rina Shahriyani Shahrullah, Jihyun Park, and Irwansyah Irwansyah, 'Examining Personal Data Protection Law of Indonesia and South Korea: The Privacy Rights Fulfilment', *Hasanuddin Law Review*, 10.1 (2024), 1–20 <https://doi.org/10.20956/halrev.v10i1.5016>

accountability is that all parties involved in processing and monitoring Personal Data act responsibly so as to guarantee a balance of rights and obligations of the parties involved, including the Subject of Personal data. However, evidently perceived, the sharp increase in personal data theft means that the principle of accountability is not appropriately implemented, where there has been massive a leak of personal data in several areas, such as data controllers, personal data holders and personal data users.⁷⁷ The authority to access personal data is carried out in various fields. Starting from the fields of human rights, telecommunications media, defense and security, justice, health, population, trade and industry, to the economy including banking.⁷⁸ This diversity has many implications.⁷⁹

In an effort to realize personal data protection, the establishment of an independent supervisory institution is inevitable. In this regard, independence in this context must also be understood as being free from all kinds of government interference. Practices in the world even show the importance of monitoring personal data through independent institutions. Regulations that regulate its protective mechanisms. The spread of regulations has resulted in overlapping mechanisms and authorities in protecting personal data itself.⁸⁰ Furthermore, another weakness of the supervisory mechanism for personal data protection in Indonesia is the lack of uniformity in the mechanism for carrying out supervision between these agencies, making efforts to protect personal data in all sectors of life uneven. Observing at the existing condition of legal enforcement mechanisms that are expected to guarantee protection for personal data tend to show shortcomings.⁸¹

Therefore, the establishment of a personal data supervisor is an inevitable agenda in grounding personal data protection in a more concrete Indonesian legal framework.⁸² Thus, through a special agency that has the authority to supervise all forms of personal data, it is hoped that it will not only be able to overcome these gaps, but will be the first step for improving personal data protection mechanisms in the future.⁸³ Addressing the supervisor model the most suitable form of a supervisory agency to be implemented in Indonesia is a personal data supervisory agency with a single authority model.⁸⁴ By selecting this single

⁷⁷ Leanne Cochrane, Lina Jasmontaite-Zaniewicz, and David Barnard-Wills, 'Data Protection Authorities and Their Awareness-Raising Duties under the GDPR: The Case for Engaging Umbrella Organisations to Disseminate Guidance for Small and Medium-Size Enterprises', *European Data Protection Law Review*, 6.3 (2020), 352–64 <https://doi.org/10.21552/edpl/2020/3/6>

⁷⁸ Rina Arum Prastyanti and Ridhima Sharma, 'Establishing Consumer Trust Through Data Protection Law as a Competitive Advantage in Indonesia and India', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 354–90 <https://doi.org/10.53955/jhcls.v4i2.200>

⁷⁹ Aqil Athalla Reksoprodjo, Muhammad Dachyar, and Novandra Rhezza Pratama, 'A Decision-Making Model for Selecting Personal Data Protection Frameworks for Companies in Indonesia', *Journal of System and Management Sciences*, 14.2 (2024), 156–71 <https://doi.org/10.33168/JSMS.2024.0210>

⁸⁰ Raditya Andhikaputra and others, 'User's Awareness of Personal Data Leakage in E-Commerce Application', in *E3S Web of Conferences*, 2023, CDXXVI <https://doi.org/10.1051/e3sconf/202342602063>

⁸¹ Sidik Prabowo and others, 'A Data Protection Design for Online Exam Proctoring in Compliance with the Indonesian Personal Data Protection Law', in *Lecture Notes in Networks and Systems* (Springer Science and Business Media Deutschland GmbH, 2024), 824 LNNS, 523–35 https://doi.org/10.1007/978-3-031-47715-7_36

⁸² Muhammad Faqih Adhiwisaksana and Tiurma M.Pitta Allagan, 'The Competent Forum and the Applicable Law in Personal Data Protection With Foreign Element', *Indonesian Journal of International Law*, 20.3 (2023), 442–70 <https://doi.org/10.17304/ijil.vol20.3.2>

⁸³ Muhammad Deckri Algamar and Noriswadi Ismail, 'Data Subject Access Request: What Indonesia Can Learn and Operationalise in 2024?', *Journal of Central Banking Law and Institutions*, 2.3 (2023), 481–512 <https://doi.org/10.21098/jcli.v2i3.171>

⁸⁴ Yulia Neta, Agsel Awanisa, and Melisa Melisa, 'The Urgency of Independent Supervisory Authority Towards Indonesia's Personal Data Protection', *Constitutionale*, 3.1 (2022), 21–42 <https://doi.org/10.25041/constitutionale.v3i1.2535>

authority, the agency does not overlap its duties with others, and there is expected to be no conflict between the existing supervisory bodies if the other model is adopted. Apart from that, the single authority model is an independent commission that reports to and is directly responsible to the president for subsiding red tape and its duties' effectiveness.⁸⁵ By having a centralized personal data supervisor, personal data traffic can be monitored properly. Apart from that, with the existence of this agency hoped that personal data controllers can be fully responsible for all uses of personal data that are against the law.⁸⁶

4. Conclusion

The supervisory agency for protecting personal data in this PDP law has been regulated, however there has yet to be an official establishment by the government regarding this body. Initially, this agency would soon be formed through a presidential regulation that had yet to be arranged. Indonesia's ideal personal data supervisory agency is to make various comparisons with personal data supervisory agencies from other countries. The most probable model is a single authority agency, where there is only one supervisor, thus more effective in carrying out its duties and authorities. Concerning the institutional structure, this agency should be formed as a direct independent commission under the president. In terms of reporting and accountability, it can be performed faster. The independence of this supervisory body needs to be used as a reference so that the goal of creating personal data security in Indonesia can be achieved.

References

- Adhiwisaksana, Muhammad Faqih, and Tiurma M.Pitta Allagan, 'The Competent Forum and the Applicable Law in Personal Data Protection With Foreign Element', *Indonesian Journal of International Law*, 20.3 (2023), 442–70 <https://doi.org/10.17304/ijil.vol20.3.2>
- Aldhouse, Francis, 'A Reflection on the Priorities of a Data Protection Authority', *Computer Law and Security Review*, 34.4 (2018), 816–23 <https://doi.org/10.1016/j.clsr.2018.05.002>
- Algamar, Muhammad Deckri, and Noriswadi Ismail, 'Data Subject Access Request: What Indonesia Can Learn and Operationalise in 2024?', *Journal of Central Banking Law and Institutions*, 2.3 (2023), 481–512 <https://doi.org/10.21098/jcli.v2i3.171>
- Alibeigi, Ali, Abu Bakar Munir, and Adeleh Asemi, 'Compliance with Malaysian Personal Data Protection Act 2010 by Banking and Financial Institutions, a Legal Survey on Privacy Policies', *International Review of Law, Computers and Technology*, 35.3 (2021), 365–94 <https://doi.org/10.1080/13600869.2021.1970936>
- Andhikaputra, Raditya, Samuel Marc Anthony Tumbel, Jason Vida, Anderes Gui, I Gusti Made Karmawan, and Yuvaraj Ganesan, 'User's Awareness of Personal Data Leakage in E-Commerce Application', in *E3S Web of Conferences*, 2023, CDXXVI <https://doi.org/10.1051/e3sconf/202342602063>
- Bayamlıoğlu, Emre, 'The Right to Contest Automated Decisions under the General Data Protection Regulation: Beyond the so-Called "Right to Explanation"', *Regulation and Governance*, 16.4

⁸⁵ Mohammad Rajib Uddin, Shahriar Akter, and Wai Jin Thomas Lee, 'Developing a Data Breach Protection Capability Framework in Retailing', *International Journal of Production Economics*, 271.October 2023 (2024), 109202 <https://doi.org/10.1016/j.ijpe.2024.109202>

⁸⁶ I. Gusti Ngurah Parikesit Widiatedja and Neha Mishra, 'Establishing an Independent Data Protection Authority in Indonesia: A Future-Forward Perspective', *International Review of Law, Computers & Technology*, 37.3 (2023), 252–73 <https://doi.org/10.1080/13600869.2022.2155793>

- (2022), 1058–78 <https://doi.org/10.1111/rego.12391>
- Bekkum, Marvin van, and Frederik Zuiderveen Borgesius, ‘Using Sensitive Data to Prevent Discrimination by Artificial Intelligence: Does the GDPR Need a New Exception?’, *Computer Law and Security Review*, 48 (2023), 105770 <https://doi.org/10.1016/j.clsr.2022.105770>
- Belen Saglam, Rahime, Jason R.C. Nurse, and Duncan Hodges, ‘Personal Information: Perceptions, Types and Evolution’, *Journal of Information Security and Applications*, 66.March (2022), 103163 <https://doi.org/10.1016/j.jisa.2022.103163>
- Bentotahewa, Vibhushinie, Chaminda Hewage, and Jason Williams, ‘The Normative Power of the GDPR: A Case Study of Data Protection Laws of South Asian Countries’, *SN Computer Science*, 3.3 (2022), 1–18 <https://doi.org/10.1007/s42979-022-01079-z>
- Borgesius, Frederik Zuiderveen, Hadi Asghari, Noël Bangma, and Jaap-Henk Hoepman, ‘The GDPR’s Rules on Data Breaches: Analysing Their Rationales and Effects’, *SCRIPTed: A Journal of Law, Technology & Society*, 20.2 (2023), 352–82 <https://doi.org/10.2218/scrip.20.2.2023.8979>
- Breen, Stephen, Karim Ouazzane, and Preeti Patel, ‘GDPR: Is Your Consent Valid?’, *Business Information Review*, 37.1 (2020), 19–24 <https://doi.org/10.1177/0266382120903254>
- Bu-Pasha, Shakila, ‘Cross-Border Issues under EU Data Protection Law with Regards to Personal Data Protection’, *Information and Communications Technology Law*, 26.3 (2017), 213–28 <https://doi.org/10.1080/13600834.2017.1330740>
- Cantiello, Pasquale, Michele Mastroianni, and Massimiliano Rak, ‘A Conceptual Model for the General Data Protection Regulation’, in *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 2021, 12956 LNCS, 60–77 https://doi.org/10.1007/978-3-030-87010-2_5
- Chatsuwan, Panchapawn, Tanawat Phromma, Navaporn Surasvadi, and Suttipong Thajchayapong, ‘Personal Data Protection Compliance Assessment: A Privacy Policy Scoring Approach and Empirical Evidence from Thailand’s SMEs’, *Heliyon*, 9.10 (2023), e20648 <https://doi.org/10.1016/j.heliyon.2023.e20648>
- Cochrane, Leanne, Lina Jasmontaite-Zaniewicz, and David Barnard-Wills, ‘Data Protection Authorities and Their Awareness-Raising Duties under the GDPR: The Case for Engaging Umbrella Organisations to Disseminate Guidance for Small and Medium-Size Enterprises’, *European Data Protection Law Review*, 6.3 (2020), 352–64 <https://doi.org/10.21552/edpl/2020/3/6>
- Crutzen, Rik, Gjalt Jorn Ygram Peters, and Christopher Mondschein, ‘Why and How We Should Care about the General Data Protection Regulation’, *Psychology and Health*, 34.11 (2019), 1347–57 <https://doi.org/10.1080/08870446.2019.1606222>
- Cruz, Tiago, Luis Rosa, Jorge Proenca, Leandros Maglaras, Matthieu Aubigny, Leonid Lev, and others, ‘A Cybersecurity Detection Framework for Supervisory Control and Data Acquisition Systems’, *IEEE Transactions on Industrial Informatics*, 12.6 (2016), 2236–46 <https://doi.org/10.1109/TII.2016.2599841>
- Custers, Bart, Francien Dechesne, Alan M. Sears, Tommaso Tani, and Simone van der Hof, ‘A Comparison of Data Protection Legislation and Policies across the EU’, *Computer Law and Security Review*, 34.2 (2018), 234–43 <https://doi.org/10.1016/j.clsr.2017.09.001>
- Dahi, Alan, and Marcelo Corrales Compagnucci, ‘Device Manufacturers as Controllers – Expanding the Concept of “Controllorship” in the GDPR’, *Computer Law & Security Review*, 47 (2022) <https://doi.org/10.1016/j.clsr.2022.105762>
- Dudás, Gábor János, András György Kovács, and Márton Schultz, ‘Personal Data as

- Consideration', *Santander Art and Culture Law Review*, 9.2 (2023), 215–42 <https://doi.org/10.4467/2450050XSNR.23.029.18649>
- Garrison, Chlotia, and Clovia Hamilton, 'A Comparative Analysis of the EU GDPR to the US's Breach Notifications', *Information and Communications Technology Law*, 28.1 (2019), 99–114 <https://doi.org/10.1080/13600834.2019.1571473>
- Greenleaf, Graham, 'ASEAN's "New" Data Privacy Laws: Malaysia, the Philippines and Singapore', *Privacy Laws & Business International Report*, UNSW Law R.116 (2012), 22–24
- Gregory Voss, W., and Kimberly A. Houser, 'Personal Data and the Gdpr: Providing a Competitive Advantage for u.s. Companies', *American Business Law Journal*, 56.2 (2019), 287–344 <https://doi.org/10.1111/ablj.12139>
- Hajduk, Paweł, 'The Powers of the Supervisory Body in the GDPR as a Basis for Shaping the Practices of Personal Data Processing', *Review of European and Comparative Law*, 45.2 (2021), 57–75 <https://doi.org/10.31743/recl.10733>
- Hallinan, Dara, 'Broad Consent under the GDPR: An Optimistic Perspective on a Bright Future', *Life Sciences, Society and Policy*, 16.1 (2020), 1–18 <https://doi.org/10.1186/s40504-019-0096-3>
- Haq, Md Zahurul, 'How Does the General Data Protection Regulation (GDPR) Affect Financial Intelligence Exchange with Third Countries?', *Journal of Money Laundering Control*, 27.1 (2024), 158–70 <https://doi.org/10.1108/JMLC-09-2022-0137>
- Hendra, Hendra, Ravel Ravel, Novel Firdhaus, Michael Ari Kurniawan, and Gilbert Platina, 'E-Health Personal Data Protection In Indonesia', *Jurnal Hukum Kesehatan Indonesia*, 1.02 (2022), 121–31 <https://doi.org/10.53337/jhki.v1i02.15>
- Herlin-Karnell, Ester, 'EU Data Protection Rules and the Lack of Compliance in Sweden', *Nordic Journal of European Law*, 3.2 (2020), 95–103 <https://doi.org/10.36969/njel.v3i2.22395>
- Hicks, Deborah, 'Information Technology, Change and Information Professionals' Identity Construction: A Discourse Analysis', *Proceedings of the ASIST Annual Meeting*, 51.1 (2014) <https://doi.org/10.1002/meet.2014.14505101049>
- Hoofnagle, Chris Jay, Bart van der Sloot, and Frederik Zuiderveen Borgesius, 'The European Union General Data Protection Regulation: What It Is and What It Means', *Information and Communications Technology Law*, 28.1 (2019), 65–98 <https://doi.org/10.1080/13600834.2019.1573501>
- Issaoui, Awatef, Jenny Örtensjö, and M Sirajul Islam, 'Exploring the General Data Protection Regulation (GDPR) Compliance in Cloud Services: Insights from Swedish Public Organizations on Privacy Compliance', *Future Business Journal*, 9.1 (2023) <https://doi.org/10.1186/s43093-023-00285-2>
- Knezevic, Zlatana, Anna Nikupeteri, Merja Laitinen, and Kati Kallinen, 'Gender-and Power Sensitivity, Securitisation and Social Peace: Rethinking Protection for Children Exposed to Post-Separation Violence', *Journal of Gender-Based Violence*, 6.1 (2022), 99–114 <https://doi.org/10.1332/239868021X16212648592069>
- Kolasa, Katarzyna, W. Ken Redekop, Alexander Berler, Vladimir Zah, and Carl V. Asche, 'Future of Data Analytics in the Era of the General Data Protection Regulation in Europe', *PharmacoEconomics*, 38.10 (2020), 1021–29 <https://doi.org/10.1007/s40273-020-00927-1>
- Kopcha, Vasyl, 'Methodology of Legal Phenomenon Research: Concept, Structure, Tools', *Law Review of Kyiv University of Law*, 1, 2020, 54–58 <https://doi.org/10.36695/2219->

5521.1.2020.08

- Kulesza, Ewa, 'The Protection of Customer Personal Data as an Element of Entrepreneurs' Ethical Conduct', *Annales. Etyka w Życiu Gospodarczym*, 21.7 (2018), 27–44 <https://doi.org/10.18778/1899-2226.21.7.02>
- Lachaud, Eric, 'What GDPR Tells about Certification', *Computer Law and Security Review*, 38 (2020), 105457 <https://doi.org/10.1016/j.clsr.2020.105457>
- Lestari, Yuliannova, and M. Misbahul Mujib, 'Optimizing Personal Data Protection Legal Framework in Indonesia (a Comparative Law Study)', *Supremasi Hukum: Jurnal Kajian Ilmu Hukum*, 11.2 (2022), 203 <https://doi.org/10.14421/sh.v11i2.2729>
- Lorè, Filippo, Pierpaolo Basile, Annalisa Appice, Marco de Gemmis, Donato Malerba, and Giovanni Semeraro, 'An AI Framework to Support Decisions on GDPR Compliance', *Journal of Intelligent Information Systems*, 61.2 (2023), 541–68 <https://doi.org/10.1007/s10844-023-00782-4>
- Malatras, Apostolos, Ignacio Sanchez, Laurent Beslay, Iwen Coisel, Ioannis Vakalis, Giuseppe D'Acquisto, and others, 'Pan-European Personal Data Breaches: Mapping of Current Practices and Recommendations to Facilitate Cooperation among Data Protection Authorities', *Computer Law & Security Review*, 33.4 (2017), 458–69 <https://doi.org/10.1016/j.clsr.2017.03.013>
- Mantelero, Alessandro, 'The Future of Data Protection: Gold Standard vs. Global Standard', *Computer Law and Security Review*, 40.xxxx (2021), 1–5 <https://doi.org/10.1016/j.clsr.2020.105500>
- Maras, Marie Helen, and Alex Alexandrou, 'Determining Authenticity of Video Evidence in the Age of Artificial Intelligence and in the Wake of Deepfake Videos', *International Journal of Evidence and Proof*, 23.3 (2019), 255–62 <https://doi.org/10.1177/1365712718807226>
- Meurisch, Christian, and Max Mühlhäuser, 'Data Protection in AI Services', *ACM Computing Surveys*, 2021, 1–38 <https://doi.org/10.1145/3440754>
- Mutiro, Blessing, 'The Future of EU Data Protection Law for Collectives: A Reverse Brussels Effect', *European Data Protection Law Review*, 9.4 (2023), 409–17 <https://doi.org/10.21552/edpl/2023/4/7>
- Natarajan Ramani, Gaurav, 'One Size Doesn't Fit All: The General Data Protection Regulation Vis-à-Vis International Commercial Arbitration', *Arbitration International*, 37.3 (2021), 613–30 <https://doi.org/10.1093/arbint/aiaa032>
- Neta, Yulia, Agsel Awanisa, and Melisa Melisa, 'The Urgency of Independent Supervisory Authority Towards Indonesia's Personal Data Protection', *Constitutionale*, 3.1 (2022), 21–42 <https://doi.org/10.25041/constitutionale.v3i1.2535>
- Nugroho, Andriyanto Adhi, Atik Winanti, and Surahmad Surahmad, 'Personal Data Protection in Indonesia: Legal Perspective', *International Journal of Multicultural and Multireligious Understanding*, 7.7 (2020), 183 <https://doi.org/10.18415/ijmmu.v7i7.1773>
- Padden, Michaela, and Andreas Öjehag-Pettersson, 'Protected How? Problem Representations of Risk in the General Data Protection Regulation (GDPR)', *Critical Policy Studies*, 15.4 (2021), 486–503 <https://doi.org/10.1080/19460171.2021.1927776>
- Partogi Sihombing, Januardo Sulung, Retno Saraswati, Yunanto Yunanto, and Arida Turymshayeva, 'The Regulation of Legal Protection for Poor Communities Toward Justice in Indonesia and the Netherlands', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 331–53 <https://doi.org/10.53955/jhcls.v4i2.274>

- Perez, Nahshon, 'Posner's "Law and Economics" and Politics: Bringing State-Skepticism Back In', *Journal of Social Philosophy*, 49.4 (2018), 589–609 <https://doi.org/10.1111/josp.12263>
- Phillips, Mark, 'International Data-Sharing Norms: From the OECD to the General Data Protection Regulation (GDPR)', *Human Genetics*, 137.8 (2018), 575–82 <https://doi.org/10.1007/s00439-018-1919-7>
- Pikulík, Tomáš, and Peter Štarchoň, 'Public Registers with Personal Data under Scrutiny of DPA Regulators', *Procedia Computer Science*, 170.2019 (2020), 1170–79 <https://doi.org/10.1016/j.procs.2020.03.033>
- Posner, Richard A, 'Law and Economics in Common-Law, Civil-Law, and Developing Nations', *Ratio Juris*, 17.1 (2004), 66–79 <https://doi.org/10.4013/rechtd.2009.12.04>
- Prabowo, Sidik, Maman Abdurrohman, Hilal Hudan Nuha, and Sarwono Sutikno, 'A Data Protection Design for Online Exam Proctoring in Compliance with the Indonesian Personal Data Protection Law', in *Lecture Notes in Networks and Systems* (Springer Science and Business Media Deutschland GmbH, 2024), 824 LNNS, 523–35 https://doi.org/10.1007/978-3-031-47715-7_36
- Prastyanti, Rina Arum, and Ridhima Sharma, 'Establishing Consumer Trust Through Data Protection Law as a Competitive Advantage in Indonesia and India', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 354–90 <https://doi.org/10.53955/jhcls.v4i2.200>
- Puljak, Livia, Anamarija Mladinić, and Zvonimir Koporc, 'Workload and Procedures Used by European Data Protection Authorities Related to Personal Data Protection: A Cross-Sectional Study', *BMC Research Notes*, 16.1 (2023), 1–7 <https://doi.org/10.1186/s13104-023-06308-z>
- Purtova, Nadezhda, 'The Law of Everything. Broad Concept of Personal Data and Future of EU Data Protection Law', *Law, Innovation and Technology*, 10.1 (2018), 40–81 <https://doi.org/10.1080/17579961.2018.1452176>
- Quelle, Claudia, 'Enhancing Compliance under the General Data Protection Regulation: The Risky Upshot of the Accountability- and Risk-Based Approach', *European Journal of Risk Regulation*, 9.3 (2018), 502–26 <https://doi.org/10.1017/err.2018.47>
- Raab, Charles, and Ivan Szekely, 'Data Protection Authorities and Information Technology', *Computer Law and Security Review*, 33.4 (2017), 421–33 <https://doi.org/10.1016/j.clsr.2017.05.002>
- Reksoprodjo, Aqil Athalla, Muhammad Dachyar, and Novandra Rhezza Pratama, 'A Decision-Making Model for Selecting Personal Data Protection Frameworks for Companies in Indonesia', *Journal of System and Management Sciences*, 14.2 (2024), 156–71 <https://doi.org/10.33168/JSMS.2024.0210>
- Rubinstein, Ira S., and Nathaniel Good, 'The Trouble with Article 25 (and How to Fix It): The Future of Data Protection by Design and Default', *International Data Privacy Law*, 10.1 (2020), 37–56 <https://doi.org/10.1093/idpl/ipz019>
- Rukmono, Bambang Sugeng, Pujiyono Suwadi, and Muhammad Saiful Islam, 'The Effectiveness of Recovering Losses on State Assets Policy in Dismissing Handling of Corruption', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 299–330 <https://doi.org/10.53955/jhcls.v4i2.259>
- Ruohonen, Jukka, and Kalle Hjerpe, 'The GDPR Enforcement Fines at Glance', *Information Systems*, 106 (2022), 101876 <https://doi.org/10.1016/j.is.2021.101876>
- Rupp, Valentin, and Max von Grafenstein, 'Clarifying "Personal Data" and the Role of

- Anonymisation in Data Protection Law Including and Excluding Data from the Scope of the GDPR (More Clearly) through Refining the Concept of Data Protection', *Computer Law and Security Review*, 52.1 (2024), 105932 <https://doi.org/10.1016/j.clsr.2023.105932>
- Safira Widya Attidhira, and Yana Sukma Permana, 'Review Of Personal Data Protection Legal Regulations In Indonesia', *Awang Long Law Review*, 5.1 (2022), 280–94 <https://doi.org/10.56301/awl.v5i1.562>
- Setiawan, Heru, I Gusti Ayu Ketut Rachmi Handayani, M. Guntur Hamzah, and Hilaire Tegnan, 'Digitalization of Legal Transformation on Judicial Review in the Constitutional Court', *Journal of Human Rights, Culture and Legal System*, 4.2 (2024), 263–98 <https://doi.org/10.53955/jhcls.v4i2.263>
- Shahrullah, Rina Shahriyani, Jihyun Park, and Irwansyah Irwansyah, 'Examining Personal Data Protection Law of Indonesia and South Korea: The Privacy Rights Fulfilment', *Hasanuddin Law Review*, 10.1 (2024), 1–20 <https://doi.org/10.20956/halrev.v10i1.5016>
- Sholikhah, Vina Himmatus, Noering Ratu Fatheha Fauziah Sejati, and Diyanah Shabitah, 'Personal Data Protection Authority: Comparative Study between Indonesia, United Kingdom, and Malaysia', *Indonesian Scholars Scientific Summit Taiwan Proceeding*, 3 (2021), 54–63 <https://doi.org/10.52162/3.2021112>
- Simani, Silvio, Saverio Farsoni, and Paolo Castaldi, 'Supervisory Control and Data Acquisition for Fault Diagnosis of Wind Turbines via Deep Transfer Learning', *Energies*, 16.9 (2023), 3644 <https://doi.org/10.3390/en16093644>
- Sørum, Hanne, Ragnhild Eg, and Wanda Presthus, 'A Gender Perspective on GDPR and Information Privacy', *Procedia Computer Science*, 196.2021 (2021), 175–82 <https://doi.org/10.1016/j.procs.2021.12.003>
- Stepenko, Valery, Lyudmila Dreval, Sergei Chernov, and Viktor Shestak, 'EU Personal Data Protection Standards and Regulatory Framework', *Journal of Applied Security Research*, 17.2 (2022), 190–207 <https://doi.org/10.1080/19361610.2020.1868928>
- Sudarwanto, Al Sentot, and Dona Budi Budi Kharisma, 'Comparative Study of Personal Data Protection Regulations in Indonesia, Hong Kong and Malaysia', *Journal of Financial Crime*, 29.4 (2022), 1443–57 <https://doi.org/10.1108/JFC-09-2021-0193>
- Supriyadi, Daniar, 'The Regulation of Personal and Non-Personal Data in the Context of Big Data', *Journal of Human Rights, Culture and Legal System*, 3.1 (2023), 33–69 <https://doi.org/10.53955/jhcls.v3i1.71>
- Truong, Nguyen Binh, Kai Sun, Gyu Myoung Lee, and Yike Guo, 'GDPR-Compliant Personal Data Management: A Blockchain-Based Solution', *IEEE Transactions on Information Forensics and Security*, 15 (2020), 1746–61 <https://doi.org/10.1109/TIFS.2019.2948287>
- Tsekoura, Talita Maria, and Fereniki Panagopoulou, 'GDPR: A Critical Review of the Practical, Ethical and Constitutional Aspects One Year after It Entered into Force', *International Journal of Human Rights and Constitutional Studies*, 7.1 (2020), 35 <https://doi.org/10.1504/IJHRCS.2020.106548>
- Uddin, Mohammad Rajib, Shahriar Akter, and Wai Jin Thomas Lee, 'Developing a Data Breach Protection Capability Framework in Retailing', *International Journal of Production Economics*, 271.October 2023 (2024), 109202 <https://doi.org/10.1016/j.ijpe.2024.109202>
- Vanberg, Aysem Diker, 'Informational Privacy Post GDPR—End of the Road or the Start of a Long Journey?', *International Journal of Human Rights*, 0.0 (2020), 52–78 <https://doi.org/10.1080/13642987.2020.1789109>
- Vigna, Francesco, 'Co-Regulation Approach for Governing Big Data: Thoughts on Data Protection

- Law', in *ACM International Conference Proceeding Series*, 2022, pp. 59–63
<https://doi.org/10.1145/3560107.3560117>
- Wagner, Julian, 'The Transfer of Personal Data to Third Countries under the GDPR: When Does a Recipient Country Provide an Adequate Level of Protection?', *International Data Privacy Law*, 8.4 (2018), 318–37 <https://doi.org/10.1093/idpl/ipy008>
- Wardiono, Kelik, and Wardah Yuspin, 'The Sharia Microfinance and the Counter-Hegemonic Movement: Examining the Legal Norms Regulating Aspects of Institutional and Business Activities in Surakarta', *Humanities and Social Sciences Reviews*, 7.3 (2019), 45–51
<https://doi.org/10.18510/hssr.2019.737>
- Wibowo, Ari, Widya Alawiyah, and Azriadi, 'The Importance of Personal Data Protection in Indonesia's Economic Development', *Cogent Social Sciences*, 10.1 (2024)
<https://doi.org/10.1080/23311886.2024.2306751>
- Widiatedja, I. Gusti Ngurah Parikesit, and Neha Mishra, 'Establishing an Independent Data Protection Authority in Indonesia: A Future-Forward Perspective', *International Review of Law, Computers & Technology*, 37.3 (2023), 252–73
<https://doi.org/10.1080/13600869.2022.2155793>
- Willis, Brooke, Tunmin Jai, and Mitzi Lauderdale, 'Trust and Commitment: Effect of Applying Consumer Data Rights on U.S. Consumers' Attitudes toward Online Retailers in Big Data Era', *Journal of Consumer Behaviour*, 20.6 (2021), 1575–90 <https://doi.org/10.1002/cb.1968>
- Wodi, Alexander, 'The EU General Data Protection Regulation (GDPR): Five Years After and the Future of Data Privacy Protection in Review', *SSRN Electronic Journal*, 2023
<https://doi.org/10.2139/ssrn.4601142>
- Zhu, FangBing, and Zongyu Song, 'Systematic Regulation of Personal Information Rights in the Era of Big Data', *SAGE Open*, 12.1 (2022), 1–11 <https://doi.org/10.1177/21582440211067529>
- Zhuo, Ran, Bradley Huffaker, Kc Claffy, and Shane Greenstein, 'The Impact of the General Data Protection Regulation on Internet Interconnection', *Telecommunications Policy*, 45.2 (2021)
<https://doi.org/10.1016/j.telpol.2020.102083>
- Zinovieva, Vera, Mikhail Shchelokov, and Evgeny Litvinovsky, 'Legal Issues of Protection of Personal Data: Cases of Transport Data Leaks', *Transportation Research Procedia*, 68 (2023), 461–67 <https://doi.org/10.1016/j.trpro.2023.02.062>
- Zuhroh, Nur Fatimatuz, and Tony Dwi Susanto, 'Analysis of the Driving Factors for the Implementation of Personal Data Protection in Local Governments', in *AIP Conference Proceedings* (American Institute of Physics Inc., 2023), MMCDLXXXII, 2021
<https://doi.org/10.1063/5.0134013>