



Urgency of Electronic Wallet Regulation in Indonesia

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ARTICLE INFO	ABSTRACT
<p>Keywords : Electronic Payments; Problems; Regulations.</p> <p>How To Cite : Tan, K., & Disemadi, H. (2021). Urgency of Electronic Wallet Regulation in Indonesia. <i>Nagari Law Review</i>, 5(1), 1-14. doi:10.25077/nalrev.v.5.i.1.p.1-14.2021</p>	<p>The payment system in Indonesia has undergone significant changes to date. Starting from the barter system to the existence of an electronic payment system. This change is caused by the development of technology, which has an impact on changing people's lifestyles. The payment system has been known to the public since 2014 when Bank Indonesia issued the National Non-Cash Movement (GNNT) policy. This policy aims to create a cashless society eco-system while at the same time introducing the advantages of electronic payments to the public. Electronic payments are considered safer, more efficient, and easier to track. However, electronic payments are also inseparable from their shortcomings. The electronic payment system, which is relatively new in Indonesia, will face several problems, especially with the legal system. Until now, there has been no law specifically regulating electronic payment systems, specifically E-wallet. This legal vacuum will cause problems both in terms of security and legal protection for users. This study aims to find out the problems that will arise from the E-wallet and provide solutions to the problems raised from a legal perspective. The research method used is normative juridical, using a conceptual approach and a statutory approach to review E-wallets in Indonesia. The results of this study indicate that several problems arise from electronic payments. Therefore, regulations are needed to protect user security, oversee the smooth implementation of E-wallet and maintain Indonesia's economic stability.</p> <p style="text-align: right;">©2021 NALREV. Faculty of Law Universitas Andalas</p>

1. Introduction

The development of technology and information led to the realization of the digital era at this time. This development has resulted in people having to be smart about utilizing existing technology to be able to communicate effectively and efficiently with each other. These technological developments also contribute to establishing new jobs, one of which is in the field of financial technology (hereinafter abbreviated fintech) that influences the emergence of new companies in the digital financial sector. Some examples of fintech products are E-wallets, E-money, and others. These fintech products make it easier for people to make transactions.¹

E-money is a server or chip-based payment instrument that contains a nominal amount of money stored electronically. The general function of E-money is to make toll road payments, ticket purchase transactions, and others. An E-wallet is a payment instrument that is connected to the internet that uses an application in the payment process. The function of the E-wallet, in general, is to do online shopping,

¹ Rifqy Tazkiyyaturrohman, "Eksistensi Uang Elektronik Sebagai Alat Transaksi Keuangan Modern," *Muslim Heritage* 3, no. 1 (2018): 21–39, <https://doi.org/10.21154/muslimheritage.v3i1.1240>.

shop at retail outlets in collaboration with Payment System Service Providers, or in Indonesia, known as *Penyelenggara Jasa Sistem Pembayaran* (hereinafter abbreviated as PJSP), pay electricity bills, and so on.² E-money and E-wallets are often mistaken in Indonesian society. There is a clear distinction between E-money and E-wallet in their application in Indonesia. Some of these differences, namely: E-wallet can top up balances through several banks, while E-money can only be done at the bank that issued the E-money; E-wallet requires a piece of clear and complete information from the user, while E-money does not need to complete the registration information; and E-wallet has a larger balance limit than E-money.³ Based on the differences between the two fintech products, it can be seen that the E-wallet has advantages in its use in Indonesia.

An E-wallet is an alternative payment transaction method that allows users registered in the system to make transactions online safely. The transactions referred to in the use of an E-wallet can not only be used to make payments, but can also function in making transfers and receiving money by registering an email address or phone number on a smartphone. In general, an E-wallet has the same function as a conventional wallet, but the main difference is that an E-wallet stores money in digital form. An E-wallet is a method of storing money and transactions that is commonly used in Indonesia because of its practicality.⁴ Based on the results of a survey conducted by Neurosensum Indonesia, e-wallet users in Indonesia reached 44%.⁵ According to Bank Indonesia records, during the pandemic, the use of E-wallets in Indonesia increased by 24.42% from the previous year.⁶

Indonesia's financial activities have changed since the introduction of the E-wallet as a server-based payment tool. The benefit provided by the increasing use of E-wallets is to reduce the circulation of cash in society, thus creating a cashless society. In general, an e-wallet is a server-based software and requires an internet connection to access it.⁷ Some of the E-wallet software that is often used in Indonesia, based on the results of a survey conducted by Snapcart, are ShopeePay, Go-Pay, Ovo, Dana, and LinkAja.⁸ Electronic wallets, which have been widely used by Indonesian people, also attracted the attention of the government several years ago.

Bank Indonesia, as the central bank of Indonesia, to increase non-cash transactions in Indonesia, issued the National Non-Cash Movement program known as Gerakan Nasional Non Tunai (hereinafter abbreviated as GNNT) on August 14, 2014, which aspires to create a cashless society. Some of the policies implemented through the GNNT program are the establishment of non-cash areas in the campus environment, non-cash payments for government financial services, and the distribution of government social assistance.⁹ The legal basis for regulating the E-wallet are "Peraturan Bank Indonesia Nomor 14/40/PBI/2016 tentang Penyelenggaraan Pemrosesan Transaksi Pembayaran" (hereinafter abbreviated as PBI Payment Transaction Processing Implementation) and "Peraturan Bank Indonesia

² Kriswangsa Bagus Kusuma Yudha, "Jangan Salah! Ini Perbedaan E-Money Dan E-Wallet Dalam Transaksi," *Finansialku.com*, 2019, <https://www.finansialku.com/perbedaan-e-money-dan-e-wallet/>.

³ Adminflick, "Awat Salah Kaprah, Ini 4 Perbedaan E-Wallet Dan E-Money," *Flick*, 2021, <http://flick.id/news/tag/perbedaan-e-wallet-dan-e-money/>.

⁴ Timotius Rudyanta, "Fenomena Penggunaan E-Wallet Di Kalangan Pengusaha Warung Makan Di Perkantoran Jakarta," *Jurnal Pewarta Indonesia* 2, no. 1 (2020): 41–48.

⁵ Imantoko Kurniadi, "Riset: Tingkat Adopsi E-Wallet Dalam Negeri Tumbuh Pesat," *Selular.Id*, 2021, <https://selular.id/2021/03/riset-tingkat-adopsi-e-wallet-dalam-negeri-tumbuh-pesat/>.

⁶ Feby Dwi Sutianto, "Peta Persaingan Dompot Digital Di Indonesia Setelah Masuknya Hary Tanoe Ke Arena," *Kumparan.com*, 2021, <https://kumparan.com/kumparanbisnis/peta-persaingan-dompot-digital-di-indonesia-setelah-masuknya-hary-tanoe-ke-arena-1vspT6lMeLh/full>.

⁷ Nonika Inggiharti, "Pengaruh Electronic Wallet Terhadap Kegiatan Keuangan Indonesia (Perbandingan Aplikasi Electronic Wallet Milik Perusahaan Financial Technology Terhadap Aplikasi Electronic Wallet Milik BUMN)," *University Of Bengkulu Law Journal* 5, no. 1 (2020): 74–88, <https://doi.org/10.33369/ubelaj.5.1.74-88>.

⁸ Eko Sutriyanto, "Survei Snapcart : ShopeePay Kuasai 38 Persen Pasar Transaksi e-Wallet Di Indonesia," *Tribunnews.com*, 2021, <https://www.tribunnews.com/techno/2021/03/30/survei-snapcart-shopeepay-kuasai-38-persen-pasar-transaksi-e-wallet-di-indonesia>.

⁹ Sutarmin and Adi Susanto, "Potensi Pengembangan Transaksi Non Tunai Di Indonesia," *Sustainable Competitive Advantage-7 (SCA-7) Feb UNSOED*, 2017, 292–302, http://jp.feb.unsoed.ac.id/index.php/sca-1/article/viewFile/1025/pdf_198.

Nomor 20/6/PBI.2018 tentang Uang Elektronik" (hereinafter abbreviated as PBI Electronic Money). One of the regulations regarding E-wallets is that non-bank electronic wallet operators must obtain permission to issue electronic money.¹⁰

The generalized usage of E-wallets will cause problems if there is no strict regulation to regulate them and they will be vulnerable to information technology crimes, better known as cybercrime. One example of a criminal case that has occurred is the breach of a digital wallet balance with a decent nominal amount last year.¹¹ The conceded will certainly result in a decrease in the level of trust in PJSP. The declining phenomena that are occurring will certainly have a direct impact on the success of the GNNT program being held. The increase in the usage of E-wallets in Indonesia is directly proportional to the increase in E-wallet crime as well, so legislation is needed that regulates in depth the problems that may occur in this E-wallet. This is due to one of law enforcement's general functions is to give fear of not committing acts that have been banned and a deterrent to perpetrators.¹²

Lawrence Freidman argues that the law has a function, namely a control system, dispute resolution, social engineering, social maintenance, and supervision of power holders.¹³ These functions have a causal relationship with each other. The function of the law has an impact on social life, so it is necessary to regulate the problems that concern the community. The problem faced by Indonesia as a developing country is that the regulations governing the use of this technology are no longer relevant to users, so new and stricter legislation is needed for its implementation, especially the regulations regarding electronic wallets.

One of the studies that has been carried out on the theme of E-wallet is a study entitled "Perlindungan Hukum Pengguna *E-wallet* Dana Ditinjau Dari Undang-Undang Perlindungan Konsumen" which was researched by Fiona Pappano Naomi and I Made Dedy Priyanto. The research was conducted by conducting a case study on the losses of Dana E-wallet users due to non-compliance with the services received from the perspective of consumer protection.¹⁴ Other research has been carried out by Lusi Septiyati and Siti Nurbaiti, who studied legal protection for users of the Go-Pay payment system;¹⁵ and by Muchammad Fahryan Putra and Lucky Dafira Nugroho, who studied PJSP's responsibility for compensating users who lost their balance in an E-wallet, as well as the legal action that E-wallet users can take to get their money back.¹⁶

E-wallets have a positive impact on Indonesia in their implementation, but they will also be a critical issue if specific regulations are not made to address the existing problems. Specific E-wallet regulations are required to prevent a legal vacuum and to offer legal protection and clarity to E-wallet users in Indonesia. Based on the description and numerous prior studies, this study focuses on examining the importance of specific regulations for E-wallets in Indonesia. The primary concerns raised in this study are the problems encountered while using E-wallets in Indonesia, as well as the function of specific regulations for E-wallets in Indonesia.

¹⁰ Elsa Debora Manurung, Lastuti Abubakar, and Tri Handayani, "Kepastian Hukum Dalam Penyelenggaraan Layanan Dompot Elektronik Dalam Sistem Pembayaran Dikaitkan Dengan Prinsip Lancar, Aman, Efisien, Dan Andal Berdasarkan PBI Nomor 20/6/PBI/2018 Tentang Uang Elektronik," *Jurnal Jurisprudence* 10, no. 1 (2020): 33-51, <https://doi.org/10.23917/jurisprudence.v10i1.10226>.

¹¹ Lidya Julita Sembiring, "Bisa Dibobol, Yuk... Hati-Hati Gunakan Dompot Digital," CNBC Indonesia, 2020, <https://www.cnbcindonesia.com/tech/20201016145935-37-194912/bisa-dibobol-yuk-hati-hati-gunakan-dompot-digital>.

¹² Putu Sekarwangi Saraswati, "Fungsi Pidana Dalam Menanggulangi Kejahatan," *Jurnal Advokasi* 5, no. 2 (2015): 139-54.

¹³ Didiek R. Mawardi, "Fungsi Hukum Dalam Kehidupan Masyarakat," *Masalah-Masalah Hukum* 44, no. 3 (2015): 275-83.

¹⁴ Fiona Pappano Naomi and I Made Dedy Priyanto, "Perlindungan Hukum Pengguna E-Wallet Dana Ditinjau Dari Undang-Undang Perlindungan Konsumen," *Jurnal Kertha Semaya* 9, no. 1 (2020): 24-33.

¹⁵ Lusi Septiyati and Siti Nurbaiti, "Perlindungan Hukum Terhadap Konsumen Pengguna Transaksi Dengan Sistem Pembayaran Go-Pay," *Jurnal Hukum Adigama* 1, no. 1 (2019): 1-25.

¹⁶ Septiyati and Nurbaiti.

2. Method

Research is an activity that examines data and facts acquired in order to generate a conclusion and a solution to a problem.¹⁷ Clear techniques are required for research activity.¹⁸ This study was carried out using normative juridical research methodologies by the researcher. The normative juridical research technique involves doing research by analyzing current laws and regulations that are relevant to the study topic.¹⁹ The researchers in this study took a conceptual approach. Conceptual research is a research method that involves assessing the legal materials that have been gathered and then providing solutions to the key issues raised in the study.²⁰

Secondary data is information that is utilized in normative research. Secondary data is information derived from primary, secondary, and tertiary legal documents.²¹ *Pancasila, Undang-Undang Dasar Negara Republik Indonesia Tahun 1945* or the 1945 Constitution of the Republic of Indonesia, PBI for the Implementation of Payment Transaction Processing, and PBI for Electronic Money were the major legal materials used by the researcher. The researcher's secondary legal resources include books, journals, expert views, research findings, and the internet, all of which are directly relevant to the problems discussed. Dictionaries that are beneficial in explaining primary and secondary legal documents are utilized as tertiary legal materials. The secondary data utilized in the study was gathered through the use of library research techniques. The library research technique is a method that is carried out by analysing the data that has been obtained relevant to the topic that has been raised.²² The collected data is then evaluated utilizing qualitative descriptive data analysis methods. The qualitative descriptive method is defined as analyzing the information received from the data gathered and then describing the information in depth and completely.²³

3. Main Heading of The Analysis or Results

3.1. Problems Encountered within Indonesian E-Wallet Activities

Electronic wallets have been a popular payment method among Indonesians due to their ease of use in completing transactions. Because the existence of E-wallets removes barriers and makes transactions easier for E-wallet users, they tend to draw the attention of the general public to utilizing them.²⁴ The increased use of E-wallets has a beneficial influence on the lives of Indonesians, nevertheless the use of the E-wallet will cause issues with its use. If these issues are not solved, the degree of public trust in the use of E-wallets in Indonesia will decline. One of the issues that users of E-wallets confront is the security of personal data, often known as the protection of privacy rights.

Personal data according to "*Pasal 1 Peraturan Pemerintah Nomor 71 Tahun 2019 tentang Penyelenggaraan Sistem dan Transaksi Elektronik* (Article 1 of Government Regulation Number 71 of 2019 concerning the Implementation of Electronic Systems and Transactions)" has the definition that "*Data pribadi adalah setiap data tentang seseorang baik yang teridentifikasi dan/atau dapat diidentifikasi secara tersendiri atau*

¹⁷ Syafruddin Jamal, "Merumuskan Tujuan Dan Manfaat Penelitian," *Al-Munir Jurnal Ilmiah Dakwah Dan Komunikasi* 3, no. 5 (2012): 147-57.

¹⁸ Pupu Saeful Rahmat, "Penelitian Kualitatif," *Equilibrium* 5, no. 9 (2009): 1-8, <https://doi.org/10.31227/osf.io/wtnzc>.

¹⁹ Kornelius Benuf and Muhamad Azhar, "Metodologi Penelitian Hukum Sebagai Instrumen Mengurai Permasalahan Hukum Kontemporer," *Jurnal Gema Keadilan* 7, no. 1 (2020): 20-33.

²⁰ Bachtiar, *Metode Penelitian Hukum*, ed. Oksidelfa Yanto (Tangerang: UNPAM PRESS, 2018).

²¹ Peter Mahmud Marzuki, *Penelitian Hukum* (Jakarta: Kencana Prenada Media Group, 2005).

²² Soerjono Soekanto and Sri Mamudjo, *Penelitian Hukum Normatif Suatu Tinjauan Singkat* (Jakarta: PT Raja Grafindo Persada, 2001).

²³ Aan Prabowo and Heriyanto, "Analisis Pemanfaatan Buku Elektronik (E-Book) Oleh Pemustaka Di Perpustakaan SMA Negeri 1 Semarang," *Jurnal Ilmu Perpustakaan* 2, no. 2 (2013): 1-9, <http://ejournal-s1.undip.ac.id/index.php/jip%5CnANALISIS>.

²⁴ Dwi Rorin Mauludin Insana and Ria Susanti Johan, "Analisis Pengaruh Penggunaan Uang Elektronik Terhadap Perilaku Konsumtif Mahasiswa Pendidikan Ekonomi Universitas Indraprasta PGRI," *JABE (Journal of Applied Business and Economic)* 7, no. 2 (2020): 209-24, <https://doi.org/10.30998/jabe.v7i2.7822>.

dikombinasi dengan informasi lainnya baik secara langsung maupun tidak langsung melalui sistem elektronik atau non-elektronik". Indonesia regulation defines personal data as any data about a person either identified and/or capable of being identified separately or in combination with other information, either directly or indirectly through electronic or non-electronic systems. In brief, personal data is any information relating to a person, including both basic information such as complete name, gender, and place of birth, as well as specialized information such as health information, biometric data, financial information, and so on. Users must register in order to conduct transactions using the E-wallet, which contains personal information. The emergence of the Covid-19 pandemic has resulted in a rise in E-wallet users in Indonesia to meet consumers' purchase necessities. An E-wallet is a type of payment system that is used to support physical distance programs aimed at reducing the Covid-19 pandemic.²⁵

The increased usage of E-wallets in Indonesia during the Covid-19 pandemic will lead to an increase in cybercrime. The crime mentioned by the researcher is one involving internet security. Since the Covid-19 outbreak, there has been an increase in the crime of breaking into E-wallet accounts in Indonesia. BRI Life, Tokopedia, Bukalapak, Shopback, and Redmart are among the sites that have been attacked by hackers as a result of the Covid-19 pandemic. One situation that has alarmed the public is the BRI Life case, in which there are 463,519 document files weighing up to 252 GB and a database file holding 2 million BRI Life users weighing 410MB, which includes information on account mutations, proof of insurance deposit transfer, ID cards, and screenshots of customer WA conversations with BRI Life employees, insurance registration documents, Family Cards, and several self-declaration and commitment forms, as well as a full life insurance policy.²⁶ The next case involves the break-in of an online motorcycle taxi application account, which resulted in a loss of Rp. 2 billion rupiahs and was accomplished using deepfakes, phishing, and the approach of requesting a one-time password (OTP). According to the National Cyber and Crypto Agency, the number of cyber-attacks has more than fivefold grown from 29.63 million in the first half of 2019 to 149.78 million in the first half of 2020.²⁷ The break-in will definitely threaten users because there is both generic and particular user information.²⁸ Impersonation and SIM swaps are two methods used by hackers to get access to customers' E-wallet accounts. Other methods include Man-in-the-Browser and phishing, as well as malware assaults.²⁹

These cybercrimes indicate a lack of oversight and legislation regarding user security, resulting in E-wallet account break-ins and losses for electronic wallet users. The breach resulted in the exploitation, expropriation, and sale of a person's personal data, which is a kind of cybercrime and a violation of human rights. Personal data is recognized as a component of human rights in Article 12 of the Universal Declaration of Human Rights (hereinafter abbreviated to UDHR), which requires participating countries to protect and respect their people' personal data rights.³⁰ As a member of the United Nations, Indonesia has ratified the Universal Declaration of Human Rights as confirmation of its acceptance of its citizens' human rights.

²⁵ Dewi Mahrani Rangkuty, "Apakah Penggunaan E-Wallet Masa Pandemi Covid-19 Semakin Meningkat Di Indonesia?," *Prosiding Konferensi Nasional Universitas Nahdlatul Ulama Indonesia* 1, no. 1 (2021): 251–60.

²⁶ CNN Indonesia, "Data Warga RI Bocor: BRI Life, BPJS Hingga Pasien Covid-19," *CNNIndonesia.com*, 2021, <https://www.cnnindonesia.com/teknologi/20210729125539-185-673757/data-warga-ri-bocor-bri-life-bpjs-hingga-pasien-covid-19/1>.

²⁷ Fahmi Ahmad Burhan, "GoPay, OVO Hingga Bank Hadapi Risiko Sindikat Penipuan Dan Deepfake," *Katadata.co.id*, 2021, <https://katadata.co.id/desyetyowati/digital/605c7462c9447/gopay-ovo-hingga-bank-hadapi-risiko-sindikat-penipuan-dan-deepfake>.

²⁸ Deanne Destriani Firmansyah Putri and Muhammad Helmi Fahrozi, "Upaya Pencegahan Kebocoran Data Konsumen Melalui Pengesahan Ruu Perlindungan Data Pribadi (Studi Kasus E-Commerce Bhinneka.Com) The Prevention Of Consumer Data Leakage Through Legalization Of The Personal Data Protection Bill," *2nd National Conference on Law Studies: Legal Development Towards A Digital Society Era*, 2020, 255–73.

²⁹ Andi Nugroho, "Tiga Serangan Yang Dipakai Untuk Bobol Dompot Digital," *Cyberthreat.id*, 2020, <https://cyberthreat.id/read/4643/Tiga-Serangan-yang-Dipakai-untuk-Bobol-Dompot-Digital>.

³⁰ Sahat Maruli Tua Situmeang, "Penyalahgunaan Data Pribadi Sebagai Bentuk Kejahatan Sempurna Dalam Perspektif Hukum Siber," *SASI* 27, no. 1 (2021): 38–52, <https://doi.org/10.47268/sasi.v27i1.394>.

The issue is that, while there is some acknowledgment of personal data as part of human rights, cases involving the takeover of personal data via the E-wallet do not deteriorate. Breaking into personal data can lead to future issues such as the abuse of personal data to perform transactions, the black market sale of personal data, data profiling, marketing, monitoring, fraud, money laundering, and so on.³¹ Given the amount of crimes that can only be performed by breaking into personal data, a widespread occurrence of personal data breaches via E-wallet would result in an increase in Indonesia's crime rate, leading in a reduction in Indonesia's security level in the eyes of the world.

The second issue that E-wallet customers face is the issue of balances. Due to technological issues, a number of cases involving the E-wallet in Indonesia have resulted in impacted balances and billing failure.³² The incidents that have occurred are not the consequence of human negligence, but of system failures that have resulted in losses for E-wallet users. However, many problems remain unresolved owing to a lack of awareness and knowledge of consumer protection included in Indonesian laws and regulations, particularly "*Undang-Undang Nomor 8 Tahun 1999 tentang Perlindungan Konsumen* (Law Number 8 of 1999 Concerning Consumer Protection)" (hereinafter abbreviated as the Consumer Protection Act). Given the lack of consumer protection information and awareness in Indonesia, such incidents occur often but are not reported to the appropriate authorities.

Technology advancement in this circumstance should be supported by the renewal of rules and regulations, as well as the ability to keep up with the times. Indonesian laws and regulations should be designed to enable and adapt to the advancement of information technology. Legal protection offered to overcome technological flaws must involve government action in the form of an applicable law. This legal ruling aims to improve the security and convenience of E-wallet customers.³³ However, the regulations regulating E-wallets in particular are not regulated in Indonesian laws and regulations. Due to the lack of these particular regulations, the principles of legal certainty and legal protection are not achieved in this E-wallet problem.

Problems with E-wallet transactions should be handled in accordance with "*Undang-Undang Nomor 11 Tahun 2008 tentang Informasi dan Transaksi Elektronik* (Law Number 11 of 2008 concerning Information and Electronic Transactions)" (hereinafter abbreviated as ITE Law). However, in its execution, the ITE Law is a *lex specialis* of the Indonesian Criminal Code since individuals frequently abuse the ITE Law's dual interpretation clauses as a legal foundation for reporting on the activities of persons they do not like. Despite the fact that the ITE Law, essentially the rules and regulations regulating electronic information and transactions in Indonesia, explicitly says that the primary goal of ratifying the ITE Law is to offer legal protection and certainty for electronic transactions.³⁴

The primary challenges that Indonesia has in transitioning to a cashless society are infrastructural issues and user security. In terms of offering E-wallet services in Indonesia, the government and PJSP are primarily concerned with these two issues. Infrastructure issues that frequently arise while using E-wallets are linked to system restrictions, network bandwidth, and transaction failures. The major issue that must be addressed with E-wallets is the security of E-wallet users. In Indonesia, breaking into an electronic wallet account would result in a domino effect, which implies that additional connected criminal actions will occur. Criminal activities committed as a result of breaking into an E-wallet

³¹ Dararida Fandra Mahira, Emilda Yofita, and Lisa Nur Azizah, "Consumer Protection System (CPS): Sistem Perlindungan Data Pribadi Konsumen Melalui Collaboration Concept," *LEGISLATIF* 3, no. 2 (2020): 287-302.

³² Muhammad Taufik Hidayat, Qurrotul Aini, and Elvi Fetrina, "Penerimaan Pengguna E-Wallet Menggunakan UTAUT 2 (Studi Kasus) (User Acceptance of E-Wallet Using UTAUT 2 - A Case Study)," *Jurnal Nasional Teknik Elektro Dan Teknologi Informasi* 9, no. 3 (2020): 239-47, <https://doi.org/10.22146/.v9i3.227>.

³³ Septiyati and Nurbaiti, "Perlindungan Hukum Terhadap Konsumen Pengguna Transaksi Dengan Sistem Pembayaran Go-Pay."

³⁴ Ahmad Zuhad, "Catat! Ini 5 Masalah UU ITE Yang Wajib Segera Direvisi," *Kompas.tv*, 2021, <https://www.kompas.tv/article/147484/catat-ini-5-masalah-uu-ite-yang-wajib-segera-direvisi>.

account include account abuse, fraud, and so on. These things will surely cast a negative image on Indonesia in the eyes of the international world.

3.2. The Urgency of Specific Regulation on E-Wallets in Indonesia

Problems with the usage of E-wallets in Indonesia must be handled with specific regulations in order to reduce the occurrence of incidents that affect E-wallet users. Bank Indonesia, as Indonesia's central bank, has developed a strategy for the Indonesian payment system, namely “*Blueprint Sistem Pembayaran Indonesia 2025: Menavigasi Sistem Pembayaran Nasional di Era Digital* (Payment System 2025: Navigating the National Payment System in the Digital Era)” (hereinafter abbreviated as BSPI 2025) in 2019. The current rules and regulations in Indonesia that govern non-cash transactions are as follows: “*Peraturan Bank Indonesia Nomor 19/8/PBI/2019 tentang Gerbang Pembayaran Nasional* (National Payment Gateway) (Bank Indonesia Regulation Number 19/8/PBI/2019 concerning the National Payment Gateway)” (hereinafter abbreviated as PBI GPN); “*Peraturan Bank Indonesia No 22/23/PBI/2020 tentang Sistem Pembayaran* (Bank Indonesia Regulation No. 22/23/PBI/2020 concerning Payment Systems)” (hereinafter abbreviated as PBI Payment Systems); ‘Bank Indonesia Regulations for Electronic Money’. The aforementioned rules represent the government's attempts to promote changes in Indonesia's payment system in response to the times.³⁵

Indonesia does not yet have specific legislation and regulations governing E-wallets. As a result, related rules and regulations are utilized as the legal basis to handle the conflicts that occur. The Bank of Indonesia Electronic Money Regulation is one example of a comparable structure that serves as the legal foundation for concerns with E-wallets. This Bank Indonesia Electronic Money Regulation primarily governs electronic money licensing, approvals, requirements, procedures, policies, and other aspects. One example of user protection law is found in Article 43 of the Bank Indonesia Electronic Money Regulation, which compels PJSP to refund users in the case of a loss that was not caused by the user's negligence.³⁶ Although there exist arrangements that are similar to E-wallets, a legislative law that oversees E-wallets is still required since E-wallets and E-money are not the same thing.

BSPI 2025, which is the government's policy in responding to the digital revolution, has five visions: supporting the integration of the national digital economy and finance; supporting banking digitalization; guaranteeing interlinks between fintech and banks; ensuring a balance between innovation and consumer protection; integrity and stability as well as fair business competition; and ensuring national interests in the digital economy-finance between countries. The five BSPI Vision 2025 initiatives will be implemented into 5 initiatives, namely open banking; retail payments; financial market infrastructure; data; regulation, licensing, and supervision. BSPI 2025 is Bank Indonesia's real movement towards realizing the digital revolution in a healthy and prosperous payment system.³⁷

The government, whose develops laws and regulations governing the Indonesian payment system, should be commended by Indonesian residents for their vision and the mission of government policies aimed at creating a better Indonesia. However, there are still several issues that have prevented Indonesian E-wallet customers from receiving complete protection. According to the study, one of the things that has not received specific legislative protection is the protection of personal data. Personal data protection is a fundamental human right in this digital age. Portugal, the Philippines, Argentina, and other nations have recognized personal data protection as a human right. Personal data privacy is protected in the statutory of some of the nations listed above. The European Union is the country that has particular regulations in place to protect its citizens' personal data. The European Union has a

³⁵ Venti Eka Satya, “Pengaturan Sistem Pembayaran Digital Untuk Stabilitas Sistem Keuangan Indonesia,” *Kajian Singkat Terhadap Isu Aktual Dan Strategis* 13, no. 2 (2021): 19–24.

³⁶ Septiyati and Nurbaiti, “Perlindungan Hukum Terhadap Konsumen Pengguna Transaksi Dengan Sistem Pembayaran Go-Pay.”

³⁷ Bank Indonesia, *Blueprint Sistem Pembayaran Bank Indonesia 2025* (Jakarta: Bank Indonesia, 2019).

unique supranational policy in the shape of the EU Data Protection Directive, which EU member states agreed.³⁸

Personal data is recognized as a component of human rights in Indonesia. Several laws and regulations that govern personal data recognize it as a component of human rights, one of which being Article 26 of the ITE Law, which states: 1. Unless otherwise stipulated by laws and regulations, the use of any information through electronic media concerning a person's data must be carried out with the consent of the person concerned; 2. Any person whose rights are violated as referred to in paragraph (1) may file a lawsuit for losses incurred under this law; 3. Each Electronic System Operator is required to delete irrelevant electronic information and/or electronic documents under its control at the request of the person concerned based on a court order; 4. Every Electronic System Operator is required to provide a mechanism for deleting Electronic Information and/or Electronic Documents that are no longer relevant in accordance with the provisions of laws and regulations; and 5. Provisions regarding the procedure for deleting Electronic Information and/or Electronic Documents as referred to in paragraph (3) and paragraph (4) are regulated in a government regulation". However, Indonesia does not yet have a specific laws governing personal data protection. Personal data protection laws in Indonesia is yet sectoral. This implies that the regulation of personal data protection is governed by a number of laws and regulations.³⁹ Sectoral arrangements are deemed unproductive and inefficient because if a person's personal data is violated, victims will find it difficult to seek justice due to the numerous rules and regulations that may be used as references. The law should be capable of effectively and efficiently providing legal protection to the community. Because data is a significant asset for a person in this digital era, it is part of a person's human rights that should be safeguarded, Indonesia requires legislative provisions for the protection of personal data at the statutory level.

Indonesia already has a Personal Data Protection Bill (hereinafter referred to as the Personal Data Protection Bill) that has been ratified in the Program Legislasi Nasional Prioritas 2021 (2021 Priority National Legislation Program) (hereinafter referred to as Prolegnas).⁴⁰ The Personal Data Protection Bill is a legislation intended at protecting people' rights to personal data protection and promoting public awareness of the necessity of protecting personal data security, as well as recognizing and respecting personal data as part of human rights. The Personal Data Protection Bill follows the idea of extraterritoriality. This implies that this legislation continues to apply to offenders of personal data crimes, both those who conduct crimes within Indonesian territory and those who commit crimes outside of Indonesian territory.⁴¹

The Personal Data Protection Bill, which is a specialized regulation governing personal data protection, should be able to include specific regulations relating to the protection of E-wallet personal data. Because the rising usage of E-wallets in Indonesian society increases the possibility of unscrupulous persons to perpetrate crimes, additional provisions in the Personal Data Protection Bill are required. The particular rule in discussion is the one pertaining to the development of the digital payment security system via E-wallet. The Personal Data Protection Bill may include provisions that govern the PJSP's data security infrastructures in order to secure customer data. The security infrastructure provisions requires PJSP to perform frequent inspections and updates on the system to prevent hackers with malicious intent from obtaining the personal data of E-wallet users for personal economic purposes.

³⁸ Sinta Dewi, "Konsep Perlindungan Hukum Atas Privasi Dan Data Pribadi Dikaitkan Dengan Penggunaan Cloud Computing Di Indonesia," *Yustisia Jurnal Hukum* 5, no. 1 (2016): 22–30, <https://doi.org/10.20961/yustisia.v5i1.8712>.

³⁹ Siti Yuniarti, "Perlindungan Hukum Data Pribadi Di Indonesia," *Business Economic, Communication, and Social Sciences (BECOSS) Journal* 1, no. 1 (2019): 147–54, <https://doi.org/10.21512/becossjournal.v1i1.6030>.

⁴⁰ Wahyunanda Kusuma Pertiwi, "DPR Sahkan Prolegnas Prioritas 2021, Ada RUU Perlindungan Data Pribadi Halaman All - Kompas.Com," Kompas.com, 2021, <https://tekno.kompas.com/read/2021/03/23/17280067/dpr-sahkan-prolegnas-prioritas-2021-ada-ruu-perlindungan-data-pribadi?page=all>.

⁴¹ Erlina Maria Christin Sinaga and Mery Christian Putri, "Formulasi Legislasi Perlindungan Data Pribadi Dalam Revolusi Industri 4.0," *Jurnal RechtVinding* 9, no. 2 (2020): 237–56.

Furthermore, the Personal Data Protection Bill must include significant criminal consequences for anybody who steals personal data through illegal processes.

In Indonesia, a legislation that explicitly controls E-wallets in the form of a statutory is urgently needed. This is due to the fact that, in addition to the issue of breaching personal data on the E-wallet, there are additional technical issues caused by system failures in the PJSP. The E-wallet user may incur losses as a result of the PJSP system fault. A number of incidents have happened in which E-wallet customers of various E-wallet apps have suffered material and non-material losses. E-wallet user protection is critical since Indonesia is on the verge of embracing the digital era, and E-wallets will play an essential role and function in the future. The Consumer Protection Act provides legal protection to e-wallet users in general. According to the Consumer Protection Law, customers have the right to claim compensation if the products and/or services received do not meet the terms of the agreement. Standard clauses that have been defined in the E-wallet software are likewise protected.⁴² Based on these consumer protection provisions, it is clear that PJSP is responsible for compensating E-wallet customers who are victims of technical faults in the service provider's system. E-wallet software that frequently has technical issues will not offer E-wallet users with a sense of security and comfort, and will reduce customer interest in using the E-wallet. The drop in interest in utilizing E-wallets will hinder the government's GNNT policy, therefore E-wallet activity in Indonesia must be monitored.

Bank Indonesia, which oversees E-wallet in Indonesia, has a responsibility to ensure legal protection for E-wallet users in order to ensure the development of the GNNT movement in Indonesia. Bank Indonesia can make efforts to control and oversee E-wallets in Indonesia/ Such oversee and control are carried out so that E-wallet customers may use the existing applications without fear of incurring losses due to technological issues. Such stringent oversee and control would also aid in the reduction of disputes arising from E-wallet technological problems. Bank Indonesia, as the authority in charge of supervising E-wallets in Indonesia, should also manage E-wallet customer complaints. Bank Indonesia handles complaints from E-wallet customers in three steps, including education, consultation, and facilities.⁴³ However, the researcher contends that legal certainty provided by the Consumer Protection Act, as well as regulation and supervision by Bank Indonesia, is insufficient to give E-wallet consumers with legal protection and assurance.

Despite the fact that this E-wallet is subject to sectoral rules, specific regulations at the statutory level are required to give maximum legal protection and predictability to users. Specific statutory rules are required since the usage of E-wallets in Indonesia is growing, and the law governing E-wallets is vast and complicated, necessitating particular prudence in drafting legislation. This specific regulation was not drafted at the level of government regulations because, according to Article 12 of *Undang-Undang Nomor 15 Tahun 2019 tentang Perubahan Atas Undang-Undang Nomor 12 Tahun 2011 tentang Pembentukan Peraturan Perundang-Undangan* (Law Number 15 of 2019 concerning Amendments to Law Number 12 of 2011 Concerning the Establishment of Legislation), government regulations are regulations whose material functions are to carry out laws as they should be. Presidential regulations are those that regulate the administration of the government.⁴⁴ Regional rules, on the other hand, have the purpose of carrying out regional autonomy and assisting greater laws and regulations.⁴⁵ As a result, such precise legislative restrictions are seen to be highly successful in controlling E-wallet issues.

⁴² Naomi and Priyanto, "Perlindungan Hukum Pengguna E-Wallet Dana Ditinjau Dari Undang-Undang Perlindungan Konsumen."

⁴³ Damasha Khoiri Clevalda and Dona Budi Kharisma, "Perlindungan Hukum Terhadap Nasabah Bank," *Jurnal Privat Law* 9, no. 1 (2021): 1-9.

⁴⁴ Sofyan Apendi, "Ketiadaan Peraturan Menteri Dalam Hierarki Peraturan Perundang-Undangan Nasional Dan Implikasinya Terhadap Penataan Regulasi Dalam Sistem Hukum Nasional," *PALAR (Pakuan Law Review)* 7, no. 1 (2021): 111-26, <https://journal.unpak.ac.id/index.php/palar/article/view/3076>.

⁴⁵ Arifin, "Eksistensi Peraturan Daerah Dalam Sistem Hukum Nasional Dan Implikasinya Terhadap Otonomi Daerah," *Jurnal Ilmu Hukum Legal Opinion* 3, no. 1 (2015): 11-19.

The contents of the legislation at the level statutory suggested in this research must include the PJSP's responsibilities and obligations in the case of a technical disruption that causes losses for its users. E-wallet customers who suffer losses must first file a complaint with the PJSP so that the process of confirming the losses may begin. The PJSP must bear the whole damage, and the amount must be paid within three days. PJSP was granted three days to investigate the technological issue that occurred. If no technical errors are discovered on the PJSP, the E-wallet user can be notified. Other significant issues, including as personal data protection, consumer rights and duties, sanctions, legal remedies, and so on, must be addressed in the legislation in order to protect E-wallet and PJSP users by adhering to the principles of developing laws and regulations. invitation.

This specific regulation for the E-wallet must include the provisions in the Personal Data Protection Bill that have been proposed above for the protection of personal data in the E-wallet. The preamble in the statutory regarding E-wallets is an inseparable component of the Personal Data Protection Bill, which has been proposed by the researcher above since it is closely related to supporting the smooth operation of Indonesia's digital payment system. This specific regulation is critically required by Indonesia as a state of law to offer legal protection and assurance to users, as well as to create fear and deterrent to those who wish to perpetrate cybercrime.

Due to the function of law as a tool of social control and the law as a tool of social engineering, certain rules are required for the generalization phenomena of digital payment systems. Law as social control is defined as the ability of the law to govern individual conduct in order for the law to apply punishments for lawbreakers.⁴⁶ Law as a social engineering instrument indicates that the law may transform society by causing changes in social life that lead to intentional changes. These modifications are proposed by a person or organization who is seen as a change pioneer by the community.⁴⁷ Legal product created by law-making authorities have an impact on societal transformation. If the preparation and ratification of a legal product go rapidly, the legal product's efficacy in effecting social change will be high. In the other hand, if the preparation and implementation of a legal product are delayed, the legal product's influence on social transformation will be ineffective. In this situation, the laws that serves as a social engineering tool does not apply since it is not the law that causes changes in society, but rather changes in the law that create changes in society.⁴⁸

These modifications are legal reforms aimed at resolving current issues and establishing the desired legal state. According to Lawrence Friedman, there are three legal subsystems that must be addressed by legal reform.⁴⁹

- a. A legal structure is a legal institution that supports the legal system and consists of legal forms, legal institutions, legal instruments, legal procedures, and legal performance;
- b. Legal substance is the meaning and core of laws and regulations aimed at creating justice and being applied in the community. The legal substance should create new legal provisions that have not yet been controlled, ratify international rules in accordance with state ideology, and make changes to existing legal provisions to keep up with the times; and
- c. Legal culture refers to the professionalism with which a state administrative institution performs its tasks, as well as public understanding of the law.

⁴⁶ Ashadi L. Diab, "Peranan Hukum Sebagai Social Control, Social Engineering Dan Social Welfare," *Jurnal Al-'Adl* 7, no. 2 (2014): 53–66.

⁴⁷ Tuti Haryanti, "Hukum Dan Masyarakat," *Tahkim: Jurnal Hukum Dan Syariah* 10, no. 2 (2014): 160–68.

⁴⁸ Nazaruddin Lathif, "Teori Hukum Sebagai Sarana/Alat Untuk Memperbaharui Atau Merekayasa Masyarakat," *PALAR (Pakuan Law Review)* 3, no. 1 (2017): 73–94, <https://doi.org/10.33751/palar.v3i1.402>.

⁴⁹ Lutfil Ansori, "Reformasi Penegakan Hukum Perspektif Hukum Progresif," *Jurnal Yuridis* 4, no. 2 (2017): 148–63, <https://doi.org/10.35586/.v4i2.244>.

Lawrence Freidman's three legal subsystems, if completely implemented in specific regulations for E-wallets at the statutory level, will constitute a regulation that, from formulation to execution, will provide total legal protection and clarity for all parties.

Legislation is critical in controlling social life. Social life is evolving as a result of technological and information advancements. The fast advancement of information technology has resulted in the transformation of Indonesia's traditional payment system to a digital one. Obviously, this transformation carries with it difficulties that have not been properly controlled to give legal protection and assurance to its consumers. Special provisions in the Personal Data Protection Bill, as well as the formulation of laws and rules at the statutory level, are required to avoid and mitigate E-wallet problems that have occurred or may occur in the future, in order to contribute to the development of a better Indonesia.

4. Conclusion

Based on the outcomes of the presented research and discussion that have been described, several conclusions can be drawn by researchers, namely:

- a. With government backing, the usage of an E-wallet as a payment method is becoming more widespread in Indonesia. However, the usage of E-wallets in Indonesia introduces a number of additional issues, including the vulnerability of account breaches to steal users' data. Theft of user data is a significant criminal offence since it has ramifications for other crimes such as money laundering, account falsification, and so on. The following issue was a technical mistake in the PJSP system. Technical problems in the PJSP system will substantially affect consumers, resulting in a decline in user comfort on the E-wallet.
- b. Special arrangements at the legal level regarding E-wallet issues are needed by the State of Indonesia. Legislation has a function as a social control tool and a social engineering tool so that it has an important role in providing legal protection and certainty for E-wallet and PJSP users in Indonesia. Personal data privacy laws and regulations due to the rapid growth in the usage of E-wallets, they should be expressly controlled in the Law of Personal Data Protection. Special provisions should be made at the statutory level to protect E-wallet and PJSP users by adhering to the principles of establishing laws and regulations.

References

- Adminflick. "Awat Salah Kaprah, Ini 4 Perbedaan E-Wallet Dan E-Money." Flick, 2021. <http://flick.id/news/tag/perbedaan-e-wallet-dan-e-money/>.
- Ansori, Lutfil. "Reformasi Penegakan Hukum Perspektif Hukum Progresif." *Jurnal Yuridis* 4, no. 2 (2017): 148–63. <https://doi.org/10.35586/.v4i2.244>.
- Apendi, Sofyan. "Ketiadaan Peraturan Menteri Dalam Hierarki Peraturan Perundang-Undangan Nasional Dan Implikasinya Terhadap Penataan Regulasi Dalam Sistem Hukum Nasional." *PALAR (Pakuan Law Review)* 7, no. 1 (2021): 111–26. <https://journal.unpak.ac.id/index.php/palar/article/view/3076>.
- Arifin. "Eksistensi Peraturan Daerah Dalam Sistem Hukum Nasional Dan Implikasinya Terhadap Otonomi Daerah." *Jurnal Ilmu Hukum Legal Opinion* 3, no. 1 (2015): 11–19.
- Bachtiar. *Metode Penelitian Hukum*. Edited by Oksidelfa Yanto. Tangerang: UNPAM PRESS, 2018.
- Bank Indonesia. *Blueprint Sistem Pembayaran Bank Indonesia 2025*. Jakarta: Bank Indonesia, 2019.
- Benuf, Kornelius, and Muhamad Azhar. "Metodologi Penelitian Hukum Sebagai Instrumen Mengurai

- Permasalahan Hukum Kontemporer." *Jurnal Gema Keadilan* 7, no. 1 (2020): 20-33.
- Burhan, Fahmi Ahmad. "GoPay, OVO Hingga Bank Hadapi Risiko Sindikat Penipuan Dan Deepfake." *Katadata.co.id*, 2021. <https://katadata.co.id/desyetyowati/digital/605c7462c9447/gopay-ovo-hingga-bank-hadapi-risiko-sindikata-penipuan-dan-deepfake>.
- Clevalda, Damasha Khoiri, and Dona Budi Kharisma. "Perlindungan Hukum Terhadap Nasabah Bank." *Jurnal Privat Law* 9, no. 1 (2021): 1-9.
- Dewi, Sinta. "Konsep Perlindungan Hukum Atas Privasi Dan Data Pribadi Dikaitkan Dengan Penggunaan Cloud Computing Di Indonesia." *Yustisia Jurnal Hukum* 5, no. 1 (2016): 22-30. <https://doi.org/10.20961/yustisia.v5i1.8712>.
- Diab, Ashadi L. "Peranan Hukum Sebagai Social Control, Social Engineering Dan Social Welfare." *Jurnal Al-'Adl* 7, no. 2 (2014): 53-66.
- Haryanti, Tuti. "Hukum Dan Masyarakat." *Tahkim: Jurnal Hukum Dan Syariah* 10, no. 2 (2014): 160-68.
- Hidayat, Muhammad Taufik, Qurrotul Aini, and Elvi Fetrina. "Penerimaan Pengguna E-Wallet Menggunakan UTAUT 2 (Studi Kasus) (User Acceptance of E-Wallet Using UTAUT 2 - A Case Study)." *Jurnal Nasional Teknik Elektro Dan Teknologi Informasi* 9, no. 3 (2020): 239-47. <https://doi.org/10.22146/.v9i3.227>.
- Indonesia, CNN. "Data Warga RI Bocor: BRI Life, BPJS Hingga Pasien Covid-19." *CNNIndonesia.com*, 2021. <https://www.cnnindonesia.com/teknologi/20210729125539-185-673757/data-warga-ri-bocor-bri-life-bpjs-hingga-pasien-covid-19/1>.
- Inggiharti, Nonika. "Pengaruh Electronic Wallet Terhadap Kegiatan Keuangan Indonesia (Perbandingan Aplikasi Electronic Wallet Milik Perusahaan Financial Technology Terhadap Aplikasi Electronic Wallet Milik BUMN)." *University Of Bengkulu Law Journal* 5, no. 1 (2020): 74-88. <https://doi.org/10.33369/ubelaj.5.1.74-88>.
- Insana, Dwi Rorin Mauludin, and Ria Susanti Johan. "Analisis Pengaruh Penggunaan Uang Elektronik Terhadap Perilaku Konsumtif Mahasiswa Pendidikan Ekonomi Universitas Indraprasta Pgri." *JABE (Journal of Applied Business and Economic)* 7, no. 2 (2020): 209-24. <https://doi.org/10.30998/jabe.v7i2.7822>.
- Jamal, Syafruddin. "Merumuskan Tujuan Dan Manfaat Penelitian." *Al-Munir Jurnal Ilmiah Dakwah Dan Komunikasi* 3, no. 5 (2012): 147-57.
- Kurniadi, Imantoko. "Riset: Tingkat Adopsi E-Wallet Dalam Negeri Tumbuh Pesat." *Selular.Id*, 2021. <https://selular.id/2021/03/riset-tingkat-adopsi-e-wallet-dalam-negeri-tumbuh-pesat/>.
- Lathif, Nazaruddin. "Teori Hukum Sebagai Sarana/Alat Untuk Memperbaharui Atau Merekayasa Masyarakat." *PALAR (Pakuan Law Review)* 3, no. 1 (2017): 73-94. <https://doi.org/10.33751/palar.v3i1.402>.
- Mahira, Dararida Fandra, Emilda Yofita, and Lisa Nur Azizah. "Consumer Protection System (CPS): Sistem Perlindungan Data Pribadi Konsumen Melalui Collaboration Concept." *LEGISLATIF* 3, no. 2 (2020): 287-302.
- Manurung, Elsa Debora, Lastuti Abubakar, and Tri Handayani. "Kepastian Hukum Dalam Penyelenggaraan Layanan Dompot Elektronik Dalam Sistem Pembayaran Dikaitkan Dengan Prinsip Lancar, Aman, Efisien, Dan Andal Berdasarkan PBI Nomor 20/6/PBI/2018 Tentang Uang Elektronik." *Jurnal Jurisprudence* 10, no. 1 (2020): 33-51. <https://doi.org/10.23917/jurisprudence.v10i1.10226>.
- Marzuki, Peter Mahmud. *Penelitian Hukum*. Jakarta: Kencana Prenada Media Group, 2005.
- Mawardi, Didiek R. "Fungsi Hukum Dalam Kehidupan Masyarakat." *Masalah-Masalah Hukum* 44, no.

3 (2015): 275–83.

- Naomi, Fiona Pappano, and I Made Dedy Priyanto. "Perlindungan Hukum Pengguna E-Wallet Dana Di tinjau Dari Undang-Undang Perlindungan Konsumen." *Jurnal Kertha Semaya* 9, no. 1 (2020): 24–33.
- Nugroho, Andi. "Tiga Serangan Yang Dipakai Untuk Bobol Dompot Digital." Cyberthreat.id, 2020. <https://cyberthreat.id/read/4643/Tiga-Serangan-yang-Dipakai-untuk-Bobol-Dompot-Digital>.
- Pertiwi, Wahyunanda Kusuma. "DPR Sahkan Prolegnas Prioritas 2021, Ada RUU Perlindungan Data Pribadi Halaman All - Kompas.Com." Kompas.com, 2021. <https://tekno.kompas.com/read/2021/03/23/17280067/dpr-sahkan-prolegnas-prioritas-2021-ada-ruu-perlindungan-data-pribadi?page=all>.
- Prabowo, Aan, and Heriyanto. "Analisis Pemanfaatan Buku Elektronik (E-Book) Oleh Pemustaka Di Perpustakaan SMA Negeri 1 Semarang." *Jurnal Ilmu Perpustakaan* 2, no. 2 (2013): 1–9. <http://ejournal-s1.undip.ac.id/index.php/jip%5CnANALISIS>.
- Putri, Deanne Destriani Firmansyah, and Muhammad Helmi Fahrozi. "Upaya Pencegahan Kebocoran Data Konsumen Melalui Pengesahan Ruu Perlindungan Data Pribadi (Studi Kasus E-Commerce Bhinneka.Com) The Prevention Of Consumer Data Leakage Through Legalization Of The Personal Data Protection Bill." *2nd National Conference on Law Studies: Legal Development Towards A Digital Society Era*, 2020, 255–73.
- Rahmat, Pupu Saeful. "Penelitian Kualitatif." *Equilibrium* 5, no. 9 (2009): 1–8. <https://doi.org/10.31227/osf.io/wtnzc>.
- Rangkuty, Dewi Mahrani. "Apakah Penggunaan E-Wallet Masa Pandemi Covid-19 Semakin Meningkatkan Di Indonesia?" *Prosiding Konferensi Nasional Universitas Nahdlatul Ulama Indonesia* 1, no. 1 (2021): 251–60.
- Rudyanta, Timotius. "Fenomena Penggunaan E-Wallet Di Kalangan Pengusaha Warung Makan Di Perkantoran Jakarta." *Jurnal Pewarta Indonesia* 2, no. 1 (2020): 41–48.
- Saraswati, Putu Sekarwangi. "Fungsi Pidana Dalam Menanggulangi Kejahatan." *Jurnal Advokasi* 5, no. 2 (2015): 139–54.
- Satya, Venti Eka. "Pengaturan Sistem Pembayaran Digital Untuk Stabilitas Sistem Keuangan Indonesia." *Kajian Singkat Terhadap Isu Aktual Dan Strategis* 13, no. 2 (2021): 19–24.
- Sembiring, Lidya Julita. "Bisa Dibobol, Yuk... Hati-Hati Gunakan Dompot Digital." CNBC Indonesia, 2020. <https://www.cnbcindonesia.com/tech/20201016145935-37-194912/bisa-dibobol-yuk-hati-hati-gunakan-dompot-digital>.
- Septiyati, Lusi, and Siti Nurbaiti. "Perlindungan Hukum Terhadap Konsumen Pengguna Transaksi Dengan Sistem Pembayaran Go-Pay." *Jurnal Hukum Adigama* 1, no. 1 (2019): 1–25.
- Sinaga, Erlina Maria Christin, and Mery Christian Putri. "Formulasi Legislasi Perlindungan Data Pribadi Dalam Revolusi Industri 4.0." *Jurnal RechtVinding* 9, no. 2 (2020): 237–56.
- Situmeang, Sahat Maruli Tua. "Penyalahgunaan Data Pribadi Sebagai Bentuk Kejahatan Sempurna Dalam Perspektif Hukum Siber." *SASI* 27, no. 1 (2021): 38–52. <https://doi.org/10.47268/sasi.v27i1.394>.
- Soekanto, Soerjono, and Sri Mamudjo. *Penelitian Hukum Normatif Suatu Tinjauan Singkat*. Jakarta: PT Raja Grafindo Persada, 2001.
- Sutarmin, and Adi Susanto. "Potensi Pengembangan Transaksi Non Tunai Di Indonesia." *Sustainable Competitive Advantage-7 (SCA-7) Feb UNSOED*, 2017, 292–302. http://jp.feb.unsoed.ac.id/index.php/sca-1/article/viewFile/1025/pdf_198.

- Sutianto, Feby Dwi. "Peta Persaingan Dompot Digital Di Indonesia Setelah Masuknya Hary Tanoe Ke Arena." Kumparan.com, 2021. <https://kumparan.com/kumparanbisnis/peta-persaingan-dompot-digital-di-indonesia-setelah-masuknya-hary-tanoe-ke-arena-1vspT6lMeLh/full>.
- Sutriyanto, Eko. "Survei Snapcart: ShopeePay Kuasai 38 Persen Pasar Transaksi e-Wallet Di Indonesia." Tribunnews.com, 2021. <https://www.tribunnews.com/techno/2021/03/30/survei-snapcart-shopeepay-kuasai-38-persen-pasar-transaksi-e-wallet-di-indonesia>.
- Tazkiyyaturrohmah, Rifqy. "Eksistensi Uang Elektronik Sebagai Alat Transaksi Keuangan Modern." *Muslim Heritage* 3, no. 1 (2018): 21–39. <https://doi.org/10.21154/muslimheritage.v3i1.1240>.
- Yudha, Kriswangsa Bagus Kusuma. "Jangan Salah! Ini Perbedaan E-Money Dan E-Wallet Dalam Transaksi." Finansialku.com, 2019. <https://www.finansialku.com/perbedaan-e-money-dan-e-wallet/>.
- Yuniarti, Siti. "Perlindungan Hukum Data Pribadi Di Indonesia." *Business Economic, Communication, and Social Sciences (BECOSS) Journal* 1, no. 1 (2019): 147–54. <https://doi.org/10.21512/becossjournal.v1i1.6030>.
- Zuhad, Ahmad. "Catat! Ini 5 Masalah UU ITE Yang Wajib Segera Direvisi." Kompas.tv, 2021. <https://www.kompas.tv/article/147484/catat-ini-5-masalah-uu-ite-yang-wajib-segera-direvisi>.