

Addressing Cybercrime in the Sharia Digital Wallet Industry: A Legal Perspective in the Indonesian Context

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Abstract. The advent of Sharia digital payments in Indonesia's Islamic economics represents a transformative leap. While this innovation offers a plethora of advantages, exercising prudence is imperative, given the potential risks that overlooking certain dimensions might entail, particularly in the realms of cybercrime and data misuse. Critical focal points encompass compliance, security, and the protection of personal data. To tackle these concerns comprehensively, this paper delves into the regulatory landscape governed by the Indonesian government regarding data privacy for users of Islamic e-wallets. Moreover, it navigates through the potential pitfalls and challenges associated with Islamic digital payments, with a spotlight on data safeguarding and the specter of cybercrime. Employing a normative methodology encompassing statutory, case-based, and conceptual approaches, the study reveals that the utilization of Sharia e-wallets in Indonesia harmonizes with the Islamic principles expounded in the Fatwa of the National Sharia Council. The government has further fortified its stance with robust regulations for safeguarding personal data, facilitated by institutional collaboration involving Bank Indonesia and the Financial Services Authority. Nevertheless, diligent attention remains a prerequisite to guarantee the adherence of Sharia digital payment operators to the existing legal framework.

1 Introduction

In light of the insights presented in the 2019/2020 Global Islamic Economy Report, Indonesia has emerged as a frontrunner in the realm of Sharia-compliant financial indicators. According to the report, Indonesia's stature in this domain has significantly advanced, propelling it from the tenth rank in 2018 to a remarkable fifth position [1]. This notable leap underscores Indonesia's steadfast commitment to fostering an economy in harmony with Sharia principles. The country's resolute dedication is further exemplified by its 2019-2024 Halal Economic Masterplan, which underscores the imperative of fortifying

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the halal economy across all sectors [2]. This strategic blueprint underscores Indonesia's aspiration to create an economic landscape that resonates with the principles of Sharia.

Indonesia's distinct demographic composition, with approximately 87 percent of its 273 million populace adhering to the Islamic faith, underpins the significance of these developments [3]. With such a substantial Muslim population, the country's emphasis on nurturing Sharia-compliant economic avenues aligns seamlessly with its cultural and religious ethos. This confluence of factors sets the stage for a remarkable market potential in Indonesia. The burgeoning demand for Sharia-compliant products and services is poised to surge, creating opportunities across various sectors. Among these, digital payment methods rooted in Islamic principles hold substantial promise. Innovative solutions such as e-wallets and e-money, designed in accordance with Sharia guidelines, are primed to tap into the growing appetite for financial tools that resonate with the values of the Muslim population. As Indonesia continues to ascend as a global leader in the Islamic economy, its strategic direction toward cultivating Sharia-compliant economic frameworks stands as a testament to its forward-looking approach. The fusion of its burgeoning Muslim population, the momentum of its economic policies, and the potential of Sharia-based financial innovations positions Indonesia on a trajectory of remarkable economic growth and cultural resonance.

Indonesia, mirroring the trajectories of several other nations, is taking impressive strides on the path toward transforming into a cashless society, driven by its enthusiastic adoption of digital payment systems and a concerted effort to minimize cash-based transactions [4]. This transition signifies a pivotal moment in the nation's financial landscape, reflecting a shift towards convenience, efficiency, and modernization. According to data from Bank Indonesia (BI), the year 2020 witnessed a significant upswing in the adoption of electronic money, with 51 businesses introducing electronic money systems. These ventures collectively facilitated transactions amounting to a substantial IDR 15 trillion from the period spanning January to May [5]. This compelling statistic underscores the increasing acceptance of digital payment methods and their integration into the everyday transactions of Indonesian society.

One remarkable indicator of this digital transformation is the consistent rise in e-money transactions within Indonesia. Notably, there was a staggering surge of approximately 400 percent in such transactions during the year 2019, in comparison to the preceding year [6]. This meteoric rise highlights the growing preference for cashless alternatives among the populace. The implications of this trend are far-reaching. It paints a portrait of an Indonesian society in motion, propelling itself toward a future with diminished reliance on cash transactions. This trend is particularly pronounced in urban areas, where a majority of people are gravitating away from traditional cash payments. The ease, speed, and security offered by digital payment systems are aligning seamlessly with the demands of modern lifestyles, thus contributing to this shift.

The journey toward a cashless society is multi-faceted and underscores the symbiotic relationship between technology and societal evolution. As Indonesia embraces digital payment platforms, it not only paves the way for greater financial inclusivity but also establishes a foundation for enhanced transparency and accountability in transactions. Indonesia's voyage toward a cashless society is marked by a compelling embrace of digital payment systems, as evident from the exponential growth of e-money transactions. This transition signifies a broader societal shift, reflecting the aspirations of a more efficient, convenient, and forward-looking financial landscape.

A pivotal point of focus is the introduction of Indonesia's first and sole Sharia payment service by a state-owned enterprise in 2019. The birth of LinkAja Syariah marked a monumental step towards establishing an electronic payment ecosystem that resonates with Sharia principles. This pioneering initiative introduced a digital wallet that securely houses

user payment details, obviating the need for physical wallets and engendering convenience, security, and compliance with Islamic finance tenets [1]. By integrating Islamic principles into electronic money systems, Indonesia is creating a platform that mitigates the concerns associated with conventional electronic money. The issue of interest, or *riba*, which has long been a point of contention in traditional financial systems, is directly addressed through the design of these Sharia-compliant solutions. This not only aligns with Islamic teachings but also establishes a novel paradigm in the financial sector that fosters trust and confidence.

Beyond its alignment with Sharia principles, this digital transformation yields substantial benefits for both individuals and companies. Digital wallets, like LinkAja Syariah, present a compelling opportunity to streamline financial transactions while also amassing valuable consumer data [7]. This data, centered around customer spending habits, becomes a potent tool for companies to craft more effective and personalized marketing strategies [5]. This symbiotic relationship between consumer convenience and business insight is poised to redefine how financial services are conceptualized and delivered. However, as with any technological advancement, convenience is often accompanied by concerns about privacy. The collection and utilization of personal data raise legitimate apprehensions about potential misuse [8]. Striking a balance between the benefits of enhanced services and safeguarding user privacy becomes a pivotal challenge for both service providers and regulators.

In the contemporary digital landscape, the paramount concern of consumer data protection stands as a poignant reminder of the challenges posed by privacy and data security in the age of technology [9]. These concerns have reverberated across various sectors, exposing the vulnerabilities inherent in the digital realm. Instances of data misuse and breaches have cast shadows on industries like e-hailing transportation, where personal data has been exploited for malicious intent [10]. As the world of finance embraces the era of Islamic digital payments, a similar vigilance is imperative to ensure the sanctity of user data and uphold the principles of Sharia.

Notably, the concept of safeguarding wealth, or "*hifz mal*," resonates deeply within the ethos of Islamic financial principles [11]. The use of e-wallets, a hallmark of modern digital payments, inherently aligns with this concept, providing a secure and efficient means of protecting one's financial resources. However, this transition to digital financial platforms is not without its complexities, particularly in terms of adhering to Sharia principles and addressing potential issues that arise from the intersection of technology and faith. In this context, a thorough examination of the application of digital payment systems within the framework of Islamic principles becomes pivotal. While e-wallets and digital payments offer unprecedented convenience, they also bring forth concerns that warrant careful evaluation within the context of Sharia. As observed in previous studies [12], the implementation of these systems can potentially raise issues that require meticulous consideration to ensure they align harmoniously with the tenets of Islam. As the digital payments landscape evolves, it is imperative to conduct comprehensive research that not only delves into the technical and operational aspects of these systems but also addresses their compatibility with Sharia principles. Understanding how data protection, privacy, and the sanctity of financial transactions intertwine with Islamic ethics becomes an ethical and operational imperative.

In the evolving landscape of digital finance, where technological advancements intertwine with religious principles, the synergy between Islamic digital payments and data protection emerges as a critical concern. Amidst the myriad studies exploring the realms of Sharia digital payments and data safeguarding, a noticeable gap exists - one that pertains to the unique context of consumer data protection for Sharia e-wallets and Islamic digital payments in Indonesia. This paper takes a pioneering step towards addressing this gap,

delving into the intricate interplay between government regulations, consumer data protection, and Islamic perspectives within Indonesia's dynamic financial landscape.

The primary objective of this paper is to comprehensively investigate how the Indonesian government navigates the realm of data protection concerning consumers of Islamic e-wallets. This exploration encompasses an in-depth analysis of regulatory frameworks and mechanisms in place to ensure that the personal data of e-wallet users remains secure and confidential. By shedding light on the specific regulations tailored to the context of Islamic digital payments, this study aims to contribute valuable insights to the existing body of knowledge.

A pivotal facet of this inquiry revolves around examining the existing practices of Islamic digital payments in Indonesia. The study goes beyond the surface to uncover how these systems prioritize data protection and safeguard consumer privacy. By dissecting the operational intricacies of Islamic e-wallets, the paper aims to uncover the measures and protocols implemented to uphold the confidentiality and integrity of user data. Integral to this exploration is the consideration of Islamic perspectives on digital payment use, particularly with reference to the Fatwa of the National Sharia Council-Indonesian Ulema Council (DSN-MUI). The convergence of religious teachings and modern technology poses questions about the compatibility of digital transactions with Islamic principles. This study endeavors to provide a nuanced analysis of how Islamic scholars perceive the use of digital payments, especially within the contours defined by the Fatwa, thereby offering insights into the moral and ethical dimensions of these financial tools.

2 Methods

The paper utilized normative research methodologies. This study incorporates a combination of the case, statutory, and conceptual approaches. The data collection process encompasses a diverse range of sources: primary sources encompassing pertinent laws and regulations, secondary sources consisting of reputable scholarly articles, research discoveries, books, conference presentations, and tertiary sources derived from legal dictionaries and encyclopedias pertinent to the subject matter. Employing a systematic approach, the collected data will be meticulously identified and scrutinized in alignment with the research objectives. This scrutiny unfolds through a descriptive-qualitative framework supplemented by a selection of pertinent methodologies.

3 Sharia Digital Wallet: An Islamic Overview

An electronic wallet, commonly referred to as an "e-wallet," stands as a facilitator of authorized, swift, secure, and seamlessly integrated transactions [13]. These digital repositories typically operate as server-based applications, necessitating an initial connection with the issuing entity. Nestled within the realm of financial technology (fintech), e-wallets emerge as solutions aimed at streamlining transactions for enhanced convenience [14]. Within Indonesia's dynamic landscape, e-wallets have secured a significant role, catering to a multitude of activities such as utility bill payments, installment loans from multi-finance entities, the acquisition of credit or data packages, and various transactions facilitated with remarkable ease through e-wallets.

Championing the movement towards cashless transactions, Bank Indonesia (BI) has diligently championed the National Non-Cash Movement (GNNT) campaign since 2014 [15]. The evolution of e-wallet usage within Indonesia, notably amidst the challenges posed by the pandemic, has been a tale of substantial growth and advancement. In the year 2020, key organizations including PT Dompot Anak Bangsa (GoPay), PT Espay Debit Indonesia

Koe (Dana), PT Visionet Internasional (OVO), and PT Fintek Karya Nusantara (LinkAja) received official licenses to issue electronic money, as duly noted by BI [16].

From an Islamic standpoint, e-wallets gain acceptance when they are aligned with the provisions of Allah, maintaining distance from concepts such as usury, gharar, maysir, tadbis, risywah, and israf, while resonating harmoniously with the teachings of the Quran and Hadith [17]. Consequently, within the context of Islam, e-wallets are considered permissible, offering not only expediency in transactions but also convenience for individuals. The realm of Islamic electronic money finds compliance with Sharia principles in accordance with the Fatwa of the National Sharia Council-Indonesian Ulema Council No: 116/DSN-MUI/IX/2017, specifically addressing Sharia Electronic Money. The bond between the issuer of electronic money and its holder is regulated by either a wadi'ah or qardh contract. For e-wallets to be deemed Sharia-compliant, they must strictly adhere to Islamic laws, emphasizing the need for Sharia-based e-wallets, as conventional counterparts might inadvertently encompass elements conflicting with Sharia principles [18].

The very tenets of the Fatwa of the National Sharia Council-Indonesian Ulema Council No: 116/DSN-MUI/IX/2017 underline that the nominal amount of electronic money issued should be deposited within a Sharia bank - a stark contrast to conventional e-wallets where settlement funds often reside within conventional banks. Notably, if the contract underpinning the e-wallet is fashioned as a qardh contract, which is frequently the case with traditional e-wallets, it might inadvertently involve usury, even if cashback features are permissible as long as they are employed for the sake of benefit [19].

At present, Indonesia's landscape showcases a solitary Sharia-based e-wallet, LinkAja Syariah, launched on April 14, 2020. With the issuance of the DSN-MUI Fatwa No. 116/DSN-MUI/IX/2017, LinkAja Syariah obtained a DSN-MUI certificate, signifying its alignment with the stipulated principles. By eschewing usury, gharar, maysir, tadbis, risywah, and israf, and maintaining balances within Sharia-compliant banks, this Sharia-based iteration of LinkAja stands as a beacon of adherence to Sharia norms. The progression towards the future holds promise for the emergence of additional Sharia-based e-wallets, envisioned to cater to the preferences of Muslim users, aligning seamlessly with the principles of Islamic laws and values.

4 The Prospects and Challenges of Sharia Digital Economy Innovation

The landscape of digital payments in Indonesia is rapidly evolving, with both established banks and start-up enterprises at the forefront of this transformative journey. According to the 2018 Fintech survey conducted by Daily Social and the Financial Services Authority (OJK), Go-Pay and OVO have emerged as the leading e-payment services in the nation. Impressively, the survey highlighted that 79.4% of the 1,419 respondents opted for Go-Pay, while 58.4% favored OVO. During the same period, Go-Pay's transactions reached a total value of IDR 87 trillion, while OVO experienced a remarkable upsurge with a 400% increase in total users and a staggering 75-fold rise in transactions, culminating in approximately one billion transactions [20].

The allure of digital payments rests in their comfort and convenience, which resonate not only with the public but also within the banking sector. This technology amplifies earnings for banks, presenting customers with a streamlined financial experience. Yet, despite these advancements, the availability of such facilities in Indonesia remains relatively limited. In response, the introduction of Sharia digital payments stands as a plausible solution to reduce the cost of funds for Sharia-compliant activities [21]. Consequently, the Indonesian Sharia banking sector finds itself in the position to provide

this service to its customers, a move that aligns seamlessly with the needs of the Muslim community constituting 87% of the population.

The pursuit of Sharia digital payments has prompted the National Sharia Economy and Finance Committee (KNEKS) to orchestrate discussions with key stakeholders including Bank Mandiri Syariah, BNI Syariah, BRI Syariah, BTN Syariah, and PT Finarya - the entity overseeing LinkAja, a state-owned enterprise's digital payment system. This collaborative effort envisions the development of a Sharia-compliant digital payment application, fortified by Sharia Banks serving as Custodian Banks [22]. This symbiotic alliance not only augments Islamic financial services but also bolsters the growth of a halal lifestyle within Indonesian society.

The burgeoning popularity of digital wallet applications, especially among millennials and Generation Z in Indonesia, foretells a promising trajectory towards a cashless society. Ipsos Media research, based on 500 respondents across major cities, elucidates that approximately 68% of this demographic employ digital wallets at least once a week, primarily for online transportation services (40%) and food and beverage purchases (32%). The pioneering figure in this landscape, Go-Pay, garners the highest recognition among younger users (58%), trailed by OVO (29%), Dana (9%), and LinkAja (4%) [23].

Initiating customer engagement often relies on promotions, yet it's the gradual accumulation of trust that solidifies loyalty. This steadfast loyalty forms a robust foundation, indicating that user preferences align with service quality, consequently becoming a sustainable revenue driver [24]. Scholars suggest that attracting devoted clients entails introducing innovative features that stand out [25]. Additionally, Generation Z's penchant for installment payments and millennials' inclination towards savings-linked digital wallets augur well for the sector's growth [26].

Despite the evident prospects, the landscape isn't devoid of challenges. As digital wallets thrive on consumer transaction data, protecting this data and ensuring security become paramount [7]. With the impending influence of data and artificial intelligence, proper data handling emerges as a cornerstone, critical for maintaining trust and bolstering consumer confidence [27]. Government intervention is essential to safeguard citizens' data confidentiality, given that trust underpins the financial sector, necessitating prudent data management [28].

The trajectory of digital payments in Indonesia illuminates a landscape marked by dynamic evolution, convenience, and transformative potential. It is a narrative where financial institutions, technology, and societal needs intertwine, opening vistas of innovation while demanding careful attention to data security and trust-building measures. As Indonesia surges forward, the balance between technological advancements and ethical considerations emerges as a central theme, steering the nation towards a future where financial systems serve the needs of its diverse populace.

5 The Current Regulatory Framework in Addressing the Issue of Cybercrime

The rapid advancements in technology, encompassing both devices and their applications, have ushered in positive transformations in people's lives, notably exemplified by the emergence of Sharia e-wallets. These innovative digital platforms, designed to store and manage users' online shopping information, including login credentials, passwords, shipping details, and credit card information, significantly enhance the ease of transactions. However, amidst the host of advantages technology bestows, it also introduces vulnerabilities, creating an avenue for cybercriminals to perpetrate various forms of cybercrime. As technological progress unfolds, so do new avenues for criminal activities, with an increasing number of cybercrimes emerging within the realm of internet

technology. This surge of cybercrime, a byproduct of technological evolution, has garnered international concern, casting a negative shadow on modern life.

Termed by David S. Wall, 'cybercrime' signifies the peril and insecurity that permeates the online sphere, encompassing a spectrum of crimes that manifest in the digital realm. Instances of e-wallet user data theft can often be traced back to scams or phishing attacks executed by malicious actors. Those who perpetrate data breaches fall within the ambit of criminal law, which governs actions of legal entities and their consequences. Within Indonesia's legal framework, the concept of legality, underpinned by penalties that adhere to written regulations, serves as a foundational pillar for determining the classification of an act as a crime. Article 1(1) of the Penal Code explicitly elucidates this concept. One commonly employed method by cybercriminals is phishing, a deceptive tactic where attackers masquerade as trustworthy entities to illicitly gather sensitive data such as usernames, passwords, and credit card numbers [29].

In alignment with Indonesian law, forcibly gaining unauthorized access to another individual's account constitutes a violation of Article 30, paragraphs (1) and (2) of Law No. 11 of 2008 concerning Information and Electronic Transactions. This law deems any deliberate unauthorized access to another person's electronic system or computer, performed illicitly or without authorization, as a transgression. Article 46 stipulates that individuals found violating Article 30, paragraphs (1) or (2), could face a maximum sentence of 7 years in prison and/or a maximum fine of IDR 700 million [30].

The realm of privacy rights encompasses the safeguarding of personal information, ensuring freedom from unwarranted intrusion into one's private affairs. This right extends to unhindered communication with others, free from surveillance. Furthermore, the right to privacy encompasses shielding against unauthorized access to personal data and information related to one's private life. Any unsanctioned usage of personal data infringes upon an individual's rights, entitling them to pursue legal remedies for reparations [31]. As outlined in Article 26, paragraph (1) of Law No. 19 of 2016, an amendment to the Information and Electronic Transactions Act (IET Act), the use of electronic media-related personal data mandates the individual's consent, unless otherwise specified by laws and regulations.

Moreover, Indonesia's legislative body has recently enacted a specialized law to address the protection of personal data. On October 17, 2022, President Joko Widodo signed Law Number 27 of 2022 Concerning the Protection of Personal Data (PDP Act). This legislation aims to safeguard users' personal information held by electronic system operators and prevent its misuse by malicious entities. After development since 2016, the PDP Act heralds a new era in the management of personal data, particularly in the digital domain, as emphasized by Johnny G. Plate, the Minister of Communication and Information [32]. The PDP Act classifies personal data as information that directly or indirectly identifies individuals through electronic or non-electronic means. It underscores the importance of taking measures to uphold the constitutional rights of individuals during the processing of their personal data. Public personal data is categorized into general information that can be shared and specific information, unauthorized disclosure of which may entail legal ramifications. Examples of general data encompass elements such as full name, gender, nationality, religion, and marital status, while specific data encompasses categories like health, biometric and genetic data, criminal histories, child data, and financial data, subject to relevant laws and regulations.

The PDP Act addresses criminal threats associated with prohibited behaviors involving personal data, including theft, dissemination, and exploitation, along with misrepresentation. Such actions can lead to imprisonment of up to 4 years and/or substantial fines, detailed in Articles 67 to 69 of the law. This legislation also forbids the unauthorized use or disclosure of another person's personal data, along with unauthorized

acquisition of personal information not belonging to oneself, as laid out in Articles 65 and 66 of the PDP Act.

While the PDP Act signifies a new era in the realm of personal data management in Indonesia, it remains a dynamic framework. The government shoulders responsibilities to ensure the security of personal data, urging Sharia e-wallet operators to enhance security measures (such as firewalls and encryption), fulfill obligations, and safeguard general and specific personal data as part of compliance [33]. In case of data breaches or incidents involving personal information, the operator's adherence to the PDP Act will be evaluated. Non-compliance may lead to various penalties dictated by the law, including administrative sanctions, imprisonment, fines, and criminal penalties.

6 Conclusion

To sum up, the integration of e-wallets within the parameters of Islamic principles hinges on their unwavering alignment with Sharia tenets, which unequivocally reject practices like usury, excessive uncertainty (*gharar*), gambling (*maysir*), deception (*tadlis*), bribery (*risywah*), and extravagance (*israf*). While Sharia e-wallets usher in a realm of opportunities and advantages, stakeholders face an imperative to confront associated risks, particularly in the realm of data security. In an evolving landscape where criminal methodologies have adapted to technological progress, particularly within the domain of internet technology, safeguarding personal information takes on an utmost significance in effectively managing the financial journey. Embracing the ethos of Islamic values, stakeholders have discerned that Sharia e-wallets stand as an instrumental conduit, facilitating financial transactions while upholding ethical norms. However, the march of technology has also amplified the dimensions of vulnerability, thereby accentuating the urgency of deploying robust data security protocols. This underscores a collective onus, compelling stakeholders not only to leverage the benefits of Sharia e-wallets but also to institute comprehensive safeguards against looming threats and potential breaches.

Addressing this multifaceted challenge, Indonesia's legislative framework—anchored by the Government, Parliament, Bank Indonesia, and the Financial Services Authority—has orchestrated a comprehensive approach to fortifying data security. Encompassing data acquisition, management, and punitive measures for breaches, these legislative provisions underscore the nation's resolute commitment to preserving the integrity of personal information within the digital realm. At the epicenter of this regulatory mosaic resides the recently enacted Personal Data Protection Act (PDP Act). Entrusting the government with the mantle of safeguarding personal data security, this act heralds a pivotal stride in securing individuals' digital footprints. As this regulatory framework gains momentum, the government's oversight is pivotal, ensuring that Sharia e-wallet operators heighten their security apparatus, align with stipulations, and vigilantly shield both general and specific personal data. In embracing the potential inherent in Sharia e-wallets, the clarion call for data security rises as a fiduciary duty, binding stakeholders to a dual mission: facilitating financial transactions grounded in Islamic precepts while assiduously safeguarding delicate personal information. This concerted endeavor echoes a collective pursuit of technological progress in harmony with ethical mores. The culmination of these endeavors charts a path toward an enriched financial landscape, one that adroitly caters to contemporary needs while nurturing a culture of trust and security for the future.

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