THE INFLUENCE OF DIGITALIZATION ON BANKING FINANCIAL INSTITUTIONS IN INDONESIA

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Abstract

The development of digitalization systems has a direct impact on the banking industry, both positively and negatively. This research aims to examine the influence of digitalization on financial banking institutions in Indonesia and how efforts are made to prevent the negative effects of banking service digitalization in Indonesia. This study employs a normative legal research method, utilizing a legislative approach. One of the positive impacts of digitalization on financial banking institutions in Indonesia is the emergence of digital banking services. However, one of its negative consequences is the potential for cybercrimes. To prevent the negative effects of banking service digitalization in Indonesia, various preventive measures can be taken, such as not disclosing PINs to others and exercising caution when using internet applications. Additionally, the Financial Services Authority (OJK) has issued Regulation No. 13/POJK.03/2020 amending Regulation No. 38/POJK.03/2016 regarding the Implementation of Risk Management in the Use of Information Technology by Commercial Banks.

Keywords: *Banking, Digitalization, Financial Services Authority, Prevention*

1. INTRODUCTION

The industrial world is entering a new phase known as the Fourth Industrial Revolution, also referred to as Industry 4.0. The term Industry 4.0 was coined in Germany during the Hannover Fair in 2011, marking a phenomenon that combines cyber technology and automation. Industry 4.0 is often termed "cyber-physical systems," with its core principle revolving around automation facilitated by information technology. This can potentially reduce human involvement in processes, leading to increased efficiency and effectiveness in the workplace. As industries embrace digital transformation, various activities are adapting to keep pace with these advancements (Mutiasari, 2020).

Technological innovations that enhance daily life convenience are extending their influence into the financial sector. One area undergoing a significant shift into the industry 4.0 era is the banking sector. Banking is a growing service industry in Indonesia, with the potential to drive the country's economic growth. Banking plays a pivotal role in contributing to national income as it serves as an intermediary institution, gathering public funds and directing them toward productive economic endeavors.

The Financial Services Authority (OJK) is actively promoting banking digitization through the issuance of OJK Regulation No. 12/POJK.03/2018, which outlines the Provision of Digital Banking Services by Commercial Banks. According to this regulation, "digital banking services encompass electronic banking services designed to optimize customer data utilization, enabling faster, easier, and customer-centric services while ensuring security" (Safi'i, 2022). With the introduction of this OJK regulation, the banking sector aims to harness technology to better cater to customer needs.

The digital transformation within the banking industry extends beyond mere provision of online and mobile banking services. Financial institutions in banking need to innovate by seamlessly integrating digital technology with customer interactions,

making it more convenient for users to access banking services. Many banks have already initiated the development of their digital banking features, offering not just applications and websites for transactions but also implementing digitalization within their branch offices across Indonesia. For example, certain banks now provide applications for reserving queues, facilitating tasks such as printing savings transactions and replacing traditional savings books through self-service machines. Even opening new accounts can now be accomplished independently by customers, eliminating the need to visit a physical branch. The advent of digital banking represents a solution to time-consuming banking processes, with the banking industry making forward-looking investments through digitalization.

The progression of digitalization systems has a direct bearing on the banking sector, as the integration of digital technology in banking can be seen as both an advantageous opportunity and a formidable challenge. The evolution of digital banking is undergoing transformations that will affect the industry, including shifts in customer behavior away from traditional transactions, such as visiting physical banks for savings, towards digital alternatives. Furthermore, fintech's role is poised to closely parallel that of traditional banks, as banks wield authority over payment systems while fintech companies leverage cutting-edge technology for user data analysis. Concurrently with the development of digital services, digitalization systems bring forth myriad benefits and conveniences for the banking sector, encompassing improved data management and processing, heightened operational efficiency, and an enriched customer experience.

However, while digitalization bestows positive influences and advantages, it also carries adverse consequences for financial banking institutions, given the risks tied to the substantial role banks play in aggregating public funds. Thus, concerted efforts are imperative to counteract the unfavorable repercussions that may give rise to financial malfeasance within the banking sector. Leveraging the rapidly advancing technological landscape represents a potent strategy. In light of the brisk technological evolution, all organizations must adapt to these ongoing changes (Cahyolaksono et al., 2021). Moreover, the aim of this research is to comprehensively examine the impact of digitization on financial banking institutions in Indonesia, including both its positive and negative effects, as well as the preventive measures taken to mitigate potential adverse consequences resulting from the digitization of banking services in Indonesia.

2. RESEARCH METHODS

This study employs a normative legal research methodology, which is an approach to legal research that relies exclusively on the examination of secondary data, specifically literature and legal regulations, as the basis for the research (Diantha & Sh, 2016). The chosen approach is centered around legislative analysis. The technique used for collecting legal materials involves conducting a literature review, which entails scrutinizing various literary sources such as books, scholarly journals, research reports, and both physical and online documents that are pertinent to the research topic (Amiruddin, 2016). Within this research, the method of legal material analysis applied is the descriptive analysis method, aiming to provide a lucid and unbiased portrayal of legal events or conditions. This qualitative analysis delves into data that cannot be quantified.

3. RESULTS AND DISCUSSION

3.1. The Effect of Digitalization on Banking Financial Institutions in Indonesia

Over time, there has been rapid and extensive evolution in the field of information technology, and it has become an essential requirement for society today. The primary objective behind the development of information technology is to create a future for humanity that is improved, more convenient, cost-effective, faster, and secure. This progress in information technology has brought about significant and fundamental changes in various aspects of human life by simplifying tasks and providing valuable support. In the realm of finance, this progress has given rise to technology-driven products known as financial technology (fintech) (Benuf et al., 2020). According to Article 1, Clause 1 of Bank Indonesia Regulation No. 19/12/PBI/2017 concerning Financial Technology Implementation, financial technology refers to the utilization of technology within the financial system to generate new products, services, technologies, and business models, potentially impacting monetary stability, financial system stability, and the efficiency, security, and reliability of payment systems.

Digital innovations within the financial and banking sectors have introduced novel products that pose a challenge to the traditional banking model. Banks are required to adapt to technological advancements to stay competitive. Currently, there is a new trend emerging within the banking industry, primarily driven by the rapid evolution of digital technology. The swift progress in digital technology has prompted banks to gradually shift their focus towards developing banking services with a digital touch. Over time, these banking services are transitioning into what we refer to as digital banking (Mutiasari, 2020).

The effects of digitalization on financial banking institutions in Indonesia can be categorized into both positive and negative impacts, as outlined below:

3.1.1. The Positive Impact of Digitalization on Financial Banking Institutions in Indonesia

To begin, digital banking services are supplanting conventional approaches to banking activities. Clients no longer necessitate visiting physical branches solely for tasks like account opening or financial transactions; these tasks can now be completed with a simple tap on their smartphone screens. This shift from traditional to digital banking enhances operational efficiency, effectiveness, and overall service quality for customers. This shift is especially significant in light of the rapid advancements in information technology and evolving customer behaviors and demands, which drive banks to cater to these needs. Presently, banks are augmenting their services to empower customers to independently access a range of banking services (self-service) without requiring physical branch visits, thereby making transactions more convenient and efficient. These self-service banking options encompass registration, various transactions (cash, transfers, payments), and other services, including account closure, commonly referred to as digital banking (Maulidya & Afifah, 2021). Many of these digital financial transaction features are closely associated with state-owned banks, given that the majority of their customers engage in digital financial transactions (Moridu, 2020).

As an example of digital banking services in Indonesia, two products stand out: Bank BRI's BRIAPI (BRI Application Programming Interface) and BNI's virtual assistant chatbot, SABRINA (Smart BRI New Assistant). PT Bank Negara Indonesia Tbk (BNI) has also introduced Digital Savings Account Opening and BNI New Mobile Banking.

Digitalized banks provide convenience and ease to their customers, attracting interest from a younger, productive demographic. Technological advancements have not only impacted the banking industry but have also led to the emergence of numerous financial technology companies (M Allo, 2020).

Secondly, fintech introduces convenience into financial transactions, covering payment methods, fund collection, loans, and asset management, all of which can be expedited and streamlined through technology. The convenience offered by fintech serves as a focal point for banks to continually innovate and enhance service quality, ensuring customer desires and satisfaction are met while preserving customer trust and fostering loyalty. In this era of digitalization, banks are incorporating fintech 4.0 to expand their businesses through technology.

Thirdly, banking digitization unquestionably brings positive effects to both banks and their customers. Transactions liberated from geographical and temporal constraints offer significant advantages to customers, while banks benefit from increased fee-based income and reduced labor costs, among other positive impacts (Salmah & Murti, 2020).

Fourthly, the widespread availability of digital banking enhances the competitiveness of Indonesia's banking sector. Digital banking can make banking services more accessible to the public and improve banking efficiency, thereby stimulating economic activity (OJK I).

Fifthly, with the advantages realized by banking customers, the exodus of services to non-banking entities can be minimized. At the very least, customers no longer encounter hindrances related to physical paperwork or manual authorizations. Physical visits to branch offices and manual document submissions or signatures are no longer prerequisites.

3.1.2. The Negative Effects of Digitalization on Banking Financial Institutions in Indonesia

Firstly, the presence of digital transactions carries the potential for cybercrimes and technological fraud. This is because digital transaction activities involve storing customer data in online systems, which can be exploited by unauthorized individuals seeking to steal customer information. The threat of data theft can result in the misuse of personal data, causing harm to customers. Ensuring the security and confidentiality of data in digital transactions is crucial for building and maintaining customer trust.

Secondly, security risks associated with the use of information technology (IT) can manifest in various ways, such as the creation of counterfeit products and the unauthorized acquisition of user data. If non-cash payment data is illicitly accessed and subsequently employed for transactions by irresponsible parties or transferred as money or other assets, it can lead to losses for both the issuer and users of non-cash payment methods. Heightened risks related to defaults and IT can result in failures within the payment system, ultimately contributing to instability in the financial system.

Thirdly, the widespread adoption of non-cash payment methods may have implications for monetary policy. In terms of monetary policy, innovations in non-cash payment instruments can introduce complexity when relying on quantity-based targets for monetary control. However, these complexities should not affect the effectiveness of monetary policy when interest rates serve as the primary tool. As long as monetary policy accounts for the growth of non-cash payment instruments, particularly e-money, the effectiveness of implementing monetary policy can be maintained.

Fourthly, the issuance of e-money by both banks and non-bank entities has the potential to reduce the currency component of base money, leading to a decrease in the liability side of the central bank's balance sheet. When banks issue e-money, there remains the possibility of shifting from physical currency to deposits or reserves at the central bank. Nevertheless, in cases where non-bank entities issue e-money, an increase in e-money issuance can impact a reduction in the central bank's balance sheet component in the form of physical currency without a corresponding increase in deposits, unless the funds obtained from e-money issuance are redeposited within the banking system.

Lastly, the development of non-cash payment instruments is closely connected to the velocity of money, signifying an increased role for non-cash payment methods in replacing physical cash within economic activities. This development can pose challenges for monetary policy when relying on monetary aggregates as a target. For monetary policy employing interest rates as the primary tool, it can result in higher costs associated with monetary control.

3.2. The Efforts to Prevent the Negative Effects of Digitalization of Banking Services in Indonesia

The digitization of banking services in Indonesia comes with potential future risks that, if realized, could have adverse consequences on various entities. It's important to note that not all these risks can be predicted or fully comprehended in terms of their potential impact. Therefore, it is essential to implement more effective risk management practices. As defined by Bank Indonesia Regulation No. 11/25/PBI/2010, which deals with amendments to PBI No. 5/8/PBI/2003 concerning Risk Management Implementation, risk is characterized as the potential for loss arising from specific events. Risk management, in turn, encompasses a well-structured set of methodologies and procedures aimed at identifying, quantifying, monitoring, and mitigating the various risks that can emerge from all aspects of a bank's operations (Basyirah & Wardi, 2020).

Under the guidance of the PBI Risk Management Implementation, Bank Indonesia has categorized financial risks for commercial banks into the following groups, effective from July 1, 2010 (Cahyolaksono et al., 2021):

a. Credit risk;
b. Market risk;
c. Liquidity risk;
d. Operational risk;
e. Legal risk;
f. Strategic risk;
g. Reputation risk; and
h. Compliance risk.

Several factors contribute to the emergence of these risks. A primary factor is the absence of comprehensive regulations regarding internal control mechanisms within banks. OJK, the regulatory body responsible for overseeing financial institutions, has yet to establish appropriate regulations for monitoring internal employees of these institutions. Furthermore, OJK initiates action against violations only in response to reports or complaints from affected parties. Notably, OJK takes independent action based on secondary data sources, such as financial reports. Reputation risk, conversely, arises as a consequence of operational risks. The reputation of a bank is built upon its

performance during its operational activities. Instances of violations during these operations can erode customer trust in the bank, creating a situation where a place that should be secure for depositing money becomes insecure.

To address these challenges, OJK can implement policies mandating that all bank employees, without exceptions, submit reports regarding their activities. These reports can be generated using advanced technologies, including the creation of an integrated database designed to store these reports. Additionally, OJK can closely monitor the personal accounts of employees to detect any unusual transactions and promptly seek clarification from the individuals involved. This proactive approach is intended to empower OJK to take appropriate measures if any violations are detected in these transactions.

Certainly, besides the favorable impacts, the digitization of banking services also ushers in unfavorable consequences, compelling banks to enact precautionary measures. Various endeavors can be taken to bolster the utilization of comprehensive electronic systems, thereby augmenting operational efficiency and providing superior banking services to clients. These initiatives encompass:

a. Pertaining to the threat of cybercrimes and technological fraud compromising customers' personal data, these issues underscore vulnerabilities within systems and the absence of effective oversight. Indonesia has enacted legislation such as Law Number 27 of 2022 on Personal Data Protection and Law Number 19 of 2016 on Electronic Information and Transactions (ITE Law) to safeguard customers. Individuals can also exercise vigilance, refraining from sharing access codes/PINs with others and exercising caution when encountering internet applications that might be spam or malware, capable of pilfering personal data (OJK II).
b. Strengthening security systems through the reinforcement of IT security infrastructure by embracing cutting-edge technologies and conducting periodic updates to security systems; implementing multi-factor authentication for online banking transactions; and deploying data encryption techniques to shield customer data from cybersecurity threats.
c. Bank Indonesia shoulders the responsibility of upholding monetary stability, a task that involves utilizing interest rate mechanisms within open market operations. Consequently, it must be proficient in crafting precise and balanced monetary policies since disruptions to monetary stability exert direct repercussions on various economic facets. An overly stringent monetary policy, characterized by high-interest rates, can stifle economic activity. Conversely, a more lenient policy can breed financial instability. In the pursuit of monetary stability, Bank Indonesia has adopted an inflation targeting framework (OJK III).
d. The velocity of money wields a substantial and constructive impact on inflation within Indonesia. By wielding monetary policies like the BI Rate, Bank Indonesia can regulate inflation rates in alignment with predetermined targets. Elevated interest rates tend to incite reduced consumer spending, culminating in lower inflation levels (Zunaitin, 2017).

In conjunction with these endeavors, OJK has introduced Regulation No. 13/POJK.03/2020, an amendment to Regulation No. 38/POJK.03/2016, which pertains to the Implementation of Risk Management in the Use of Information Technology by

Commercial Banks. This regulation introduces five core refinements in its provisions (OJK IV):

a. Criteria for electronic systems suitable for placement outside Indonesia:
   This clause eliminates restrictions pertaining to the utilization of electronic data situated beyond Indonesian borders, fostering enhanced effectiveness in electronic system implementation. Additionally, it introduces criteria for electronic systems eligible for placement overseas, thus enabling banks to offer integrated services to a global clientele boasting accounts in various countries.
b. Oversight concerning the placement of electronic systems outside Indonesia:
   OJK is empowered to request banks to retain electronic systems within Indonesia should their foreign placement fail to align with the plans presented to OJK, potentially diminishing OJK's supervisory efficacy, adversely affecting bank performance, or non-conforming to regulatory requisites.
c. Implementation of action plans:
   Banks are mandated to execute action plans submitted to OJK, with administrative penalties being enforced in cases of non-compliance.
d. Utilization of data within electronic systems placed outside Indonesia:
   Banks must ensure that data deployed within electronic systems situated in external data centers and/or disaster recovery centers beyond Indonesia's borders is not repurposed for objectives other than those stipulated in regulatory frameworks. This provision aims to preclude the misuse of customer data by foreign banks.
e. Repeal of Bank Indonesia Circular on the Implementation of Risk Management in the Use of Information Technology by Commercial Banks (SEBI MRTI):
   This rescission has been enacted as the SEOJK MRTI currently supersedes the SEBI MRTI.

4. CONCLUSION

In Indonesia's banking industry, digitalization has positive and negative effects. The advent of digital banking services, which give practical transaction alternatives through fintech, increase efficiency for consumers and financial institutions, widen accessibility, boost competitiveness, and offer numerous benefits to clients, are among the positive characteristics. The potential for cybercrime and technological fraud, the emergence of security risks related to information technology usage, potential implications for monetary policies, the potential reduction of currency in base money due to e-money issuance, and the relationship between the expansion of non-cash payment methods and the velocity of money are, on the other hand, negative effects of digitalization on Indonesian financial institutions.

There are numerous preventive steps that may be taken in order to lessen the negative consequences of digitalization on Indonesian financial services. These include avoiding the sharing of PINs with others and being cautious while using online programs that can be spam or virus and threaten personal information. In addition, Bank Indonesia has implemented the inflation targeting framework and the BI Rate to control inflation rates and maintain monetary stability. Data encryption is also used to protect client information from cyber attacks. Additionally, Regulation No. 13/POJK.03/2020, which modifies Regulation No. 38/POJK.03/2016 on Risk Management in the Use of

Information Technology by Commercial Banks, was released by the Financial Services Authority (OJK).

REFERENCES

Amiruddin, Z. A. (2016). Pengantar Metode Penelitian Hukum Edisi Revisi. *Raja Gravindo Persada, Jakarta*, *171*.

Basyirah, L., & Wardi, M. C. (2020). Penerapan POAC (Planning, Organizing, Actuating, Controling) Manajemen Risiko Pembiayaan Modal Usaha Tabarok di PT BPRS Sarana Prima Mandiri Pamekasan. *NUANSA: Jurnal Penelitian Ilmu Sosial Dan Keagamaan Islam*, *17*(1), 61–74.

Benuf, K., Njatrijani, R., Priyono, E. A., & Adhim, N. (2020). Pengaturan Dan Pengawasan Bisnis Financial Technology Di Indonesia: Indonesia. *Dialogia Iuridica*, *11*(2), 46–69.

Cahyolaksono, B. A., Mahardhika, A., & Zakaria, M. I. (2021). Usulan kebijakan pencegahan risiko perbankan di era digital. *Entrepreneurship Bisnis Manajemen Akuntansi (E-BISMA)*, 18–26.

Diantha, I. M. P., & Sh, M. S. (2016). *Metodologi penelitian hukum normatif dalam justifikasi teori hukum*. Prenada Media.

M Allo, Y. R. (2020). Strategi Meningkatkan Kualitas Layanan Melalui Digitaliasi Jasa Perbankan Di PT. Bank Negara Indonesia (Persero) Tbk. Kantor Pusat Jakarta Pusat. *Ekonomika Journal*, *4*(2), 34–44.

Maulidya, G. P., & Afifah, N. (2021). Perbankan dalam era baru digital: menuju bank 4. 0. *Proceeding Seminar Bisnis Seri*, *5*, 278–288.

Moridu, I. (2020). Pengaruh digital banking terhadap nilai perusahaan perbankan: Studi pada PT. Bank Negara Indonesia (Persero) Tbk. *Jurnal Riset Akuntansi Politala*, *3*(2), 67–73.

Mutiasari, A. I. (2020). Perkembangan Industri Perbankan Di Era Digital. *Jurnal Ekonomi Bisnis Dan Kewirausahaan*, *9*(2), 32–41.

Safi'i, M. I. (2022). Pertanggungjawaban Bank Terhadap Nasabah Dalam Layanan Perbankan Digital. *WELFARE STATE Jurnal Hukum*, *1*(2), 269–302.

Salmah, A. M., & Murti, A. (2020). Dampak Digitalisasi Terhadap Peran Front Office Dalam Bisnis Perbankan. *JIMFE (Jurnal Ilmiah Manajemen Fakultas Ekonomi)*, *6*(2), 145–156.

Zunaitin, E. (2017). Pengaruh E-money terhadap Inflasi di Indonesia. *Jurnal Ekuilibrium*, *1*(1), 18–23.

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