

Development of Digital Technology in Consumer Transactions

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Abstract-The development of digital technology has brought fundamental changes to consumer transactions, particularly through the digitization of payment systems, *e-commerce*, and the integration of technology-based financial services (fintech). This transformation has not only changed people's consumption patterns but also driven financial inclusion, economic efficiency, and business model innovation. On the other hand, the digitalization of consumer transactions has given rise to new challenges, such as cybersecurity risks, personal data protection, and inequality in access to technology. This study aims to analyze the development of digital technology in consumer transactions, identify the driving factors and their impacts, and examine the challenges and future directions of its development, particularly in the Indonesian context. The research methods used were juridical-normative research and literature review of scientific journals, international reports, and regulatory policies. The study's findings indicate that digital technology has accelerated the shift in consumer transactions from conventional systems to an integrated digital ecosystem, but requires an adaptive regulatory framework and consumer protection to ensure sustainability and fairness in the digital economy.

Keywords: Digital Technology; Consumer Transactions; E-Commerce; Fintech

1. INTRODUCTION

The development of information and communication technology has become a major factor in the transformation of consumer transactions in various countries. The digitalization of transactions is characterized by the increasing use of *e-commerce*, cashless payments, and digital financial services, enabling fast, efficient, and cross-border transactions. This shift shifts the transaction paradigm from physical meetings between businesses and consumers to interactions based on digital platforms.

In Indonesia, the development of digital technology in consumer transactions has accelerated significantly along with increasing internet penetration and smartphone usage. Bank Indonesia noted that digital payment systems, particularly through the QR Code Indonesian Standard (QRIS), have driven the adoption of cashless transactions down to the micro and small business level. Furthermore, the e-Conomy SEA report shows that Indonesia is one of the largest digital economy markets in Southeast Asia, with *e-commerce* being a major contributor to digital transaction value.

However, the rapid development of digital technology has also given rise to various issues, such as transaction security, personal data protection, and consumer protection. Therefore, a comprehensive academic study is needed to understand the development of digital technology in consumer transactions and its implications from an economic, social, and legal perspective

2. RESEARCH METHODOLOGY

This study uses a juridical-normative research method with a conceptual and comparative approach. This research was conducted by examining legal norms, policies, and regulations related to digital-based consumer transactions. The data used is secondary data, which includes:

- a. Primary legal materials consist of laws and regulations and regulatory policies related to electronic payment and transaction systems.
- b. Secondary legal materials include textbooks, international journal articles, reports from international institutions (World Bank, UNCTAD), and digital industry reports.
- c. Non-legal materials in the form of statistical data and digital economic research reports.

Data collection techniques were carried out through library research, while data analysis was carried out qualitatively using descriptive-analytical methods.

3. RESULT AND DISCUSSION

3.1 Concepts and Forms of Digital Technology in Consumer Transactions

Digital technology in consumer transactions encompasses various innovations that enable the electronic exchange of value, including *e-commerce*, digital payments, and app-based financial services. Digital payments include electronic cards, digital wallets, QR codes, and instant payment systems. These innovations enable cashless transactions and reduce transaction costs.

Furthermore, the concept of embedded finance is gaining ground, where payment and financing services are integrated directly into *e-commerce* platforms and digital applications. This phenomenon demonstrates that consumer transactions are no longer standalone but are instead part of an interconnected digital ecosystem. One each other and each other related between One with others.

3.2 Driving Factors for the Development of Digital Transactions

The development of digital technology in consumer transactions is influenced by several key factors. First, advances in information technology infrastructure, particularly the internet and mobile devices. Second, changes in consumer behavior that prioritize speed and convenience. Third, support from government and regulatory policies in promoting cashless payment systems. Fourth, the COVID-19 pandemic . 19 which accelerated the adoption of digital transactions due to restrictions on physical activities.

3.3 The Impact of Digital Technology on Consumers and Business Actors

For consumers, digital technology offers ease of access, price transparency, and time efficiency. Consumers can compare products and make payments within a single platform. For businesses, particularly MSMEs, digital technology opens up broader market access and improves operational efficiency. However, there are also negative impacts, such as increased risk of digital fraud, dependence on large platforms, and the potential misuse of consumers' personal data.

3.4 Challenges and Problems

Key challenges in digital consumer transactions include cybersecurity, personal data protection, and public digital literacy. Furthermore, regulations often lag behind the pace of technological innovation, creating legal gaps in consumer protection. Therefore, regulatory harmonization and increased oversight are urgently needed.

The development of digital transactions also presents new challenges, including risks to consumer data security, law enforcement, and trust in digital systems. Policies such as Indonesia's Electronic Information and Transactions Law (UU ITE) play a crucial role in providing legal protection for consumers and regulating electronic transaction practices. However, adaptive and up-to-date regulatory implementation is necessary to address the challenges of evolving technology.

3.5 Future Development Directions

Going forward, consumer transactions are expected to be increasingly integrated with artificial intelligence, big data, and instant payment systems. Furthermore, the development of central bank digital currencies *has* the potential to transform national and global payment systems. In this context, adaptive regulations based on consumer protection are key to the sustainability of the digital economy.

4. CONCLUSION

The development of digital technology has brought significant changes in consumer transactions, both in terms of transaction mechanisms and consumer behavior. as well as has had a far-reaching impact on shopping behavior and modern business models. While digitalization of transactions drives economic efficiency and financial inclusion, it also raises new challenges related to security, privacy, and consumer protection. Therefore, synergy between the government, businesses, and the public is needed to create a secure, inclusive, and sustainable digital transaction ecosystem. It would be better to digitize transactions too This not only increases efficiency and convenience, but also encompasses security systems, robust regulations, and an understanding of dynamic consumer behavior. Going forward, the integration of technologies such as artificial intelligence, blockchain, and personalized experiences will further enrich consumer interactions within the digital ecosystem.

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