



## THE IMPACT OF DIGITAL FINANCIAL LITERACY ON CONSUMER PROTECTION, INVESTOR SECURITY, AND FINANCIAL TRANSACTIONS IN INDONESIA

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### ABSTRACT

This study examines the influence of digital financial literacy on consumer protection, investor security, and financial transactions in Indonesia. As digital financial services rapidly expand across the country, understanding the level of financial literacy among consumers becomes crucial. This study explores how adequate digital financial literacy enhances consumer protection by empowering individuals to make informed financial decisions and protect themselves against potential risks. Moreover, it investigates the correlation between digital financial literacy and investor security, highlighting the role of education in mitigating investment-related vulnerabilities. Furthermore, this study analyzes the impact of digital financial literacy on the efficiency and safety of financial transactions, emphasizing the importance of education in promoting secure and efficient financial practices. The findings underscore the need for targeted educational programs and policy initiatives aimed at improving digital financial literacy to foster a more secure and resilient financial ecosystem in Indonesia.

**Keywords:** Impact, Digital Financial Literacy, Consumer Protection, Investor Security, Financial Transactions

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### INTRODUCTION

In the contemporary digital era, digital financial literacy has emerged as a crucial competency influencing individuals' ability to access, comprehend, and utilize technology-driven financial services. The digital transformation within the financial sector, including online banking, mobile payments, and digital investments, offers significant opportunities for broader financial inclusion. However, it also presents substantial challenges, particularly for those less familiar with digital technologies (Koskelainen et al., 2023).

Digital financial literacy refers to the understanding and skills needed to use digital financial services safely and effectively. This includes knowledge of online security measures, managing personal finances through digital applications, and the ability to make informed financial decisions in a digital environment. Globally, digital financial literacy plays a key role





in empowering individuals to manage their finances, prevent fraud, and participate in the increasingly complex digital economy (Anakpo et al., 2023).

The global landscape of digital financial literacy is evolving rapidly, reflecting the broader adoption of digital technologies and the increasing importance of financial inclusion. Countries such as the United States, Canada, and nations in Western Europe have integrated digital financial literacy into their educational systems. Digital technology adoption in Asia varies widely, depending on the level of economic development, technological infrastructure, government policies, and societal readiness. Here are some key trends in digital technology adoption in Asia. China is a leader in digital technology innovation, especially in e-commerce, AI, and FinTech. The use of super apps like WeChat combines communication, shopping, and digital payments. Government programs like the Digital Silk Road support the expansion of technology to other countries. Schools and universities offer courses that cover both digital skills and financial management, preparing students for a tech-driven financial world (Kraus et al., 2021).

With widespread access to the internet and digital devices, citizens in developed countries are more likely to use digital financial services. This has led to higher levels of digital financial literacy as individuals engage with online banking, investment platforms, and digital payment systems regularly. Governments and financial institutions are actively promoting digital financial literacy through various programs and resources. For instance, the U.S. Consumer Financial Protection Bureau (CFPB) and the European Union have launched initiatives to enhance financial literacy, including digital components (Mavlutova et al., 2020). On the other hand, countries like India, Brazil, and South Africa are witnessing rapid adoption of digital financial services. Mobile banking and payment systems are particularly popular, driven by high mobile phone penetration rates.

In Asia countries, improving digital financial literacy is crucial for fostering financial inclusion, economic growth, and resilience in the digital age. This includes integrating digital financial literacy into national education curricula. Launching nationwide campaigns to raise awareness about the importance of digital financial literacy and safe online financial practices (Hasan, 2020).

The development of digital finance in ASEAN has shown significant progress in recent years. Digital finance includes services such as digital banking, electronic payments, online loans, and technology-based investments. ASEAN has seen rapid growth in the number of FinTech startups. Countries such as Singapore, Indonesia, and Malaysia are becoming centers of FinTech innovation in the region. Investment in the FinTech sector has increased significantly, with many FinTech companies attracting funding from local and international investors (Rusydia et al., 2021).

In addition, the development of the use of electronic wallets (e-wallets) and mobile payments have soared, especially in countries such as Indonesia, Thailand, and the Philippines. Platforms such as GoPay, GrabPay, and OVO have become very popular. QR code payments are becoming a common payment method in many ASEAN countries, facilitating cashless transactions.

Whereas in Indonesia, the development of digital finance has shown significant progress in recent years. Increasing use of digital wallets, digital wallets such as GoPay, OVO, Dana, and LinkAja have gained great popularity among Indonesians. They offer various features that make online and offline payments, money transfers, and personal finance management easier (Hasan, 2022). In addition, more and more traditional banks are introducing digital banking





services, such as mobile banking applications and Internet banking, which enable customers to carry out various transactions online, including fund transfers, bill payments, and purchasing financial products. The development of the FinTech industry in Indonesia has grown rapidly, with the emergence of various platforms such as P2P lending, payment gateways, crowdfunding, and InsurTech (Nurcahyo et al., 2023).

Digital finance in Indonesia has developed rapidly in recent years, bringing great benefits to society but also posing certain risks. Some of the common risks faced are data security and user privacy (Soemitra et al., 2021). Online fraud, identity theft, and cyber-attacks are threats to be aware of. The large amount of data stored by FinTech companies or digital financial services also increases the potential risk of data leaks. Data security and user privacy in Indonesia are important issues, considering the rapid growth of the digital technology and finance industry. Data breach cases in Indonesia have increased in recent years. Sensitive personal data, such as financial and identity information, can be a target for cybercriminals (Biancone et al., 2020). Data breaches can result in identity theft, fraud, or misuse of personal information. One example of a data breach case that occurred in Indonesia is Tokopedia. In 2020, it was reported that the personal data of more than 91 million Tokopedia users had been hacked and sold on the dark web. The stolen data included user names, email addresses, telephone numbers, and home addresses. This breach highlights vulnerabilities in the security and data protection infrastructure at large e-commerce companies (Rahayu & Prasetyatama, 2021). Based on the introduction above, researchers have formulated three research objectives:

- i. To explore the impact of digital financial literacy on consumer protection in Indonesia.
- ii. To study the impact of financial literacy on investor security.
- iii. To analyze the impact of financial literacy on financial transactions.

## LITERATURE REVIEW

Digital financial literacy (DFL) has become a crucial aspect of the modern financial ecosystem, especially in emerging markets like Indonesia. It encompasses the knowledge and skills necessary to effectively use digital financial services, such as mobile banking, online investments, and digital payment platforms (Takidah & Kassim, 2021). This review examines the impact of DFL on three critical areas: consumer protection, investor security, and financial transactions. Digital financial literacy refers to the knowledge and skills required to effectively use digital financial services and technologies (Khan, 2016). It encompasses an understanding of how to manage finances using digital tools and platforms, awareness of digital financial products and services, and the ability to make informed decisions about financial matters in a digital context (Hasan et al., 2021). Here are the key components of the digital financial literacy (Ozili, 2021):

- **Basic Digital Skills:** The ability to use digital devices (such as smartphones, tablets, and computers) and navigate the internet safely. Basic Digital Skills refer to the foundational abilities required to interact with digital technology effectively. Using digital devices, Understanding how to operate smartphones, tablets, computers, and other digital tools. Familiarity with device settings, applications, and troubleshooting basic issues.
- **Understanding Digital Financial Tools:** Familiarity with various digital financial tools such as online banking, mobile payment apps, digital wallets, and cryptocurrencies.





Understanding Digital Financial Tools means understanding digital financial tools used to manage, process, or access financial services electronically. This includes a variety of technologies and applications that support financial activities, such as online payments, digital investment, budget management, and app-based banking.

- **Financial Management:** Knowledge of how to manage personal finances using digital tools, including budgeting, saving, investing, and tracking expenses. Financial Management is the process of planning, organizing, controlling, and monitoring financial resources to achieve specific goals in an efficient and effective manner. Financial management involves making decisions related to money management, investment, financing, and the use of funds to ensure financial stability and growth.
- **Security Awareness:** Understanding the importance of cybersecurity measures, recognizing potential scams, and knowing how to protect personal financial information online. Security Awareness is a person's understanding, knowledge, and awareness of security threats, especially those related to information, data, and technology. It involves the ability to recognize, prevent, and respond to risks that could threaten the security of systems or assets, both personally and organizationally.
- **Digital Transactions:** The ability to conduct financial transactions online securely, including transferring money, paying bills, and shopping online. Digital Transactions (Digital Transactions) are the process of exchanging goods, services, or information that is done electronically using digital technology. These transactions involve the use of digital devices, internet networks, or electronic systems to facilitate payments or data transfers without the need for cash or physical documents.
- **Financial Decision Making:** Using digital tools and information to make informed financial decisions, such as comparing financial products, understanding terms and conditions, and evaluating risks. Financial Decision Making is the process of evaluating and selecting actions related to the management of financial resources, whether at the individual, company, or organization level. These decisions involve considerations about how to use funds to achieve financial goals, whether for investment, spending, financing, or risk management.
- **Staying Informed:** Keeping up to date with the latest developments in digital finance, including new technologies, regulations, and trends. Staying Informed is the process of actively acquiring, understanding, and staying up to date on a variety of topics, including issues related to finance, technology, business, politics, or other relevant matters. In the context of finance and business, staying informed helps individuals or organizations make smarter, more data-driven decisions and reduces the risks that arise from ignorance or ambiguity.
- **Problem-Solving:** The capability to troubleshoot and resolve issues that may arise when using digital financial services. Problem-solving is a systematic thinking process to identify, analyze, and find solutions to a problem or challenge. It is an essential skill used to overcome





various difficulties or obstacles, both at the individual level, in organizations, and in various life contexts, such as work, education, or everyday life.

Digital financial literacy (DFL) is a research topic that is increasingly popular along with technological developments and digitalization in the financial sector. Previous research has explored various aspects of DFL, including definition, measurement, impact, and factors influencing digital financial literacy. Following are some of the main findings and focuses of previous research. Research on DFL often begins by defining this concept. DFL generally covers an individual's ability to understand and use financial information delivered digitally. This includes an understanding of digital financial products, online banking services, cyber security, and financial technology (FinTech) tools (Widyastuti et al., 2024).

Individuals need to have an understanding of various digital financial products, such as Mobile Banking; the use of banking applications to manage accounts, transfer money, pay bills, etc. E-wallets (Electronic Wallets): Applications that allow storing money digitally and are used for various online transactions. Cryptocurrencies: Basic understanding of digital currencies such as Bitcoin and Ethereum and how they are used (Hasan et al., 2021).

Understanding digital financial products is an important part of digital financial literacy (DFL). The following is an explanation of various digital financial products that are generally known and used (Widyastuti et al., 2024):

1. **Mobile Banking.** Mobile banking refers to the use of banking applications that can be accessed via a smartphone or other mobile device. Common features available in mobile banking include: Account Monitoring: Check account balances, transaction transfers, and financial history. Money Transfer: Sending money between accounts, either within the same bank or between banks. Bill Payment: Pay electricity, water, telephone, internet, and other bills. Credit Card Management: View balances, make payments, and check credit card transactions. Additional Services: Opening new accounts, investment, and loan services.
2. **E-wallets (Electronic Wallets).** E-wallet is an application that allows users to store money digitally and make online or offline transactions quickly and easily. Examples of popular e-wallets include GoPay, Part of the Gojek ecosystem that allows payment for various services. OVO: Used for digital payments at various merchants and transportation services. Dana: A digital wallet that supports bill payments, money transfers, and transactions at various merchants. LinkAja: Digital financial service that supports payments, transfers, and other financial services.
3. **Cryptocurrencies (Crypto Currency).** Cryptocurrency is a form of digital money that uses cryptographic technology for security and operates independently of central banks. Some key examples include Bitcoin (BTC): The first and most well-known cryptocurrency used for transactions and storage of value. Ethereum (ETH): Platform that supports smart contracts and decentralized applications (dApps). Ripple (XRP): Designed to facilitate fast and cheap international payments.
4. **Digital Payment Systems (Digital Payment Systems).** Digital payment systems allow financial transactions to be carried out electronically. Some commonly used platforms include PayPal, an online payment service that allows money transfers and payments at





various online merchants. Google Pay: Payment platform that allows transactions via Android phones. Apple Pay: A digital payment service available to Apple device users. Alipay and WeChat Pay: Digital payment platforms that are very popular in China.

5. Investment Platforms (Investment Platforms). Digital investment platforms allow users to invest in various financial instruments online, such as Robo-Advisors, Automated investment services that provide algorithm-based investment advice, for example, Betterment and Wealthfront. Online Brokerage Accounts: Brokerage accounts allow users to buy and sell stocks, bonds, and other investment instruments, for example, E\*TRADE and Robinhood. P2P Lending: Platforms that connect lenders with borrowers directly, for example, LendingClub and Funding Circle.
6. Personal Financial Management Application. These applications help users manage personal finances more effectively. For example, Mint is an application that helps track expenses, create a budget, and manage bills. YNAB (You Need A Budget): An app that helps users create a budget and adjust spending. PocketGuard: An app that helps track expenses and save more money.

Consumer protection is a set of laws, regulations, and practices designed to safeguard the rights of consumers when they purchase goods and services. It aims to prevent businesses from engaging in fraud or unfair practices, ensure that consumers have the information they need to make informed decisions, and provide mechanisms for resolving disputes. Here are the key components and principles of consumer protection (Bakar et al., 2019):

1. Rights of Consumers. Consumer protection laws typically ensure that consumers have the following rights (Koskelainen et al., 2023):
  - Right to Safety: Protection against products that are hazardous to health or life.
  - Right to Be Informed: Access to accurate and adequate information about products and services to make informed choices.
  - Right to Choose Access to a variety of products and services at competitive prices.
  - Right to Be Heard: Consumers' interests will receive full and sympathetic consideration in the formulation of government policy and fair and expeditious treatment in courts.
  - Right to Redress: Assurance that consumers can seek and obtain satisfactory remedies for complaints and grievances.
  - Right to Consumer Education: Knowledge and skills to make informed, confident choices about goods and services.
2. Key Areas of Consumer Protection
  - Product Safety: Ensuring that products sold are safe for use and meet established standards.
  - Fair Trade Practices: Preventing deceptive, unfair, or fraudulent business practices, including false advertising and misleading claims.
  - Privacy and Data Protection: Safeguarding consumers' personal information from misuse or unauthorized access.
  - Financial Protection: Protect consumers in financial transactions, including credit, banking, insurance, and investments, from predatory practices.





- E-commerce Protection: Addressing issues related to online transactions, including data security and fraud, and ensuring transparency and fairness in digital marketplaces.
3. Regulatory Bodies and Legislation. Various government agencies and organizations are tasked with enforcing consumer protection laws. Examples include:
    - Federal Trade Commission (FTC) in the United States: Enforces laws against deceptive advertising and fraudulent business practices.
    - Consumer Financial Protection Bureau (CFPB): Regulates the offering and provision of consumer financial products or services.
    - European Consumer Organisation (BEUC): Represents consumers in Europe and works towards consumer protection at the European Union level.
    - Consumer Protection Act: Many countries have specific legislation that outlines consumer rights and protections (e.g., the Consumer Protection Act in the UK and the Consumer Rights Act in various jurisdictions).
  4. Mechanisms for Redress. Consumer protection also involves providing mechanisms for consumers to address grievances and seek redress, such as:
    - Complaints and Dispute Resolution: Systems for consumers to file complaints and resolve disputes with businesses, including ombudsman services and consumer courts.
    - Refunds and Recalls: Policies for returning defective products and issuing refunds, as well as mechanisms for product recalls to remove unsafe products from the market.
    - Class Action Lawsuits: Allowing consumers to bring legal action against companies for widespread violations collectively.
  5. Consumer Education and Advocacy. Educating consumers about their rights and how to exercise them is a critical aspect of consumer protection. This includes:
    - Public Awareness Campaigns: Informing consumers about common frauds, their rights, and how to protect themselves.
    - Educational Programs: Providing resources and training to help consumers make informed decisions and avoid exploitation.
    - Advocacy Groups: Organizations that represent consumer interests, lobbying for stronger protections and regulations.
  6. Importance of Consumer Protection
    - Ensures Fairness and Trust in the Marketplace: By holding businesses accountable, consumer protection fosters a fair marketplace where consumers can trust the products and services they buy.
    - Promotes Competition and Innovation: Effective consumer protection encourages competition as businesses strive to maintain trust and avoid penalties, which can drive innovation and improve quality.
    - Enhances Economic Stability: Protecting consumers from fraud and unfair practices contributes to overall economic stability and confidence in the market.





## RESEARCH METHODOLOGY

Researching the impact of digital financial literacy on consumer protection, investor security, and financial transactions in Indonesia is a multifaceted topic that intersects several areas of finance, consumer behavior, and regulatory practices. The significance of this research is that it tries to highlight the importance of digital financial literacy in an increasingly digitalized economy like Indonesia. The approach to this research is to use a qualitative approach. The analysis that researchers use is thematic analysis (Ishak & Rahman, 2021). Thematic analysis is identifying and analyzing patterns in the data that are the questions in this research. Thematic research is a qualitative research approach used to identify, analyze, and report patterns (themes) in data (Personal & Archive, 2018). This involves collecting and analyzing qualitative data to find the main themes that emerge from the data. This method allows researchers to understand phenomena based on participants' views and experiences in depth. In this research, researchers also tried to conduct several random interviews with several people regarding their opinions on the use of digital finance. The following steps are to dig deeper into specific topics:

1. **Literature Review on Digital Financial Literacy.** Definition and Scope: Start by defining digital financial literacy (digital financial literacy), i.e., the knowledge and skills individuals need to manage their personal finances using digital tools. Global and Local Trends: See how digital financial literacy is developing globally and in Indonesia. Find studies that show the level of digital literacy in Indonesia and fairness with consumer protection and investor security. Influence on Financial Decisions: Focus on how digital literacy influences consumer behavior in conducting online financial transactions.
2. **Key Themes in Influence on Consumer Protection.** Consumer Protection in the Digital World: Examine how digital financial literacy helps consumers to recognize and avoid digital risks, such as fraud, phishing, and false information. Consumer Protection Regulations in Indonesia: What regulations are in place in Indonesia to protect consumers in digital transactions (such as the Consumer Protection Law, OJK)? Transaction Security Education: How increasing digital literacy can reduce consumer misunderstanding of the risks involved in online transactions.
3. **Impact on Investor Security.** Digital Investment Security: Learn how digital literacy affects how investors understand and manage investment risks in the capital market, cryptocurrency, or FinTech. The Role of OJK and Supervisory Institutions: What does OJK (Financial Services Authority) do to ensure investors are educated about the potential risks of digital investment? Data Security and Privacy: This theme focuses on how increasing digital literacy also relates to understanding personal data protection and security in online investment transactions.
4. **Impact on Digital Financial Transactions.** The Development of Digital Payment Tools: Examine how digital payment platforms (such as OVO, GoPay, DANA, etc.) improve financial transactions and how digital literacy supports consumers to use them safely. Adoption of Financial Technology in Indonesia: Focus on how new technologies such as mobile banking applications, FinTech, and e-commerce impact financial transactions and how digital literacy improves consumer security and convenience in transacting. Challenges





and Opportunities for the Financial System: Discover the role of digital literacy in supporting financial inclusion in Indonesia, enabling more people to safely access digital financial services.

5. **Related Regulations and Policies.** Government Regulations: Analyze the policies that have been implemented by the Indonesian government to address challenges in digital literacy and consumer protection, such as policies on digital-based financial transactions. Government and Financial Institutions Initiatives: What are the initiatives of the OJK, Bank Indonesia, and other institutions to improve digital financial literacy among Indonesian consumers? Consumer Protection and Investor Security: Why is it important for the government and private sector to work together to improve digital financial literacy to protect consumers and investors?

## RESULT AND DISCUSSION

### Consumer protection



Figure 1: Key findings of consumer protection

**Increased Awareness:** Consumers with higher digital financial literacy demonstrate better awareness of their rights and available protection mechanisms. They are more likely to take advantage of the security features provided by digital platforms. Increasing digital financial literacy is becoming increasingly important in Indonesia, along with the development of financial technology (FinTech) and the increasing use of digital financial services. Awareness of digital financial literacy involves understanding how digital financial products and services work, as well as the ability to manage finances effectively and safely in a digital environment.

**Fraud Reduction:** More tech-savvy consumers are less likely to fall victim to digital fraud. They are more alert to signs of fraud and quicker to report suspicious activity.

**Increased Use of Security Tools:** Consumers who have good digital literacy are more likely to use security tools such as two-factor authentication and encryption in their online transactions.

#### Participant Quotes:

*"I feel safer transacting online after taking a digital financial literacy course. Now I know how to check whether a website is safe or not."* - A survey respondent.

In Indonesia, the regulations governing consumer protection regarding the impact of digital finance are those issued by the Financial Services Authority Number 22 of 2023 concerning Consumer and Community Protection in the Financial Services Sector. The general





description of this regulation is that the development of the financial services industry is increasingly complex and dynamic, and the development of digitalization of products and/or services in the financial services sector is increasingly rapid, so it is necessary to support increased aspects of consumer protection in order to realize a financial system that grows sustainably and stably and able to protect the interests of consumers and society. In this regard, POJK Number 6/POJK.07/2022 concerning Consumer and Community Protection in the Financial Services Sector needs to be replaced to adapt to current conditions in order to improve a reliable consumer protection system, increase consumer and community empowerment, and raise awareness of actors financial services business. Apart from that, in order to implement the mandate of Law Number 4 of 2023 concerning the Development and Strengthening of the Financial Sector, regulations are needed that can strengthen aspects of consumer and community protection.

The legal basis for this Financial Services Authority Regulation is Law No. 21 of 2011 and Law No. 4 of 2023 concerning the Development and Strengthening of the Financial Sector. This POJK is an umbrella provision that harmonizes various provisions governing PUJK behavior in product and/or service design, provision of product and/or service information, delivery of product and/or service information, marketing of products and/or services, preparation of agreements related to products and /or services, providing services for the use of products and/or services, and handling complaints and resolving disputes regarding products and/or services. In addition, this regulation provides strengthening and adjustment to aspects of consumer and community protection that have been regulated in other POJK.

Changes in people's transaction patterns cannot be separated from technological advances, such as the presence of smartphones. With the latest technology and strong internet support, it makes it easier for users to explore cyberspace. Data from the Indonesian Internet Service Providers Association (APJII) states that around 210 million of Indonesia's 272 million population will have internet access in 2021. A survey conducted by APJII concluded that as many as 79% of survey respondents used the Internet for online transactions, while 72% of respondents accessed the Internet for online transactions and financial services.

Non-cash payments will reach US\$ 266 billion in 2023, up 13% from last year in gross transaction value. In fact, non-cash payments in 2025 are predicted to grow by 17% to US\$ 421 billion. These non-cash payments include the use of credit cards, debit cards, prepaid cards, electronic wallets, and transfers between accounts.

In the insurance sector, digital insurance is one of the fastest-growing sectors in digital financial services, with growth of 64% annually or year on year (YoY). Projections from Google, Temasek, Bain & Co., and digital insurance could reach US\$ 400 million in 2022. In 2025, it will grow to US\$ 1 billion. Buy Now, Pay Later financial services are also experiencing strong growth, growing by 66% annually with a projection of reaching US\$ 5 billion in 2022. In 2025, Buy Now, Play Later is estimated to reach US\$ 16 billion with a CAGR of 51%.

As for fund transfers, during 2023 it will increase by 34% to US\$ 2 billion and is projected to grow by 26% to US\$ 3 billion in 2025. These data show that digital financial inclusion provides space for innovation in many sectors, including the field of finance, from digital banking and insurance to financial technology. Increasing public access to various financial products has grown tremendously.





## Investor Security

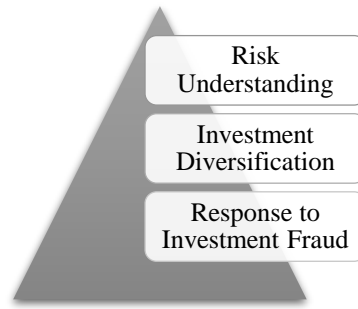


Figure 2: Key findings of investor security

**Risk Understanding:** Investors with higher digital financial literacy have a better understanding of the risks associated with digital investments. They are able to perform better risk assessments and make more informed investment decisions. **Investment Diversification:** More tech-savvy investors tend to better diversify their portfolios, leveraging various digital investment platforms to reduce risk. **Response to Investment Fraud:** They are more responsive to investment fraud schemes and more proactive in seeking information and reporting potential fraud.

Investor security in Indonesia is a critical concern given the country's growing financial markets and increasing investor participation. Some of the main aspects that influence investor security in Indonesia include:

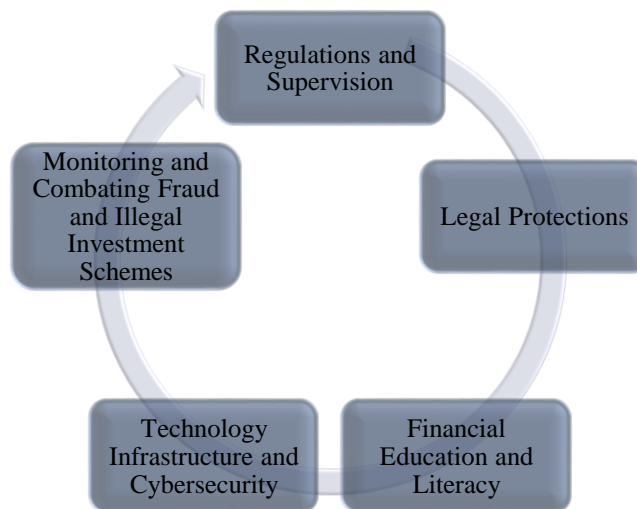


Figure 3: The main aspects

### 1. Regulations and Supervision.

- **Financial Services Authority (OJK):** The OJK is responsible for regulating and supervising the financial services sector, including capital markets, banking, and insurance. It issues regulations and guidelines to ensure transparent and safe investment practices.





- Indonesia Stock Exchange (IDX): The IDX regulates the trading of stocks and other financial instruments, ensuring transparency and fairness in trading activities.
2. Legal Protections
    - Capital Market Law: This law governs various aspects of the capital markets, including public offerings, securities transactions, and investor protection.
    - Alternative Dispute Resolution Institutions (LAPS): LAPS provides mechanisms for resolving disputes outside of courts for investors facing issues with securities companies or other financial institutions.
  3. Financial Education and Literacy
    - Financial Literacy Campaigns: The OJK and various financial institutions conduct financial literacy campaigns to enhance public knowledge about safe and prudent investment practices.
    - Educational Programs: The IDX and other institutions organize seminars, workshops, and online courses to educate the public about investment opportunities and risks.
  4. Technology Infrastructure and Cybersecurity
    - Use of Technology: Online investment platforms are increasingly popular in Indonesia. To maintain security, investment firms and financial institutions implement cybersecurity technologies such as data encryption, two-factor authentication, and monitoring of suspicious activities.
    - Cyber Awareness: Investors are encouraged to increase awareness of cybersecurity issues, including avoiding sharing personal information online and verifying the authenticity of investment platforms.
  5. Monitoring and Combating Fraud and Illegal Investment Schemes
    - Law Enforcement: The OJK and other authorities work to crack down on investment fraud and Ponzi schemes. They frequently issue warnings to the public about suspicious or unlicensed investment entities.
    - Public Reporting: Citizens are urged to report any suspicious investment activities to the OJK or other relevant authorities.

Participant Quotes:

*"I can identify investment fraud more easily now, thanks to the digital financial literacy I learned. This has really helped in keeping my investments safe."* - An investor in an in-depth interview.





## Financial Transactions

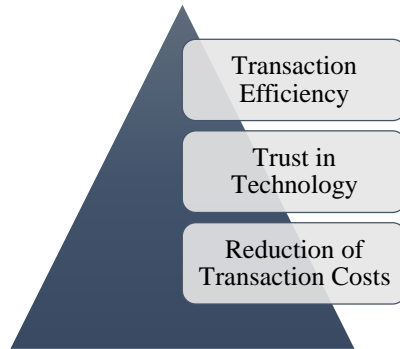


Figure 4: Key findings of financial transactions

**Transaction Efficiency:** Higher digital financial literacy increases the efficiency of financial transactions. Consumers and investors are faster and more comfortable using various digital payment tools. **Trust in Technology:** There is increasing trust in financial technology (FinTech) among those who have good digital financial literacy. They are more likely to use services such as e-wallets, mobile banking, and digital payment platforms. **Reduction of Transaction Costs:** Digitally savvy users can often reduce transaction costs by taking advantage of promotions and offers available on digital platforms. Digital financial literacy has a significant impact on financial transactions in Indonesia.



Figure 5: The main impacts





## Increased Use of Digital Financial Services

Good digital financial literacy makes people more confident and comfortable using digital financial services such as mobile banking, e-wallets, and online payment platforms. This has resulted in an increase in the number of digital transactions, reducing dependence on cash transactions. Good digital financial literacy has several positive impacts on the use of digital financial services and financial transactions in Indonesia.

### 1. Trust and Convenience in Using Digital Financial Services.

**Technology Understanding:** People who are digitally literate have a better understanding of how financial technology works. They are more familiar with the features of mobile banking, e-wallets, and online payment platforms. **Security:** Knowledge about digital security, such as how to protect personal information and avoid online fraud, makes people feel safer when using digital financial services.

### 2. Increase in Number of Digital Transactions

**Ease of Access:** Digital financial literacy allows people to more easily access and use digital financial services anytime and anywhere, without having to go to a bank or ATM. **Transaction Speed:** Digital transactions are usually faster than cash or check transactions. For example, transferring money via mobile banking or e-wallet can be done in seconds. **Lower Transaction Fees:** Many digital financial services offer lower transaction fees compared to traditional methods, which encourages users to switch to digital transactions.

### 3. Reduction of Dependence on Cash Transactions

**Practicality:** Digital financial services offer a practicality that cash transactions do not. Users do not need to carry large amounts of cash, which reduces the risk of loss or theft. **Integrated Digital Ecosystem:** Many economic sectors are now connected to digital ecosystems, including e-commerce, transportation, and public services. This encourages people to use digital transactions because they are easier and more integrated.

### 4. Financial Inclusion

**Access for All:** Digital financial literacy helps reduce gaps in access to financial services, especially in rural or remote areas that may be difficult for traditional banks to reach. Digital financial services can be accessed via smartphones, which are increasingly common across all levels of society. **Diverse Financial Products:** With a better understanding, people can take advantage of a variety of digital financial products, such as microinsurance, peer-to-peer lending, and digital savings, which they may not have previously known or understood.

### 5. Efficiency in Financial Management

**Financial Management Tools:** Many digital financial apps provide tools for managing personal finances, such as budget setting, expense monitoring, and automated financial reports. This helps users in making better and more informed financial decisions. **Reporting and Analytics:** The use of digital financial services enables easier transaction tracking and better financial analysis, helping individuals and businesses understand spending patterns and adjust their financial strategies.





## Wider Access to Financial Products

With digital financial literacy, more people can access various financial products such as digital credit, online investment, and digital insurance. This helps increase financial inclusion, especially in areas previously underserved by traditional financial institutions. Digital financial literacy plays an important role in opening access to various financial products, which in turn helps increase financial inclusion in Indonesia. Following are some of the ways in which digital financial literacy contributes to increased access to financial products and financial inclusion.

### 1. Access to Digital Credit

**Peer-to-Peer (P2P) Lending:** P2P lending platforms allow individuals and small businesses to gain access to credit that may not be available through traditional banks. Digital financial literacy helps prospective borrowers understand the application process, interest rates, and repayment responsibilities. **Microcredit:** Many FinTech platforms offer microcredit with a fast and simple process. With digital financial literacy, people can more easily understand the terms and conditions and utilize these products for their daily needs or small businesses.

### 2. Online Investment

**Mutual Funds and Shares:** Online investment platforms provide access to various investment instruments such as mutual funds and shares. Digital financial literacy allows people to understand the risks and potential profits, as well as how to manage their investment portfolios. **Cryptocurrencies:** With the increasing popularity of cryptocurrencies, digital financial literacy helps people understand blockchain technology, how to buy and sell digital assets, and the risks associated with these investments.

### 3. Digital Insurance

**Microinsurance:** Affordable and easily accessible microinsurance products via digital platforms can reach low-income communities. Digital financial literacy helps individuals understand the importance of insurance and how to choose products that suit their needs. **Health and Life Insurance:** The digital platform offers a variety of health and life insurance products that can be easily accessed. With good literacy, people can compare various products and choose the most suitable one.

### 4. Increasing Financial Inclusion in Remote Areas

**Mobile Banking and E-Wallet:** Digital financial literacy enables people in remote areas to use mobile banking and e-wallet services. This is especially important in areas that don't have many physical bank branches. **Laku Pandai Agent:** Programs such as Officeless Financial Services in the Context of Financial Inclusion (Laku Pandai) in Indonesia utilize local agents to provide banking services in remote areas. Digital financial literacy helps people understand and utilize these services.

### 5. Benefits of a Digital Ecosystem

**E-Commerce Platforms:** Many SMEs are joining e-commerce platforms to sell their products. Digital financial literacy helps business owners understand how to manage online payments and sales reports and manage their business finances. **Digital Payments for Public Services:** The Indonesian government has encouraged the use of digital payments for public





services such as paying taxes, levies and health services. Digital financial literacy makes it easier for people to utilize this service.

#### 6. Financial Education and Awareness

**Educational Programs:** Many initiatives, both from the government and the private sector, focus on digital financial literacy education. This program includes seminars, workshops, and online content that helps increase public knowledge about digital financial products. **Digital Education Platforms:** There are many educational platforms that provide information and courses on digital financial literacy, investing, debt management, and more. This helps people understand and manage their finances better.

Overall, digital financial literacy helps overcome various barriers that previously prevented access to financial products. This not only increases financial inclusion but also empowers people to make smarter and more informed financial decisions, ultimately contributing to improved overall economic prosperity.

### **Transaction Efficiency and Speed**

Digital transactions are usually faster and more efficient than manual transactions. Increased digital financial literacy enables individuals and businesses to complete transactions more quickly and reduce transaction costs. Digital transactions indeed offer significant advantages over manual transactions, primarily in terms of speed and efficiency. Here are some key points that highlight the benefits and importance of increased digital financial literacy.

1. **Speed. Instant Processing:** Digital transactions can be processed almost instantaneously, eliminating the delays associated with manual processing. This includes transfers, payments, and other financial activities. **Real-Time Updates:** Transactions are updated in real-time, providing immediate confirmation and reducing waiting times.
2. **Efficiency. Automated Processes:** Automation reduces the need for manual intervention, minimizing errors and speeding up the transaction process. **Reduced Paperwork:** Digital transactions reduce or eliminate the need for physical documentation, making processes more streamlined and less cumbersome.
3. **Cost-Effectiveness. Lower Fees:** Digital transactions often come with lower fees compared to manual processes, as they reduce administrative and operational costs. **Operational Savings:** Businesses save on costs related to staffing, processing, and maintaining physical infrastructure.
4. **Convenience. 24/7 Availability:** Digital platforms are accessible anytime and from anywhere, providing unparalleled convenience for users. **Remote Access:** Transactions can be conducted remotely, beneficial for both consumers and businesses, especially in remote or underserved areas.





## Fraud Risk Reduction

With digital financial literacy, people are becoming more aware of the potential for fraud and ways to avoid it. They are becoming more careful about providing personal and financial information and are better able to recognize the signs of fraud. Digital financial literacy plays a crucial role in reducing the risk of fraud. As people become more educated about digital financial systems, they become more adept at recognizing and avoiding fraudulent activities. Here are some key ways in which digital financial literacy helps in reducing fraud risk:

1. **Understanding Common Scams. Phishing Attacks:** People learn to recognize phishing attempts, where fraudsters try to obtain sensitive information by pretending to be legitimate entities. **Social Engineering:** Education helps individuals understand tactics used by fraudsters to manipulate them into divulging personal information.
2. **Knowledge of Secure Practices. Strong Passwords:** People are encouraged to create strong, unique passwords and to change them regularly. **Two-Factor Authentication (2FA):** Awareness of 2FA as an additional security measure significantly reduces the risk of unauthorized access.

## Increasing the Productivity of Small and Medium Enterprises (SMEs)

Digital financial literacy helps SMEs better manage their finances, including the use of accounting applications, cash management, and e-commerce platforms. This can increase their productivity and profitability. Increasing the productivity of Small and Medium Enterprises (SMEs) through enhanced digital financial literacy can be transformative.

1. **Improved Financial Management. Accounting Applications:** Digital literacy enables SMEs to utilize accounting software like QuickBooks, Xero, or FreshBooks. These tools simplify bookkeeping, payroll, and financial reporting, reducing the time and errors associated with manual processes. **Cash Management:** Effective cash flow management is critical for SMEs. Digital tools provide real-time insights into cash inflows and outflows, helping businesses avoid liquidity crises, plan for future expenses, and optimize their working capital.
2. **Enhanced Decision Making. Data-Driven Insights:** With access to digital tools, SMEs can analyze financial data to make informed decisions. This includes understanding profitability, identifying cost-saving opportunities, and forecasting future financial performance. **Budgeting and Planning:** Digital financial literacy helps SMEs create more accurate budgets and financial plans, aligning their financial resources with business goals and market conditions.
3. **Access to Finance. Digital Lending Platforms:** SMEs with digital literacy can access online lending platforms that provide faster and often more flexible financing options compared to traditional banks. This can be crucial for funding growth or managing cash flow gaps. **Alternative Financing:** Knowledge of digital finance can open up alternative financing options like crowdfunding or peer-to-peer lending, providing more avenues for raising capital.





4. **E-Commerce and Sales Management.** Online Sales Channels: Digital financial literacy extends to understanding e-commerce platforms. SMEs can expand their market reach by selling products online, managing inventory, and processing payments efficiently. Payment Systems: Proficiency in digital payment systems (e.g., PayPal, Stripe) allows SMEs to offer convenient payment options to customers, enhancing the customer experience and potentially increasing sales.
5. **Cost Reduction.** Automation: Digital tools can automate routine financial tasks, reducing the need for manual labor and lowering operational costs. Cloud Solutions: Using cloud-based financial applications reduces the need for expensive on-premise infrastructure and maintenance costs.
6. **Regulatory Compliance.** Tax Compliance: Digital tools can help SMEs stay compliant with tax regulations by automating tax calculations, filing returns, and maintaining accurate records. Financial Reporting: Enhanced digital literacy ensures that SMEs can generate accurate financial reports that meet regulatory standards, reducing the risk of penalties.

### **Increased Financial Awareness and Planning**

Digital financial literacy also contributes to increasing awareness of the importance of long-term financial planning, including savings, investment, and debt management. This encourages wiser financial behavior among the public. Digital financial literacy plays a crucial role in enhancing financial awareness and planning. Equipping individuals with the knowledge and skills to navigate digital financial tools and platforms fosters a deeper understanding of essential financial concepts and practices. Here's how digital financial literacy contributes to increased financial awareness and planning:

1. **Savings:** Digital financial literacy educates individuals about the importance of regular savings and how to utilize online tools to automate and manage their savings. This can include setting up automatic transfers to savings accounts, using apps to track savings goals, and understanding different savings products like high-yield savings accounts or certificates of deposit (CDs).
2. **Investment:** With increased digital financial literacy, individuals can better understand investment opportunities and risks. They learn how to use online platforms to invest in stocks, bonds, mutual funds, and other securities. Knowledge about diversification, risk management, and the long-term benefit of investing helps people make informed decisions that align with their financial goals.
3. **Debt Management:** Digital financial literacy helps individuals manage debt more effectively by understanding interest rates, repayment terms, and the impact of credit scores. Online tools can assist in creating debt repayment plans, consolidating loans, and monitoring credit reports. Educated consumers are more likely to avoid high-interest debt and seek out favorable loan conditions.





4. **Budgeting and Financial Tracking:** Financial literacy programs often include training on using digital budgeting tools and apps. These tools help individuals track their income, expenses, and cash flow, making it easier to stick to a budget and identify areas for improvement.
5. **Access to Financial Information:** The Internet provides a wealth of information on financial topics. Digital financial literacy enables individuals to access, evaluate, and use this information to make better financial decisions. This includes understanding financial news, trends, and resources that can affect personal financial planning.
6. **Fraud Prevention and Security:** Understanding digital financial tools also includes knowledge about online security and fraud prevention. Individuals learn to recognize phishing scams, secure their personal information, and protect their financial accounts from cyber threats.

### Supporting Government Programs

The Indonesian government has developed various initiatives to increase financial inclusion and digital literacy. Increasing digital financial literacy supports the success of these programs, such as the National Cashless Movement (GNNT) and the Indonesian National Financial Literacy Strategy (SNLKI). Increasing digital financial literacy is crucial to the success of government programs aimed at enhancing financial inclusion in Indonesia. Let's delve into how this literacy supports key initiatives like the National Cashless Movement (GNNT) and the Indonesian National Financial Literacy Strategy (SNLKI).

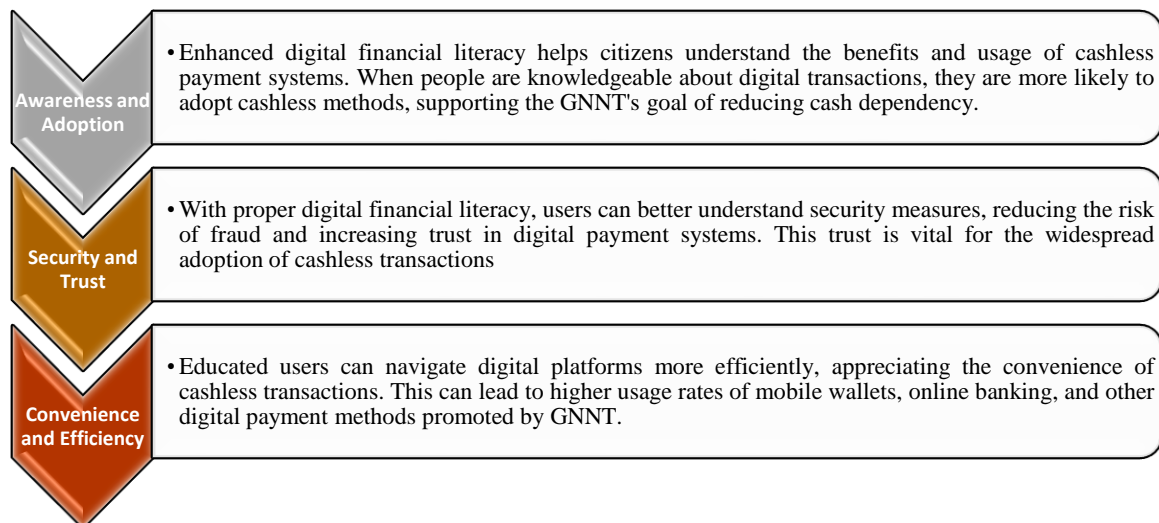


Figure 6: National Cashless Movement (GNNT)



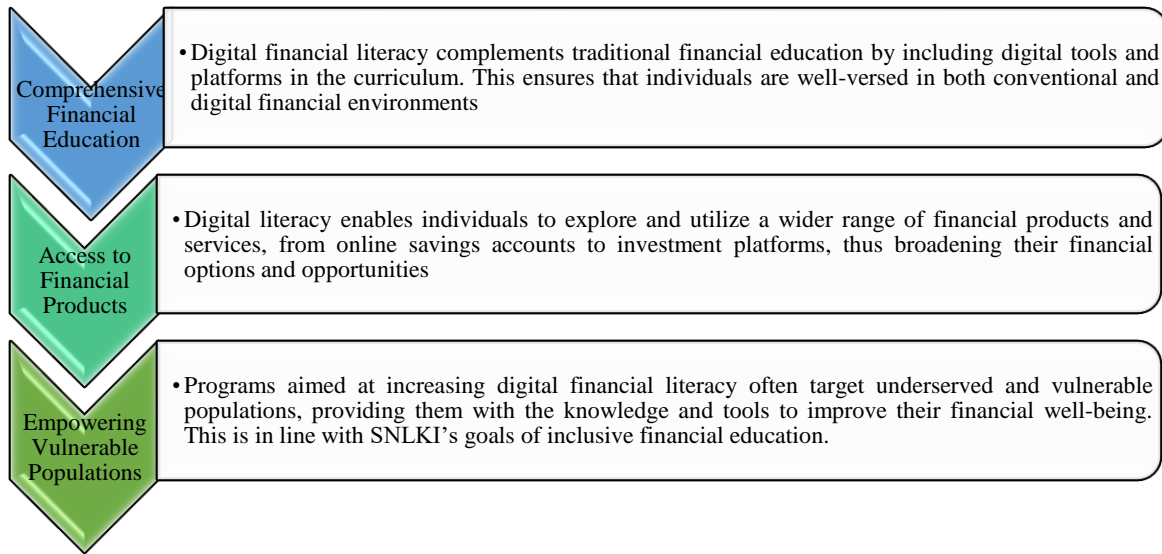


Figure 7: Enhancing the Indonesian National Financial Literacy Strategy (SNLKI)

**Socioeconomic Impact.** Increased digital financial literacy can have a positive impact on society's socio-economic well-being by providing the tools and knowledge necessary to manage personal and business finances more effectively. This has the potential to reduce economic disparities and improve quality of life. Increased digital financial literacy can indeed have a profound positive impact on society's socio-economic well-being. Here are some specific ways in which enhanced digital financial literacy contributes to reducing economic disparities and improving quality of life:





Figure 8: Increasing digital financial literacy contributes to reducing economic well-being and improving quality of life

## CONCLUSION

### Consumer Protection

The article likely examines how increased digital financial literacy among consumers can enhance their ability to protect themselves from fraud, scams, and other financial risks. This includes understanding digital financial products and services, recognizing secure and





legitimate platforms, and knowing their rights and recourse options in case of financial disputes.

### Investor Security

The article probably investigates how digital financial literacy impacts investor confidence and security. This includes knowledge about investment opportunities, understanding the risks involved, and the ability to make informed decisions. Enhanced literacy could lead to better risk management and more secure investment practices.

### Financial Transactions

The article likely addresses how digital financial literacy affects the efficiency, safety, and volume of financial transactions. This could involve understanding online banking, mobile payments, and digital wallets, leading to more frequent and secure use of these services. In conclusion, the journal article likely finds that digital financial literacy plays a significant role in improving consumer protection, ensuring investor security, and facilitating secure and efficient financial transactions in Indonesia. The findings emphasize the importance of promoting digital financial education to enhance the overall stability and trust in the financial system.

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