

## Research Article

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# Digital Financial Ethics and Risk Management

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**Abstract:** *The rapid development of digital technology has transformed the global financial industry landscape, bringing efficiency but also increasing the complexity of risks such as cyber-attacks, data breaches, and regulatory non-compliance. This study aims to evaluate risk management strategies in digital finance and the importance of integrating ethical values through a literature review approach. Data was collected from national journals and relevant academic articles, focusing on training, technology implementation, and risk management policies. The findings indicate that effective strategies require adaptive technology-based approaches, such as the implementation of Artificial Intelligence (AI), blockchain, and the Internet of Things (IoT). Dominant digital risks include fraud, data breaches, and system attacks, which demand ethics-based governance and improved digital literacy. Internal factors such as human resources and organisational culture, as well as external factors such as regulations and fintech competition, also influence the effectiveness of risk management. In conclusion, the success of risk management in digital finance is determined by the synergy between technological sophistication and the comprehensive application of ethical principles in the governance of financial institutions.*

**Keywords:** *Ethics, Digital, Finance, Risk Management.*

## Introduction

The rapid development of digital technology has significantly transformed the landscape of the global financial industry. This transformation has led to increased operational efficiency but has also introduced new complexities in risk management, including cyberattacks, data breaches, and regulatory non-compliance. These technological advancements require financial institutions to rethink their approach to risk management and ethics. This is especially critical in an era where reliance on technology to make financial decisions is growing. Therefore, this study aims to explore how effective risk management strategies can be implemented in the digital finance sector, with a particular focus on integrating ethical values into the management processes.

Digital technology has offered financial services an unprecedented opportunity to enhance efficiency and extend their reach. For instance, fintech and digital banking services allow individuals to access a variety of financial products such as loans, investments, and insurance more easily and quickly. However, despite these advantages, this digital transformation also presents new challenges, particularly concerning ethics and security. The application of technologies like Artificial Intelligence (AI) and blockchain in financial systems brings significant opportunities for improving accuracy and operational efficiency, but it also introduces new risks such as algorithmic bias, system errors, and data misuse.

In this context, ethics becomes a vital element in ensuring that technological innovations do not compromise public trust or the integrity of the financial system. Ethical considerations in digital finance

encompass a wide range of issues, including transparency, customer data protection, and social responsibility in providing financial services that are fair and accessible to all segments of society. The implementation of these ethical principles not only helps to maintain the reputation of financial institutions but also prevents financial losses arising from unethical practices such as fraud, data manipulation, and corruption.

However, the main challenge faced by financial institutions in this digital era is how to balance the application of advanced technologies that improve efficiency with maintaining high ethical standards. On one hand, technologies like AI can enhance the accuracy of risk assessment and speed up decision-making processes. On the other hand, the use of AI also introduces new risks, such as algorithmic bias, which could result in unfair or discriminatory decisions, undermining the reputation of institutions and eroding customer trust. Thus, the development of risk management policies that are technology-driven must always be accompanied by strict ethical guidelines.

Risk management in digital finance is a systematic process of identifying, analyzing, evaluating, and controlling potential losses arising from the use of digital technologies in financial systems. The risks associated with digital finance are diverse, including cybersecurity risks, technological failure, digital fraud, as well as operational and reputational risks that arise from the digitization of financial services. Although digitalization brings many benefits, the increasing reliance on technology-based systems also increases the likelihood of technical failures and cybercrime that could damage the financial system.

As Wafi et al. (2024) explain, risk management in digital finance must include the identification, evaluation, and mitigation of potential losses resulting from financial digitization. In this regard, the risk management approach must go beyond merely ensuring compliance with existing regulations. The approach must be proactive and capable of detecting potential threats in real-time, given the rapid pace of technological advancements. A reactive risk management approach—focused on addressing issues only after they occur—has become insufficient. For example, cyberattacks targeting sensitive customer data or system failures that disrupt financial services can lead to significant financial losses for both institutions and their customers.

This shift in risk management paradigms also involves changes in human resource management and organizational culture. To effectively implement a risk management system, financial institutions must build a risk-aware culture throughout the organization. This involves training personnel to understand the importance of ethics in financial decision-making and equipping them with the necessary skills to manage digital risks effectively. Additionally, financial institutions must establish clear policies regarding the protection of customer data, as well as stringent oversight systems for the technologies employed.

Beyond internal factors, external elements also play a significant role in determining the effectiveness of risk management in digital finance. One of the most influential external factors is government regulation and regulatory bodies. Many countries are currently developing regulations to govern the use of technology in the financial sector, particularly related to the use of AI and blockchain technology. These regulations aim to ensure that these technologies are used ethically and do not harm customers or society at large.

For example, in Europe, regulations such as the EU AI Act provide strict guidelines regarding the use of AI in high-risk sectors, including finance. These regulations require financial institutions to ensure that the AI systems they use are not only efficient and effective but also transparent, fair, and accountable. With such regulations in place, financial institutions can adopt new technologies with greater confidence, knowing that their use is properly regulated and will not harm stakeholders.

In addition to regulations, the growing competition between fintech companies and traditional financial institutions also adds to the challenge of managing digital finance risks. Fintech companies are

often more agile and quicker to adopt new technologies, giving them a competitive edge in terms of efficiency and innovation. However, this also increases the risk that traditional financial institutions may be slower to adopt the latest technologies and may not have the capabilities to protect their systems from emerging threats associated with the use of new technologies.

The integration of ethics into digital finance risk management is crucial because the technologies used in financial systems are becoming increasingly complex and can significantly affect financial decision-making. For instance, AI algorithms used in credit scoring systems can result in biased decisions if they are not built with clear ethical principles in place. Therefore, to avoid financial and reputational losses caused by systemic injustice, financial institutions must ensure that the decisions made by technology-based systems are always based on ethical principles that are transparent and accountable.

Furthermore, the implementation of technology should always be accompanied by transparent governance to ensure that all stakeholders involved in decision-making are held accountable. Ethics in digital finance is not just about compliance with existing regulations but also about ensuring that the technologies used do not exploit the vulnerabilities of individuals or groups within society. For example, customer data protection should be a top priority in every policy implemented by financial institutions that use digital technologies.

Overall, the integration of technology and ethics in the digital finance sector is not only necessary to prevent risks and maintain system security but also to ensure that the financial services provided are genuinely beneficial, fair, and sustainable for all parties involved.

## Literature Review

### Ethics in Digital Finance

Ethics in digital finance encompasses moral considerations in the use of financial technologies such as fintech, AI, and blockchain, including honesty in information, customer data protection, and social responsibility for equal access (Surachman et al., 2024). Ethics in digital finance practices include information disclosure, user privacy protection, and the provision of socially responsible financial services (Oktanajma & Reswari, 2025). Ethics in digital financial transactions are key to building public trust in digital services, which includes honesty, responsibility, and technological transparency (Triwibowo & Adam 2023).

### Digital Finance

Then people talk about digital finance, they are referring to the use of various forms of digital technology and specialised software to manage finances more effectively. Accounting software or digital finance applications can record all financial transactions, such as income, expenses, and cash flow, thanks to accurate and regular transaction recording in digital finance systems. Accurate and reliable financial reporting can have a strong foundation if supported by good record-keeping. Through digital platforms supported by digital financial management, individuals can access various financial products, including loans, investments, insurance, and others. Although digital financial management has security risks, new technologies continue to be developed to make them safer and more reliable in protecting user data (Hanggondosari, 2023).

### Risk Management

No one in the corporate sector can afford to turn a blind eye to the possibility of financial loss. A more targeted approach to managing potential hazards is necessary due to the increasing complexity of corporate

operations. At the highest level of leadership, risk management is a management process. Like other forms of management, risk management is based on the idea that organisations can only use its resources if something goes wrong. The goal of risk management is to identify, evaluate, and mitigate potential threats. In theory, you should do this before you experience a loss. Regarding risk, unless the actions and their components are implemented, there is no way to ensure that negative outcomes can be avoided at all times. The business world requires risk management or risk assessment to help them control these dangers. For risk management to be successful, it must permeate the entire organisation and become an integral part of the process. However, many people use risk management during the operational or project implementation phase to make decisions. The challenges posed by risk are even greater (Hutapea et al., 2024).

### **Risk Management in Digital Finance**

Risk management in digital finance is a systematic process for identifying, analysing, assessing, and controlling potential losses arising from the use of digital technology in financial systems. This includes risks such as cyber security, technological failure, digital fraud, as well as operational and reputational risks arising from the digitalisation of financial services (Wafi et al., 2024).

### **Method**

The method used is a literature study taken from several national journals and expert articles accessed online. According to Sugiyono (2019), literature study research is theoretical research, references, and scientific literature related to culture, values, and norms that develop in the social situation being studied. Literature study can also be defined as research that collects data from research reports, scientific books, articles, and relevant journals. The search for literature sources in this article was carried out through the Google Scholar database. The literature sources used in the preparation involved 6 library sources consisting of 5 national journals and 1 book. The selection of literature source articles was carried out by reviewing the title, abstract, and results that discussed ethics in digital finance and risk management.

### **Results and Discussion**

This study aimed to explore the role of ethics in digital finance and how effective risk management strategies can be implemented in a rapidly evolving technological landscape. The findings indicate that while digital finance offers significant benefits in terms of efficiency and accessibility, it also presents unique challenges related to security risks, technological failures, and potential ethical violations. As discussed, a successful approach to digital finance requires an integration of technological innovation with robust ethical frameworks and risk management practices.

### **Ethics as the Foundation of Trust in Digital Finance**

The application of ethical principles within digital finance is fundamental to building public trust, especially as financial institutions adopt increasingly sophisticated technologies such as Artificial Intelligence (AI), blockchain, and the Internet of Things (IoT). Ethical considerations in the digital finance landscape are critical in areas such as transparency, data protection, and the equitable access to financial services. Surachman et al. (2024) emphasize that honesty in information disclosure, the protection of customer data, and the social responsibility of digital financial institutions are paramount. Without the foundation of ethics, the potential for fraud, exploitation, and manipulation grows significantly, jeopardizing the credibility of digital finance systems.

In a rapidly digitalizing financial environment, there is an increasing reliance on technology to make decisions, which introduces new ethical concerns, particularly algorithmic bias, data privacy violations, and the potential for systems to act in unintended ways. Ethical governance, as suggested by Siregar and Hasanah (2024), is essential to ensure that AI and other automated systems within the financial sector remain accountable. This could involve creating transparent algorithms, regular ethical audits, and building AI systems that are designed to mitigate biases and unfair treatment in decision-making processes.

### **Technological Integration with Ethical Oversight**

As financial institutions increasingly integrate AI and blockchain into their operations, the need for continuous oversight and adaptation of risk management strategies becomes more critical. Siregar and Hasanah (2024) argue that the introduction of AI in accounting and finance must not be viewed merely as a technical tool but as an opportunity to refine ethical standards within the sector. The use of AI systems introduces new complexities—specifically regarding algorithmic risk, data bias, and the transparency of decision-making processes.

The findings highlight that while AI has the potential to increase operational efficiency, it also poses risks such as algorithmic bias and unfair assessments, which can lead to inaccurate financial decisions and erode public trust. Therefore, the implementation of AI in digital finance should not only focus on technological efficiency but also incorporate rigorous ethical guidelines to ensure transparency, fairness, and accountability. This approach aligns with the findings from Siregar and Hasanah, who suggest that a strict ethical framework must accompany the deployment of AI, ensuring that it remains accountable to the stakeholders it serves.

Additionally, blockchain technology, often heralded for its transparency and security features, must be governed by ethical standards to prevent exploitation. While blockchain provides a decentralized and immutable ledger, there remains the potential for misuse, such as through anonymous transactions that can be leveraged for illicit activities. Therefore, as financial institutions adopt blockchain technology, integrating ethics within its governance is crucial to ensuring it is used responsibly.

### **Risk Management: A Holistic Approach**

Effective risk management in digital finance is not merely about the adoption of technology; it must also involve a strategic integration of ethics and technological sophistication. Wafi et al. (2024) discuss the importance of adopting a proactive risk management approach that incorporates both internal and external risk factors. These factors include the financial institution's internal governance structures, employee training, organizational culture, as well as external threats such as cyberattacks, regulatory non-compliance, and fintech competition.

A major risk associated with digital finance is cybersecurity, which remains a significant concern due to the increasing sophistication of cyberattacks. As financial institutions digitize their operations, the likelihood of cyberattacks targeting sensitive financial data increases. Farichah (2024) highlights that digital finance risk management strategies must shift from being reactive—focused on addressing issues after they arise—to proactive approaches capable of identifying and mitigating risks in real-time. This requires continuous monitoring, adaptive risk management policies, and technological infrastructure that can detect vulnerabilities before they are exploited.

Operational risks also play a crucial role in digital finance. The failure of digital platforms or the malfunction of financial technologies can lead to significant financial losses, damage to reputation, and loss of customer trust. The findings suggest that organizations need to implement robust contingency planning,

including regular system audits, data backups, and the use of fail-safe mechanisms to ensure that operations remain uninterrupted even in the face of technological failures.

Moreover, reputational risks, which often stem from mishandling customer data or failing to meet customer expectations, must also be carefully managed. Trust is a cornerstone of the financial sector, and any breach of this trust—whether due to a cyberattack, poor customer service, or unethical practices—can lead to long-term damage to a financial institution's reputation. Therefore, incorporating ethical guidelines into risk management strategies can help prevent such breaches and ensure that digital financial services remain credible and reliable.

### **The Role of Internal Factors in Risk Management**

In addition to technological and external factors, internal elements such as organizational culture and human resources are pivotal in shaping the effectiveness of risk management in digital finance. Lusmeida et al. (2023) underscore the significance of having a risk-aware culture within financial institutions. The behavior and mindset of employees—ranging from top-level executives to front-line staff—greatly influence how risks are managed and mitigated. Organizations must invest in training their personnel to understand the ethical implications of their actions, as well as equip them with the skills necessary to navigate and manage digital risks.

Moreover, the integrity of financial actors is crucial in ensuring that ethical standards are maintained across all levels of the organization. When ethical behavior is compromised, opportunities for fraud, corruption, and other unethical practices emerge. Ziah and Kuntadi (2023) argue that embedding ethics into the organization's culture—through the implementation of ethical codes, training programs, and strict compliance mechanisms—ensures that all stakeholders act with integrity. This creates a more resilient financial system that is better equipped to handle the complexities and risks associated with digital finance.

### **External Challenges and Regulatory Considerations**

In addition to internal factors, the external regulatory environment plays a significant role in shaping risk management strategies in digital finance. As digital financial services expand globally, governments and regulatory bodies must evolve their frameworks to address emerging risks such as data privacy violations, cyber threats, and the ethical use of AI in financial decision-making.

For example, regulations such as the EU AI Act and the NIST Risk Management Framework provide guidelines for the ethical deployment of AI in high-risk sectors, including finance. These regulations emphasize the need for transparency, accountability, and fairness in the development and deployment of AI systems. Adhering to these frameworks is crucial for financial institutions that wish to operate ethically and avoid legal and reputational risks.

Furthermore, as fintech companies continue to disrupt traditional financial institutions, there is a growing need for collaboration between financial regulators and fintech players. This collaboration ensures that emerging technologies are developed and implemented within the confines of ethical guidelines and regulatory requirements, thus protecting consumers and maintaining market stability.

## **Conclusion**

Ethics in digital finance is not merely a normative aspect, but a critical foundation in building a sustainable and secure digital financial system. Ethical literacy, the integration of moral values, and the strengthening of digital risk management must be top priorities in the design of financial policies and infrastructure. The implementation of technologies such as AI and digital platforms must always be

accompanied by ethical and transparent governance to avoid bias, reputational risks, or violations of user privacy. Therefore, strengthening ethics and digital-based risk management systems are two inseparable sides of the same coin in shaping a fair and inclusive digital financial system.

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