

The Impact of Blockchain in Financial Industry: A Concept Paper

Alya Ayuniey Mohd Fairah, Nurul Najihah Hussin, Nur Aina Arisha Jamali, Mazurina Mohd Ali*
Faculty of Accountancy, Universiti Teknologi MARA, Cawangan Selangor, Kampus Puncak Alam, Malaysia
*mazurina@uitm.edu.my

Abstract: Blockchain is a cutting-edge technology gaining fast recognition as a transformative drive with the possibility to reform many sectors. This concept paper seeks to understand the influence of blockchain on the financial industry, shedding light on its key features, benefits, and challenges. Specifically, this paper explores whether blockchain technology promotes cost-saving in the financial industry. Additionally, this paper discusses the implications of blockchain, particularly regarding its security. It emphasizes the need for collaboration between industry stakeholders, regulators, and technologists to harness the blockchain's full potential while addressing the associated challenges. As blockchain continues to evolve and mature, its effect on the financial industry is expected to increase, reforming the way financial transactions are conducted and recorded in the digital age. This study contributes a holistic approach to expanding the transformative potential of blockchain in the financial sector.

Keywords: *Blockchain; collaboration; decentralization; security; technology; transaction*

1. Introduction

Blockchain used in the financial industry has a significant influence on users and financial institutions, including banks (Mishra & Kaushik, 2023). Users can perform transactions using contemporary systems of electronic payments that act as trusted central third parties and process payments that are secured. Blockchain has made trading incredibly convenient because users, including traders, can now effortlessly deposit funds from one bank account to another without the hassle of converting physical money to gold for transfer purposes (Ullah et al., 2022). This convenience is due to the complex process of transferring funds. Problems could arise from converting money into gold when transferring funds from the payer's bank to the payee's bank. Transferring funds between bank accounts becomes complex as the number of banks involved in fund transfers grows. In response, banks are driven to find methods to enhance the efficiency of the system. One such explanation has been the rise of digital currencies, such as Bitcoin, which utilize blockchain technology to combine decentralized payment systems with new forms of currency (Shaikh et al., 2024). Blockchain has played a vital role in assisting the financial industry in ensuring transparency, democracy, decentralization, effectiveness, and safety by offering a secure, verifiable, and stable method for recording and transmitting data (Marques & Pereira, 2023). When the financial industry is unable to provide transparent service, economic growth slows since fraudulent practices are widespread (Mishra & Kaushik, 2023).

The decentralized nature of blockchain, a key attribute, enhances the security of everyday transactions by maintaining an unchangeable record of all users (Dewang et al., 2023). Consequently, system users' sensitive information remains confidential and protected from unauthorized access. The primary goal of this study is to gain insight into the effects of blockchain on the financial industry. Specifically, the aims include (i) ascertaining whether blockchain is a cost-effective technology in the financial industry; (ii) exploring the potential benefits of implementing blockchain technology in the financial industry; and (iii) assessing the safety of utilizing blockchain technology in the financial industry. This study deliberated to enhance understanding of the effects of blockchain technology in the financial industry, investigating its ability to shape the future of the sector. Blockchain technology can improve the financial industry, specifically banking, by making it easier to track data shared between businesses. This innovation not only presents opportunities for significant cost savings but also has the capacity to reduce the susceptibility to security attacks. Security is one of the abundant benefits of adopting blockchain technology in the banking industry because it secures the transaction ledger via encryption (Javaid et al., 2022). The security is guaranteed by the system's incapability to alter transactions after they are recorded since a unique code is required to access the data. Thus, embracing blockchain in the financial industry can give substantial developments to security, efficiency, productivity and transparency.

Problem Statement: Implementing blockchain in the financial sector presents hurdles, particularly concerning security, as blockchain systems are susceptible to vulnerabilities. The risk of attacks from undisclosed self-

interested individuals poses a threat to the reliability of blockchain. Various incidents have underscored that blockchain's safety is not perfect (Chang et al., 2020). Chang et al. (2020) note that the concerns were unfortunately demonstrated by the infamous Mt. Gox case, where the world's foremost Bitcoin exchange fell victim to theft. He further noted that, on February 28th, 2014, Mt. Gox announced a staggering loss of 850,000 bitcoins from both user and company accounts, resulting in a devastating financial hit of 467 million US dollars.

Additionally, blockchain faces issues related to privacy leakage. Blockchain technology could make artificial addresses that stand in for real user profiles. This method seeks to protect users' identities by lowering exposure and strengthening security (Yang et al., 2023). Unfortunately, blockchain could not prevent the transactional data leak, since all information concerning business and transactions is freely available to everyone (Kosba et al., 2016). Barcelo (2014) demonstrated that transactions made through Bitcoin can uncover personal information about the user. This raises worries about privacy as it could compromise the security of user data. Mischievous actors may obtain users' account passwords or other personal information, allowing them unauthorized access to accounts. This can lead to financial losses if funds from bank accounts or other assets are compromised without the user's knowledge. The concern is continuously unsolved regardless of various efforts to enhance blockchain implementation (Tyagi et al., 2023).

Many studies have focused on how integrating blockchain technology can influence the financial sector, specifically the banking industry. These studies aim to elucidate the complex functioning of blockchain and investigate its various applications in the banking business model. The present operating system in the banking sector is causing concern because of its recurring nature, huge time requirements, and cost. Major banks and central banks are progressively exploring blockchain technology as a practical solution for their current issues in the shift of the financial environment (Khadka, 2020). The pressing question remains: is the integration of blockchain technology truly necessary in the financial industry? This study aims to address the existing gap by exploring the possible effects of integrating blockchain technology in diverse financial institutions, especially banks.

2. Literature Review

Blockchain: Blockchain is a system for managing data that records transactions between multiple parties (peers) securely and transparently. Contrasting with traditional databases, blockchain is not centralized, meaning that there is no single entity ruling or validating the data. Via its sophisticated technology, participants can approve and validate transactions with no reliance on a middle authority like a bank. These potential initiates infinite potential activities, such as trades and fund transfers. The procedure begins with a transaction request, which is then shared with a network of computer nodes, making blockchain an effective and uniform approach to conducting transactions. In a peer-to-peer network, nodes use reliable algorithms to validate transactions and verify user identities. Validated transactions can contain digital currency, records, or varied data. Upon validation, these transactions are merged with others to form new data blocks. These blocks are securely attached to the blockchain, making them irreversible and unalterable. This concludes the transaction process effectively.

Blockchain in its early application was established for Bitcoin cryptocurrency (Nakamoto, 2009). Blockchain was introduced as a virtual currency system that could alter middle authorities to issue money units and confirm transactions. Blockchain permits individuals to make transactions and traders to buy or sell shares from the comfort and convenience of their home or office at a time that suits them best. According to Lim (2021), 56 digital currency firms had registered with Bank Negara Malaysia in 2021.

Blockchain and the Financial Industry: Blockchain is different from the traditional method in the financial industry. One benefit is the unlimited customer service time frame in blockchain technology. Participants can make transactions at any time. In the traditional bank method, there is a limit in the customer service time frame. Participants can only do the transaction or withdraw their money during office hours when accountants are working in the bank. However, digital models like blockchain have an immediate speed of customer service due to the advanced technology. The traditional method needs the act of a middleman, such as a bank, to authorize the transaction. Therefore, there are many steps to complete the transaction because users or participants need to go to the bank to get approval. Next, the scope of service by using blockchain is unlimited because the technology can be accessed anywhere. If a traditional method is used, there is a limit on the branch

network and the workforce. Therefore, a lot of time, money, and energy are required to complete a simple transaction compared to using blockchain technology.

In the Islamic finance industry nowadays, there are many applications for blockchain technology, such as blockchain used in smart contracts, zakat collection and distribution, smart sukuk, and waqf utility (Ardana et al., 2023; Kamaruddin et al., 2023). Every Islamic financial institution must prioritize adherence to Sharia law regarding any novel technology or mechanism, such as blockchain or its various applications (Muryanto, 2023). While the implementation of smart contracts is beneficial for financial institutions, it is imperative to evaluate thoroughly the contract process and correct sequence and establish a mechanism for setting and approving conditions and executing them (Moro-Visconti & Cesaretti, 2023; Sowmya et al., 2024). This evaluation is crucial in safeguarding the legality of financial transactions within Islamic financial institutions (Harahap et al., 2023; Qudah et al., 2023). However, Sharia compliance faces challenges due to the absence of Shariah standards, the shortage of qualified experts, inconsistent rulings and interpretations of fatwas, and the absence of central Shariah supervision (Alaeddin et al., 2021).

3. Discussion

Blockchain is a Cost Saving Technology in the Financial Industry: Contrasting to the conventional method, the use of blockchain technology brings about a significant decrease in costs and value transfers, revolutionizing the way financial processes are managed in comparison to conventional methods (Dong et al., 2023; Naher & Uddin, 2023). For example, conventional banks, as a centralized authority, invest a large amount of funds to prevent technical problems, which demonstrates that conventional methods are more vulnerable and more prone to failures. Integrating blockchain technology in the financial sector could enhance a decentralized system, distinguishing it from conventional approaches. Practically, with the use of blockchain automation and a decentralized ledger, the transactions are more transparent, and the handling is more cost-effective. Therefore, the need for extreme expenditure can be reduced (Moro-Visconti & Cesaretti, 2023). The blockchain model not only lowers the costs but also improves security measures for preventing and detecting fraud (Rane et al., 2023).

In conventional payment method which is characterized as a centralized structure, involves several intermediaries, currency conversions and fees. This leads to transaction lags and substantial costs. For example, the fee charges form a modest portion of any transactions. Therefore, utilizing blockchain technology can minimize intermediary costs by reducing transaction and operational expenses throughout payments and settlements. In other words, blockchain technology eliminates third parties with costly broker fees (Khadka, 2020). Additionally, due to the decentralized system, blockchain also eliminates the requirement for a central authority or intermediary. Therefore, blockchain does not rely on intermediaries to verify and complete the transactions. This is giving advantage and remarkably helpful for cross-border transactions, which frequently require the involvement, communication, and coordination among intermediaries. Through the blockchain system, the procedure is expedited and more cost-effective by eliminating the need for third-party communication and coordination, as a result reducing costs and saving time.

Without blockchain technology, financial institutions, particularly banks, rely on the SWIFT system (Society for Worldwide Interbank Financial Telecommunications) to handle and oversee international money transfers. Through the SWIFT system, banks can efficiently and securely transfer financial information using encrypted messages (Mishra & Kaushik, 2023). It is broadly regarded as the standard for international payment transactions for its extraordinary safety and reliability. However, using services such as the SWIFT system may lead to transaction lags that may vary between 1 to 5 working days. Therefore, blockchain technology may cut the associated charges with international transactions by using innovative solutions that eliminate the need for a third party. This ability directs to automatic payment records and accounting transactions, resulting in decreased operating expenses (Khadka, 2020; Sachitra & Dayaratna, 2023).

The Implication of Blockchain Technology in the Financial Industry: The introduction of blockchain technology has brought forth significant improvements to the financial sector of Malaysia. The major impact of incorporating blockchain technology into the Malaysian banking industry is perceived in the active application and use of this technology by commercial banks. By employing blockchain's security, transparency, and

immutability, financial institutions can eliminate the need for intermediaries and streamline their centralized banking system (Gupta et al., 2023). The decentralization feature of blockchain transforms the way transactions are conducted within the industry. Using blockchain technology, each transaction within the network must be authorized by its users. This feature draws more interest to blockchain technology among financial institutions and investment banks. Furthermore, blockchain has accelerated the process of transferring funds from one account to another. This feature also forces reformation in the traditional banking industry as a result of market competitive advantage and consumer demand. As technology advances, the ability of blockchain to change the financial industry becomes apparent (Satish et al., 2023). Blockchain has the potential to transform the current financial landscape by introducing novel instruments and techniques that emphasize internet connectivity and speed. The need to keep massive volumes of data in financial institutions necessitates the development of creative and advanced technologies for securely storing and transmitting information. As a result, blockchain might provide a reliable and secure platform for data storage and transfer. Blockchain has the ability to eventually replace traditional financial systems to successfully develop asset transfers and enhance global financial infrastructures (Cocco et al., 2017).

Furthermore, blockchain technology functions as a valuable tool for managing risks. Blockchain technology can aid financial institutions in effectively detecting suspected fraudulent transactions. This can be accomplished by consistently observing and monitoring users' behaviors (Zidan et al., 2023). The implementation of anti-money laundering (AML) regulations plays an important role in combating a wide range of illegal activities, including financial fraud and corruption. These regulations are essential for ensuring the integrity of financial systems and prohibiting the flow of illegal funds. Businesses utilize Know Your Customer (KYC) practices to establish long-term relationships with their customers while also reducing risks. Blockchain technology's integration into Industry 4.0 is crucial for developing AML and KYC processes in financial institutions (Dhanabalan & Sathish, 2018). Blockchain technology is an effective tool for verifying and tracking money transfers since it accurately tracks financial transactions using permanent timestamps. This is because each blockchain transaction is entered into a shared ledger that contains all participants' transaction history and credit information. All data on the blockchain is visible and available to each node in the network. This permits all nodes to have a full record of transactions, confirming secure and efficient data sharing. Consequently, there is less demand for onerous and expensive audits. This is because each blockchain transaction is entered into a shared ledger that contains all participants' transaction history and credit information. All data on the blockchain is visible and available to each node in the network. This permits all nodes to have a full record of transactions, confirming secure and efficient data sharing. Consequently, there is less demand for onerous and expensive audits.

Blockchain in the Financial Industry: Is it Safe: Blockchain decentralized, immutable ledger is a feature that has the potential to revolutionize how records are kept. Blockchain technology applies to practically every industry, especially banking. It has the potential to lower operational costs and change the banking system's backend significantly. Blockchain would be necessary to address current challenges faced by banks today. Its advantages include (i) its efficiency to streamline processes through blockchain automation; (ii) its capability to reduce transaction costs by eliminating intermediaries and automating tasks; (iii) its immutable and verifiable records which can enhance accountability, transparency and trust; and (iv) its decentralization feature which can reduce reliance on third parties, encouraging independence and data security. However, there are issues to be considered regarding blockchain technology, such as whether it is safe to be implemented in the financial industry.

Regulation is a pressing concern in the world of blockchain. As a decentralized system, the question of how best to govern it has sparked intense debate among regulators. While achieving a fully decentralized system may be near impossible, some level of oversight is necessary, especially for financial institutions (Mishra & Kaushik, 2023). Although governments have put effort into establishing rules and regulations for blockchain, its legal status remains unclear. The concern is who will assume responsibility during crises. Since blockchain is a decentralized system, the effect can yet be more severe because no appointed leader to direct through struggling times. Besides, the lack of legislation may leave the dispute resolution between the two financial entities unsure, delaying immediate settlement (Trivedi, 2023).

Even though blockchain technology has been acknowledged as the safest technology of our time, blockchain

still raises issues around data security and privacy. On one hand, the concern is notably true for public blockchains where all parties have access to the data, raising the risk of data misuse and fraud. On the other hand, private blockchains offer a more secure and private alternative to address these concerns (Gupta et al., 2023). Given the seriousness of the issue, financial institutions have raised solemn questions about the security and privacy of blockchain technology. Thus, it is essential for complete and detailed testing to be conducted before adopting blockchain technology (Mishra & Kausjik, 2023). According to a technological evaluation conducted by the Massachusetts Institute of Technology (MIT), about USD\$2 billion in cryptocurrencies have been stolen since 2017. Security concerns are growing as a result of the frequent attacks on popular exchanges. A hacker needs to acquire the majority of mining power to gain control of a network, a concept commonly referred to as the 51 percent assault (Mollajafari & Bechkoum, 2023). Further investigation of this topic is crucial due to the potential consequences it may present, as indicated by Orcutt (2019)

Multi-factor authentication is necessary to safeguard blockchain systems from malicious attacks by performing several security checks. The use of multi-factor authentication verifies the legitimacy of users by implementing several verification methods. Furthermore, the integration of multiple authentication phases strengthens security and lowers the possibility of unauthorized system access. It protects sensitive user information against malicious breaches. Multi-factor authentication enhances security by allowing only authorized individuals to perform transactions. If unauthorized access takes place, the system records important data, including IP addresses, locations, and timestamps. This information helps in the investigation and any legal action brought against the offender.

On the other hand, specialized blockchains with tightly regulated governance, known as permissioned blockchains, only grant network access to authorized individuals who have received preapproval and meet specific criteria (Liu et al., 2019; Yawalkar et al., 2023). This closed network maintains the confidentiality of information to prevent it from falling into unauthorized hands. Restricting data access reduces the possibility of data breaches, hence improving secrecy and privacy through permissioned blockchain usage. Permissioned blockchains are crucial in fostering transparency, competency, and efficiency as blockchain technology becomes widely accepted, specifically in the financial sector.

4. Conclusion

Blockchain technology has brought about a significant transformation in the banking sector by revolutionizing the user experience. It has made financial transactions more accessible, efficient, and simple. With the help of innovative electronic payment systems, users can now conduct smooth transactions, which has simplified trading. While blockchain has enormous potential, it also has its challenges, such as potential system weaknesses leading to security breaches and concerns about sensitive data protection. Further research is needed to explore the cost-saving benefits of blockchain technology compared to traditional finance. The most significant advantage of using blockchain technology is that users can verify transactions without the need for clearance from a central authority, such as a bank. This approach is significantly different from conventional methods used in the financial industry. Blockchain technology eliminates the need for time-consuming bank trips, allowing clients to complete transactions quickly, inexpensively, and without the hassles of traditional banking operations.

Blockchain technology offers substantial cost savings compared to traditional banking systems and enables continuous value transfer. Unlike banks that heavily invest in maintaining and building centralized databases, blockchain operates on a decentralized network, which eliminates these costs. The costs associated with centralizing terminal maintenance can also be significant. Conversely, the decentralized ledger and automation of blockchain technology can lead to a reduction in costs while maintaining accountability. Blockchain technology can significantly reduce costs when it comes to managing financial transactions. However, implementing it in the financial sector requires careful consideration. While it offers excellent security, there are still challenges to overcome. Financial institutions must still be monitored by regulatory organizations, making complete decentralization both intriguing and challenging. Although blockchain is considered highly secure, concerns about data privacy and safeguarding personal information must be addressed

Apart from the regulators, industry stakeholders and engineers play a crucial role in maximizing the potential

of blockchain technology and addressing its problems. Collaborative efforts between industry stakeholders and technologists are essential in establishing industry standards and best practices for blockchain technology, which can help enhance security and reliability in various blockchain systems. Standardization of blockchain technology can significantly benefit the industry and pave the way for its widespread adoption.

References

- Alaeddin, O., Al Dakash, M. & Azrak, T. (2021). Implementing the blockchain technology in Islamic financial industry: opportunities and challenges. *Journal of Information Technology Management*, 13(3), 99-115.
- Alsalm, M. S. H. & Ucan, O. N. (2023). Secure banking and international trade digitization using blockchain. *Optik*, 272, 170269.
- Ardana, Y., Khoffah, A. N. & Lestari, D. P. (2023). Dynamics of Islamic Banks in the Digital Transformation Era. *Al-Mashrof: Islamic Banking and Finance*, 4(1), 23-46.
- Barcelo, J. (2014). User privacy in the public Bitcoin Blockchain. *Latex Class Files*, 6(1), 1-4.
- Bhatti, M. G., Shah, R. A. & Chaudhry, M. A. (2022). Impact of blockchain technology in the modern banking sector to exterminate financial scams. *Sukkur IBA Journal of Computing and Mathematical Sciences*, 6(2), 27-38.
- Chang, V., Baudier, P., Zhang, H., Xu, Q., Zhang, J. & Arami, M. (2020). How Blockchain can impact financial services—The overview, challenges, and recommendations from expert interviewees. *Technological forecasting and social change*, 158, 120166.
- Cocco, L., Pinna, A. & Marchesi, M. (2017). Banking on Blockchain: Costs savings thanks to Blockchain Technology. *Future Internet*, 9, 2-20.
- Dewang, R. K., Yadav, M. P., Awasthi, S., Raj, O., Mewada, A. & Bawankule, K. L. (2023). Data secure application: an application that allows developers to store user data securely using blockchain and IPFS. *Multimedia Tools and Applications*, 1-27.
- Dhanabalan, T. & Sathish, A. (2018). Transforming Indian industries through artificial intelligence and robotics in Industry 4.0. *International Journal of Mechanical Engineering and Technology*, 9(10), 835-845.
- Dong, S., Abbas, K., Li, M. & Kamruzzaman, J. (2023). Blockchain technology and application: an overview. *PeerJ Computer Science*, 9, e1705.
- Gupta, A., Kumari, A., Gupta, A., Pal, C. K. & Agnihotri, S. (2023). Impact of Blockchain technology in the Indian Banking and Financial sector. *European Economic Letters (EEL)*, 13(5), 571-579.
- Javaid, M., Haleem, A., Singh, R. P., Suman, R. & Khan, S. (2022). A review of Blockchain Technology applications for financial services. *Bench Council Transactions on Benchmarks, Standards and Evaluations*, 100073. <https://doi.org/10.1016/j.tbench.2022.100073>
- Kamaruddin, M. I. H., Hanefah, M. M., Shaharuddin, A., Ayedh, A. M. A. & Othman, N. A. (2023). Development of Fintech in Islamic Social Finance in Malaysia. *International Journal of Economics, Management and Accounting*.
- Kosba, A., Miller, A., Shi, E., Wen, Z. & Papamanthou, C. (2016). Hawk: The Blockchain model of cryptography and privacy-preserving smart contracts. In: *Proceedings of the IEEE Symposium on Security and Privacy (SP)*, 839-858.
- Khadka, R. (2020). The Impact of Blockchain in Technology. Theseus. https://www.theseus.fi/bitstream/handle/10024/346030/Roshan_Khadka.pdf?sequence=%26isAllowed=y
- Lai, K. (2018). Blockchain as AML tool: a work in progress. *Int. Financ. Law Rev.* [Online] Available from: <https://www.iflr.com/Article/3804315/Blockchain-as-AML-tool-a-work-in-progress.html> (Accessed: April 5th, 2020).
- Lim, J. (2021). There are 56 cryptocurrency firms registered with BNM. Retrieved July 16, 2023, from <https://theedgemalaysia.com/article/there-are-56-cryptocurrency-firms-registered-bnm>
- Liu, M., Wu, K. & Xu, J. J. (2019). How will blockchain technology impact auditing and accounting: Permissionless versus permissioned blockchain. *Current Issues in auditing*, 13(2), A19-A29.
- Marques, L. & Pereira, R. (2023). Creating Value with Blockchain for Organizations. In *Digital Technologies and Transformation in Business, Industry and Organizations* (pp. 17-41). Springer, Cham.
- Mishra, L. & Kaushik, V. (2023). Application of blockchain in dealing with sustainability issues and challenges of the financial sector. *Journal of Sustainable Finance & Investment*, 13(3), 1318-1333.
- Mollajafari, S. & Bechkoum, K. (2023). Blockchain technology and related security risks: towards a seven-layer

- perspective and taxonomy. *Sustainability*, 15(18), 13401.
- Moro-Visconti, R. & Cesaretti, A. (2023). Blockchains, Internet of Value, and Smart Transactions. In *Digital Token Valuation: Cryptocurrencies, NFTs, Decentralized Finance, and Blockchains* (pp. 167-197). Cham: Springer Nature Switzerland.
- Muryanto, Y. T. (2023). The urgency of sharia compliance regulations for Islamic Fintechs: a comparative study of Indonesia, Malaysia and the United Kingdom. *Journal of Financial Crime*, 30(5), 1264-1278.
- Naher, K. & Uddin, M. S. (2023). Exploring the influence of Blockchain in the financial services: Quick assessment of its applications across various financial domains. *Financial Statistical Journal*, 6(1).
- Nair, M. M. & Tyagi, A. K. (2023). Blockchain technology for next-generation society: Current trends and future opportunities for the smart era. *Blockchain Technology for Secure Social Media Computing*.
- Nakamoto, S. (2009). Bitcoin: A Peer-to-Peer Electronic Cash System Bitcoin. <https://www.bitcoinpaper.info/bitcoinpaper-html/>
- Orcutt, M. (2019). Once hailed as unhackable, Blockchains are now getting hacked. MIT Technology Review. Available: <https://www.technologyreview.com/2019/02/19/239592/once-hailed-as-unhackable-block-chains-are-now-getting-hacked/>
- Price, D. (2018). Big blockchain issues: security, privacy, legal, regulatory, and ethical. Available from: <https://blocksdecoded.com/Blockchain-issues-securityprivacy-legal-regulatory-ethical/> (Accessed: October 3rd, 2018)
- Qudah, H., Malahim, S., Airout, R., Alomari, M., Hamour, A. A. & Alqudah, M. (2023). Islamic Finance in the Era of Financial Technology: A Bibliometric Review of Future Trends. *International Journal of Financial Studies*, 11(2), 76.
- Rane, N., Choudhary, S. & Rane, J. (2023). Blockchain and Artificial Intelligence (AI) integration for revolutionizing security and transparency in finance. Available at SSRN 4644253.
- Sachitra, V. & Dayaratna, D. (2023). Examine the Feasibility of Implementing Blockchain Technology in the Sri Lankan Banking System. *Asian Journal of Advanced Research and Reports*, 17(9), 115125.
- Sathish, K., Thatipudi, J. G., Manikandan, P., Kanthimathi, N., Rao, T. S. & Alexander, P. (2023, March). Blockchain-based Enhancement of Digital Revolution in Financial Sector. In *2023 International Conference on Sustainable Computing and Data Communication Systems (ICSCDS)* (pp. 1283-1286). IEEE.
- Schianchi, A. & Mantovi, A. (2023). Blockchain, Decentralized Consensus, and Trust. In *The Economics of Cryptocurrencies and Digital Money: A Monetary Framework with a Game Theory Approach* (pp. 31-65). Cham: Springer International Publishing.
- Shaikh, M. Z., Dixit, N., Manjunatha, D., Chaudhary, A. & Khubalkar, D. (2024). Applications of Blockchain Technology and Crypto Currencies: Current Practice and Future Trends. *International Journal of Intelligent Systems and Applications in Engineering*, 12(4s), 30-40.
- Sharma, J. (2023). Blockchain Technology Adoption in Financial Services: Opportunities and Challenges. *Revolutionizing Financial Services and Markets through FinTech and Blockchain*, 99-117.
- Sowmya, G., Sridevi, R. & Shiramshetty, S. G. (2024). Transforming Finance: Exploring the Role of Blockchain and Smart Contracts. In *Fintech Applications in Islamic Finance: AI, Machine Learning, and Blockchain Techniques* (pp. 255-271). IGI Global.
- Trivedi, S. (2023). An Umbrella Review of the Literature on Blockchain and Distributed Ledger Technology and Their Roles in Future Banking. *Perspectives on Blockchain Technology and Responsible Investing*, 29-57.
- Tyagi, A. K., Dananjayan, S., Agarwal, D. & Thariq Ahmed, H. F. (2023). Blockchain—Internet of Things Applications: Opportunities and Challenges for Industry 4.0 and Society 5.0. *Sensors*, 23(2), 947.
- Ullah, N., Al-Rahmi, W. M., Alfarraj, O., Alalwan, N., Alzahrani, A. I., Ramayah, T. & Kumar, V. (2022). Hybridizing cost saving with trust for blockchain technology adoption by financial institutions. *Telematics and Informatics Reports*, 6, 100008.
- Underwood, S. (2016). Blockchain beyond Bitcoin. *Communications of the ACM*, 59(11), 15-17.
- Yang, F., Abedin, M. Z. & Hajek, P. (2023). An explainable federated learning and blockchain-based secure credit modelling method. *European Journal of Operational Research*.
- Yawalkar, P. M., Paithankar, D. N., Pabale, A. R., Kolhe, R. V. & William, P. (2023). Integrated identity and auditing management using blockchain mechanism. *Measurement: Sensors*, 27, 100732.
- Zidan, F., Nugroho, D. & Putra, B. A. (2023). Securing Enterprises: Harnessing Blockchain Technology against Cybercrime Threats. *International Journal of Cyber and IT Service Management*, 3(2), 167-172.