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MAPPING IDEA & LITERATURE FORMAT

The Application of Blockchain Technology in International Financial Management: Opportunities and Challenges

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Abstract: Blockchain technology has emerged as a disruptive force in the realm of global finance, offering the promise of enhanced efficiency, transparency, and security. This paper provides a comprehensive examination of the applications, opportunities, and challenges presented by blockchain in the context of international financial management. The decentralized ledger system of blockchain holds significant potential for automating processes and improving credit identification in Islamic finance, yet it faces obstacles such as regulatory uncertainty and interoperability issues in traditional banking systems. Despite these challenges, blockchain has the capacity to streamline cross-border payments, digitize trade finance operations, and revolutionize cross-border remittances. However, scalability concerns and regulatory ambiguities pose significant hurdles to widespread adoption and implementation. Considering these challenges, collaboration and innovation are essential to unlocking the full transformative potential of blockchain in reshaping the landscape of global finance. By addressing regulatory uncertainties, enhancing scalability, and fostering collaboration between industry stakeholders and policymakers, blockchain technology can pave the way for a more efficient, transparent, and inclusive international financial ecosystem.

Keywords: Blockchain Technology, International Financial Management, Opportunities, Challenges, Cross-Border Payments.

JEL Classification Code: G15, G21, O33

1. INTRODUCTION

In the realm of global finance, where transactions occur across borders and currencies fluctuate constantly, the application of technology has always been pivotal in enhancing efficiency, transparency, and security. One such technological innovation that has garnered immense attention in recent years is blockchain. Originally devised as the underlying technology behind Bitcoin, blockchain has transcended its cryptocurrency roots to emerge as a disruptive force with profound implications for international financial management. This introduction sets the stage for exploring the opportunities and challenges presented by the application of blockchain technology in this domain. Blockchain, at its core, is a decentralized ledger system that records transactions across a network of computers in a manner that is immutable and transparent. Unlike traditional centralized databases, where a single entity maintains control, blockchain operates on a distributed network, wherein each participant retains a copy of the ledger. This decentralized architecture not only eliminates the need for intermediaries but also enhances the security and integrity of data by making it resistant to tampering or modification.

Blockchain technology presents numerous opportunities and challenges in international financial management. It has the potential to enhance the efficiency and quality of financial operations, particularly in Islamic finance, by automating processes and improving credit identification (Alaeddin et al., 2021; Zhang & Fan, 2020). However, its application in the banking sector is hindered by

challenges such as regulatory uncertainty and interoperability issues (Shorman et al., 2020). In traditional banking, blockchain can mitigate fraud and credit risks, but its influence is limited by the need for collaboration with fintech (Pakėnaitė & Taujanskaitė, 2019). The technology's potential in business management lies in securing transactions and reducing errors (Pal et al., 2021). In financial markets, it can decrease transaction costs and increase operational efficiencies (Wu & Duan, 2019). However, the technology faces challenges such as unclear regulations, lack of standards, and the need for legislative regulation (Alaeddin et al., 2021). To address these challenges, a combination of blockchain technology with distributed security authentication, artificial intelligence, security cloud storage, and big data processing is proposed.

The allure of blockchain lies in its potential to revolutionize various aspects of international financial management. One of the most prominent applications is in the realm of cross-border payments. Currently, international money transfers are often fraught with inefficiencies, high costs, and delays, stemming from the involvement of multiple intermediaries and the reliance on legacy systems. Blockchain-based solutions offer the promise of near-instantaneous settlement, lower transaction fees, and greater transparency, thereby streamlining the process and reducing operational friction. Moreover, blockchain holds the key to transforming trade finance, a critical component of international commerce. Traditionally, trade transactions involve a complex web of documentation, including letters of credit, bills of lading, and certificates of origin, leading to significant paperwork, delays, and discrepancies. By digitizing trade documents and automating the verification process through smart contracts, blockchain can expedite trade finance operations, mitigate risks, and enhance trust between counterparties.

Another area ripe for disruption is cross-border remittances, wherein migrant workers send money to their families in their home countries. Current remittance channels are marred by high fees, long processing times, and limited accessibility, especially in developing regions. Blockchain-powered remittance platforms offer a cost-effective and efficient alternative, enabling peer-to-peer transfers without the need for traditional financial intermediaries. Furthermore, blockchain technology has the potential to revolutionize capital markets by democratizing access to investment opportunities and enhancing liquidity. Through tokenization, real-world assets such as stocks, bonds, and real estate can be represented as digital tokens on a blockchain, facilitating fractional ownership and enabling instant settlement of trades. This democratization of access not only opens up new avenues for investment but also fosters financial inclusion, particularly for underserved populations.

Despite the myriad opportunities presented by blockchain technology, its adoption in international financial management is not without challenges. Foremost among these is regulatory uncertainty, as policymakers grapple with the implications of decentralized finance and digital assets. The lack of uniformity in regulatory frameworks across jurisdictions poses a significant barrier to widespread adoption and hampers innovation in the blockchain space. Moreover, scalability and interoperability remain persistent challenges for blockchain networks, particularly in handling the volume of transactions required for mainstream financial applications. Current blockchain platforms face limitations in terms of transaction throughput and latency, raising concerns about their ability to scale to meet the demands of global financial markets. Security and privacy concerns also loom large, given the immutable nature of blockchain ledgers and the potential for data breaches or manipulation. While blockchain offers inherent security features such as cryptographic encryption and consensus mechanisms, vulnerabilities still exist at the application layer, necessitating robust cybersecurity measures to safeguard sensitive financial data. The application of blockchain technology holds immense promise for revolutionizing international financial management, offering opportunities for enhanced efficiency, transparency, and inclusivity. However, realizing this potential requires addressing significant challenges related to regulation, scalability, and security. As stakeholders navigate this evolving landscape, collaboration between industry players, policymakers, and regulators will be essential to harnessing the full transformative power of blockchain in reshaping the future of global finance.

2. LITERATURE REVIEW PROCEDURE

In the realm of international finance, the emergence of blockchain technology has ignited both enthusiasm and skepticism. This literature review aims to explore the opportunities and challenges associated with the application of blockchain technology in international financial management. By delving into existing research and scholarly perspectives, this narrative seeks to provide a comprehensive understanding of the potential impacts of blockchain technology on the global financial ecosystem.

Blockchain technology, initially developed as the foundation for cryptocurrencies such as Bitcoin, has evolved into a decentralized and immutable ledger system with profound implications. At its essence, blockchain operates as a distributed database, recording transactions across multiple nodes in a transparent and secure manner. Through the utilization of cryptographic techniques, blockchain ensures the integrity and authenticity of data, thereby reducing the reliance on intermediaries in financial transactions. One of the primary opportunities presented by blockchain technology in international financial management lies in its potential to enhance efficiency and transparency in cross-border transactions. By leveraging smart contracts, parties can automate and streamline processes, thereby reducing transactional costs and settlement times. Additionally, blockchain facilitates real-time tracking of assets, thereby enhancing liquidity management and risk mitigation for multinational corporations.

Moreover, blockchain holds promise in fostering financial inclusion by providing access to banking services for the unbanked population in developing countries. Through decentralized finance (DeFi) platforms, individuals can access loans, savings, and investment opportunities without traditional banking intermediaries, thereby promoting economic empowerment on a global scale. Furthermore, blockchain has the potential to revolutionize trade finance by digitizing and automating documentation processes. Smart contracts can facilitate trade agreements, letter of credit issuance, and customs clearance, thereby reducing paperwork and streamlining international trade flows. This digitization of trade finance not only enhances efficiency but also reduces the risk of fraud and enhances compliance with regulatory requirements.

Despite its transformative potential, the adoption of blockchain technology in international financial management is not without challenges. One primary concern is the scalability of blockchain networks, particularly in handling the volume of transactions inherent in global financial markets. Current blockchain infrastructures face limitations in terms of transaction throughput and processing speed, raising doubts about their ability to support large-scale financial operations. Moreover, regulatory uncertainty poses a significant obstacle to the widespread adoption of blockchain technology in international finance. Different jurisdictions have varying regulatory frameworks governing cryptocurrencies and blockchain-based assets, leading to compliance challenges for multinational corporations and financial institutions. Additionally, concerns regarding data privacy and security remain paramount, especially considering high-profile cyberattacks and data breaches in the financial sector. Interoperability presents another challenge for the integration of blockchain technology into existing financial infrastructure. As various blockchain platforms and protocols proliferate, achieving seamless interoperability between disparate systems becomes increasingly complex. Interoperability solutions are crucial to ensuring the compatibility and interoperability of blockchain networks across different stakeholders and financial institutions.

Furthermore, the perceived association of blockchain technology with illicit activities such as money laundering and terrorism financing has contributed to regulatory skepticism and risk aversion among traditional financial institutions. Overcoming this stigma requires proactive efforts to enhance transparency and compliance measures within blockchain ecosystems. In conclusion, the application of blockchain technology holds immense promise for revolutionizing international financial management. By offering increased efficiency, transparency, and financial inclusion, blockchain has the potential to reshape global financial systems and empower individuals and businesses worldwide. However, realizing this potential requires addressing various challenges, including scalability, regulatory compliance, interoperability, and trust issues. Moving forward, collaborative efforts between industry stakeholders, policymakers, and regulators are essential to harnessing the full benefits of blockchain technology in international finance. Through proactive engagement and

innovation, the opportunities presented by blockchain can be maximized while mitigating potential risks and challenges.

The provided table 1 encapsulates a diverse range of research studies focusing on the application of blockchain technology in various facets of the financial industry. Each study offers insights into the opportunities and challenges associated with integrating blockchain into financial systems, shedding light on its transformative potential and the hurdles that must be overcome for successful implementation. The study by O. Alaeddin, Mohanad Al Dakash, and Tawfik Azrak (2021) explores the opportunities and challenges of implementing blockchain in the Islamic financial industry. It highlights the complexity of Islamic finance products and regulatory opacity as major hurdles, while also discussing innovative applications of blockchain in areas like Waqf, Zakat, and Sukuk. A. Shorman, K. Sabri, M. Abushariah, and Mohammad Qaimari (2020) delve into the challenges of applying blockchain in banking systems. Their study emphasizes the potential of blockchain technology in academia and industry, particularly within the banking sector, while also addressing the scarcity of comprehensive reviews in this domain.

Li Zhang et al. (2020) focus on the application of blockchain in finance and economics, highlighting its potential to enhance credit assessment and cross-border payments. They discuss the current state of blockchain technology in the financial industry and offer suggestions for its development. Abhinav Pal, Chandan Kumar Tiwari, and Nivedita Halder (2021) explore blockchain's applications, challenges, and potentials in business management. Their study underscores the transformative impact of blockchain on businesses and economies, particularly in terms of enhancing efficiency and security through smart contracts. Chenxin Zhao and X. Meng (2019) propose integrating blockchain with other technologies like artificial intelligence and big data processing in designing financial service platforms. Their study envisions a future where blockchain plays a central role in revolutionizing financial services through enhanced security and efficiency.

Simona Pakėnaitė and Kamilė Taujanskaitė (2019) investigate the influence of blockchain on traditional banking, emphasizing the need for collaboration between banks and fintech companies to navigate the changing landscape. They highlight blockchain's disruptive potential and its implications for global governance. Binghui Wu and Tingting Duan (2019) analyze the application of blockchain in financial markets, focusing on its role in reducing transaction costs and improving operational efficiencies. Their study underscores the growing adoption of blockchain technology by financial institutions for various operations. The study by Sonal Trivedi, K. Mehta, and Renuka Sharma (2021) offers a systematic literature review on blockchain technology's application in e-finance and financial services. They discuss the unregulated nature of blockchain and its potential to revolutionize financial markets through decentralization and peer-to-peer transactions. Urvi Dilipkumar Rajguru (2018) provides an overview of blockchain technologies, highlighting their unique properties and wide-ranging applications. The study emphasizes blockchain's potential to revolutionize societal interactions and trade through trustless transactions and data integrity. Lastly, M. Ramachandran (2019) discusses the application of blockchain and business process modeling in financial cloud services. The study underscores the importance of integrating technologies like blockchain and big data analytics to enhance business integrity and performance in the financial sector. In summary, the diverse studies presented in the table offer valuable insights into the multifaceted landscape of blockchain technology in the financial industry. While highlighting its transformative potential, they also underscore the need to address challenges such as regulatory uncertainty, scalability, and interoperability to realize the full benefits of blockchain in financial systems.

3. CONCLUSION AND PROPOSITION

Based on the interpretation and narration of the previously discussed table, which examined the application of blockchain technology in international financial management, several hypotheses can be formulated as follows:

Hypothesis 1: The increasing adoption of blockchain technology in Islamic finance institutions will likely lead to improved efficiency and innovation in services, driven by the need to

address challenges such as the complexity of Islamic finance products and lack of transparency.

Hypothesis 2: Blockchain integration into traditional banking systems is expected to encounter significant hurdles, particularly regarding regulatory compliance and scalability, necessitating the development of innovative solutions for successful implementation.

Hypothesis 3: The potential of blockchain technology to enhance cross-border payment efficiency and improve the identification of customer credit conditions suggests promising opportunities in the financial industry, although regulatory clarity and interoperability issues remain critical factors influencing widespread adoption.

Hypothesis 4: While blockchain technology holds promise for revolutionizing business management through features like smart contracts and enhanced transaction transparency and security, challenges related to implementation complexity and data privacy need to be effectively addressed to realize its full potential.

Hypothesis 5: The future direction of blockchain technology in the financial sector is likely to involve the integration of distributed security authentication, artificial intelligence, and big data processing technologies to design comprehensive financial service and management platforms, thereby enhancing operational efficiency and fostering innovation in financial operations.

Table 1. Mapping Literature

Title	Authors	Year	Abstract Summary	State Of the Art	Novelty	Main Findings
Implementing the Blockchain Technology in Islamic Financial Industry: Opportunities and Challenges	O. Alaeddin, Mohanad Al Dakash, Tawfik Azrak	2021	The main challenges towards implementing blockchain in the Islamic financial industry are the complexity of Islamic finance products added to the opacity of its application.	The paper discusses the rapid attention blockchain technology is gaining among financial institutions, particularly in Islamic financial institutions. It also highlights the innovative applications of blockchain in Islamic financial institutions and the opportunities for utilizing blockchain technology in various Islamic financial applications such as Waqf, Zakat, and Sukuk. The paper also addresses the main challenges facing the application of blockchain technology in the Islamic financial industry, including the complexity of Islamic finance products, opacity of its application, unclear regulations, and lack of standards.	The novelty in O. Alaeddin, Mohanad Al Dakash, Tawfik Azrak (2021) lies in its discussion of the rapid adoption and innovative applications of blockchain technology in Islamic financial institutions, as well as its confirmation of the enormous opportunities and challenges in this context.	The main findings of the paper include the rapid attention of blockchain technology in financial institutions, particularly in Islamic financial institutions, as a potential solution for their issues and challenges. It also highlights the enormous opportunities for utilizing blockchain technology in various Islamic financial applications such as Waqf, Zakat, and Sukuk. Additionally, it discusses the main challenges towards implementing blockchain in this industry.
Blockchain For Banking Systems: Opportunities and Challenges	A. Shorman, K. Sabri, M. Abushariah, Mohammad Qaimari	2020	The challenges of applying blockchain technologies in the banking domain are discussed.	The paper discusses the potential of blockchain technology for academic and industrial applications, notes the limited availability of review papers targeting the banking domain within the blockchain-based financial sector, and aims to provide an overview of blockchain-based banking services and discuss the challenges of applying blockchain technologies in the banking domain.	The novelty in this paper lies in its focus on providing a comprehensive overview of blockchain-based banking services and addressing the challenges of applying blockchain technologies in the banking domain, which is relatively underexplored in the existing literature.	Blockchain technology is promising for various applications and domains, including digital identities, social media, supply chain management, luxury goods, and financial assets.
The challenges and countermeasures of blockchain in	Li Zhang, Yongping Xie, Yang Zheng, Wei	2020	The blockchain technology can help the financial industry to automatically and accurately identify customer credit	The "state of the art" in Li Zhang, Yongping Xie, Yang Zheng, Wei Xue, Xianrong Zheng, Xiaobo Xu (2020) is the application of	The novelty in Li Zhang, Yongping Xie, Yang Zheng, Wei Xue, Xianrong Zheng, Xiaobo Xu (2020) is the systematic analysis of blockchain	The main findings include the potential of blockchain technology to integrate financial resources, upgrade the financial system, improve

finance and economics	Xue, Xianrong Zheng, Xiaobo Xu		conditions to restructure the financial market credit system and improve the efficiency of cross-border payment.	blockchain technology in the financial industry to upgrade the financial system, promote efficiency and quality of financial operations and service, and improve cross-border payment efficiency. It also highlights the challenge posed by blockchain technology for the development of the financial industries.	technology and its application in the financial and economic field, along with providing constructive suggestions for its better development in this field.	efficiency and quality of financial operations and services, as well as its ability to aid in identifying customer credit conditions and enhancing cross-border payment efficiency. The paper also provides a systematic analysis of blockchain technology, its application in the financial and economic field, its current status, challenges, and constructive suggestions for its development.
Blockchain for business management: Applications, challenges and potentials	Abhinav Pal, Chandan Kumar Tiwari, Nivedita Haldar	2021	The smart contract feature of blockchain technology can be applied to all transactions involving movement of resources namely finance, material and people.	The paper discusses the emergence of blockchain technology as a vital and encouraging technology in Industry 4.0, its potential to transform the business world and economic system, its applications in managing business, key challenges in implementation, and its potentials in managing business. It also emphasizes the benefits of blockchain adoption and the application of smart contracts.	The novelty in Abhinav Pal, Chandan Kumar Tiwari, Nivedita Haldar (2021) lies in its emphasis on the potential transformative impact of blockchain technology on the business world and its systematic review of the applications and challenges of blockchain in managing business. It also highlights the use of smart contracts for enhancing business processes.	Blockchain technology has the potential to transform the business world and the economic system, offering numerous possibilities for existing and new businesses, as well as disruptions to traditional businesses. The study aims to understand the applications of blockchain technology in managing business, including its potential in securing transactions, reducing errors, improving organizational functions, and preventing fraud. The implementation of smart contracts as a feature of blockchain technology can lead to effective tracking, visibility, security enhancement, and cost reduction in the overall business process.
Application Research of Blockchain Technology in Financial Field	Chenxin Zhao, X. Meng	2019	The future blockchain technology in the financial field innovation and development direction is the block chain technology and distributed security	The state of the art in Chenxin Zhao, X. Meng (2019) is the effective combination of blockchain technology with distributed security authentication, artificial intelligence, security cloud storage, and big data	The novelty in the paper lies in the proposal to integrate blockchain technology with distributed security authentication technology, artificial intelligence technology, security cloud storage technology, and big	The main finding of the paper is the proposal for the future direction of blockchain technology in the financial field, which involves the effective combination of blockchain technology with distributed security

			authentication technology, artificial intelligence technology, security cloud storage technology and big data processing technology are effectively combined to design a financial service and management platform based on block chain.	processing technologies in designing a financial service and management platform based on blockchain.	data processing technology to design a financial service and management platform based on blockchain.	authentication technology, artificial intelligence technology, security cloud storage technology, and big data processing technology to design a financial service and management platform based on blockchain.
Investigation of the Blockchain's Influence on Traditional Banking: Challenges and Opportunities	Simona Pakėnaitė, Kamilė Taujanskaitė	2019	The collaboration of banks with fintech is indispensable since both have strengths and weaknesses.	The state of the art in Simona Pakėnaitė, Kamilė Taujanskaitė (2019) is an in-depth exploration of Blockchain technology and its impact on traditional banking, emphasizing its key properties, benefits, and increasing interest in its potential.	The "novelty" in Simona Pakėnaitė, Kamilė Taujanskaitė (2019) is the newness of Blockchain technology and its potential to change the economy, which requires effort to adopt and understand its problem-solving capabilities.	<ul style="list-style-type: none"> - The main findings of the study are: - The research findings are highly relevant in the context of emerging technologies. - Collaboration between banks and fintech is crucial, as both have their strengths and weaknesses. - Blockchain technology has gained significant interest and is considered a disruptive innovation with wide applicability beyond cryptocurrencies. It is becoming an embedded economic layer for the web system and is increasingly influential in the conventional financial sector.
The Application of Blockchain Technology in Financial markets	Binghui Wu, Tingting Duan	2019	Many financial institutions have started applying blockchain technology into financial transactions in order to decrease transaction costs and increase operational efficiencies.	The "state of the art" in Binghui Wu, Tingting Duan (2019) is the increasing integration of blockchain technology with the financial market, with a focus on applying blockchain technology in financial operations to reduce transaction costs and increase operational efficiencies.	The novelty in the paper lies in the potential integration of blockchain technology with the financial market and the efforts of financial institutions to apply this technology to improve operational efficiencies and decrease transaction costs.	Financial institutions are increasingly applying blockchain technology to decrease transaction costs and increase operational efficiencies, particularly in financial note, cross-border payment, and asset-backed securitization.
Research on Innovation and Development of Blockchain	Chenxin Zhao, X. Meng	2019	Distributed security authentication technology, artificial intelligence technology, and big data	The "state of the art" in Chenxin Zhao, X. Meng (2019) involves the integration of information security, artificial intelligence, distributed	The novelty in Chenxin Zhao, X. Meng (2019) is the proposal to combine distributed security authentication technology, artificial	Blockchain technology has diverse applications in various fields including finance, international settlement, equity trading, insurance

Technology in Financial Field			processing technology are effectively combined with the blockchain technology to design a financial service and management.	cloud storage, and big data analysis in blockchain technology. It also encompasses the application of blockchain technology in various fields such as international settlement, equity trading, insurance services, digital rights, financial technology, and electronic payment. Additionally, the future innovation and development direction of blockchain technology in the financial field includes combining distributed security authentication technology, artificial intelligence technology, security cloud storage technology, and big data processing technology with blockchain technology to design financial service and management.	intelligence technology, security cloud storage technology, and big data processing technology with blockchain technology for designing financial service and management.	services, digital rights, and electronic payment. The future innovation and development direction of blockchain technology in the financial field involves combining various technologies to design financial service and management.
Blockchain technology in international business: changing the agenda for global governance	A. Hooper, Dirk Holtbrügge	2020	The use of blockchain in international business has different impacts on global governance.	The "state of the art" in A. Hooper, Dirk Holtbrügge (2020) is the analysis of the impacts of blockchain on international business and its implications for global governance, covering multiple industries and discussing both challenges and benefits for global governance. The paper also emphasizes the need for more multidisciplinary and empirical research in this area.	The novelty in A. Hooper, Dirk Holtbrügge (2020) lies in its analysis of the impacts of blockchain on international business across multiple industries and the resulting challenges and implications for global governance, as well as its recommendations for future multidisciplinary and empirical research in this area.	The study analyzes the impacts of blockchain on international business and global governance, highlighting potential improvements in property rights protection and reduction in transaction costs, but also ambivalent effects on other functions of global governance. It suggests the need for more multidisciplinary and empirical research and provides recommendations for future regulation of blockchain applications in international business.
Analysis of the Application of Blockchain	Lu Zhang, Dong Fan	2020	The specific application of blockchain technology in the financial industry needs to be explored.	The "state of the art" in Lu Zhang, Dong Fan (2020) is the wide use of blockchain technology in the financial field, its potential to change	The novelty in Lu Zhang, Dong Fan (2020) lies in the emphasis on the potential of blockchain technology to transform the financial industry, the	The main findings of the paper are: - Blockchain technology has wide applications in the financial field and

Technology in the Financial Industry				flaws in the traditional financial system, and the need for research, analysis, and supervision to ensure security.	recognition of its emerging nature, and the call for research, analysis, and supervision to ensure its secure application.	can effectively address flaws in the traditional financial system. - There are hidden risks in the application and operation of blockchain technology in the financial industry, requiring research, analysis, and strengthened supervision. - Exploring specific applications of blockchain technology in the financial industry is essential for understanding its actual application and promoting its development.
Systematic Literature Review on Application of Blockchain Technology in E-Finance and Financial Services	Sonal Trivedi, K. Mehta, Renuka Sharma	2021	The technology is unregulated, thus it is still in its nascent stage.	-	The novelty in the paper lies in its focus on the application and potential of blockchain technology in the financial sector, highlighting its decentralization, potential for peer-to-peer transactions, and its role in changing the way people do business. The paper also emphasizes the unexplored applications of blockchain in the finance sector and the scope for improvement in the technology.	- Blockchain technology has the potential to advance the efficiency and security of financial markets. - The majority of the literature on financial services and e-finance focuses on cryptocurrencies, particularly in the fields of economics and computer science. - The usage of blockchain in financial services has resulted in the emergence of decentralized finance, also known as DeFi.
A review on challenges and opportunities in Blockchain Technology	Urvi Dilipkumar Rajguru	2018	The enthusiasm for blockchain development has been growing since the concept was established in 2008.	The state of the art in Urvi Dilipkumar Rajguru (2018) is the widespread application of Blockchain technology in various sectors, the increasing interest in this technology since its inception, and its key properties including security, anonymity, and data integrity without the need for a third-party intermediary.	The novelty in Urvi Dilipkumar Rajguru (2018) is the emphasis on the unique properties of Blockchain technology, including its decentralized nature, security, and unchangeable record of transactions, which have led to its increasing interest and wide-ranging applications in both financial and non-financial domains.	The main findings of the paper are that Blockchain technology ensures data immutability and provides a clear record of all transactions, and there has been a growing interest in this technology since its introduction in 2008.

An overview of blockchain technologies: Principles, opportunities and challenges	G. Mermer, E. Zeydan, Suayb S. Arslan	2018	The main advantage blockchain technology provides is its ability to exchange transactions without relying on a trusted third party entities of any means.	The "state of the art" in G. Mermer, E. Zeydan, Suayb S. Arslan (2018) is an overview of blockchain technologies, including their principles, opportunities, and challenges, emphasizing the potential of blockchain to revolutionize interactions and trades in society.	The novelty in G. Mermer, E. Zeydan, Suayb S. Arslan (2018) lies in the emergence of blockchain technology with its potential to revolutionize societal interactions and trade, its unique advantage in enabling transaction exchange without relying on trusted third-party entities, and its envisioned role as the foundation for revolutionary applications.	Blockchain technology has the potential to revolutionize societal interactions and trade by enabling trustless transactions, providing data integrity, in-built authenticity, and user transparency. It is envisioned to be the foundation for many revolutionary applications in the future.
The Application of Blockchain Technology in the Financial Field	Lingqi Xue	2021	The blockchain financial system has many advantages.	The state of the art in Lingqi Xue (2021) is the study of the application of regional chain technology in the financial field, with a focus on improving financial information quality, management and control, and security. The paper also acknowledges that blockchain technology is still in its early stages with unresolved problems and deficiencies.	The novelty in Lingqi Xue (2021) lies in its emphasis on the widespread adoption of blockchain technology in the Internet finance field, the specific focus on regional chain technology in the financial field, and the potential benefits and unresolved issues associated with blockchain financial systems.	The main findings of the paper are: - Financial information quality issues have the highest score, followed by management and control issues and security issues. - The blockchain financial system has many advantages. - There are many unresolved and unidentified problems and deficiencies in the blockchain financial system.
Application of Business Process Modelling and Blockchain Technology for Financial Cloud	M. Ramachandran	2019	A systematic approach is necessary for all aspects of the financial process and applications.	The "state of the art" in M. Ramachandran (2019) involves the contribution of digital economy, digital currencies, and information technology to the growth of the global economy and financialization, as well as the application of Business Integrity Modelling and Analysis (BIMA) and Business Process Modelling and Simulation (BPMN) techniques to unify business integrity with business performance using big data predictive analytics and business intelligence. Additionally, it includes	The novelty in M. Ramachandran (2019) lies in the application of Business Integrity Modelling and Analysis (BIMA) and Business Process Modelling and Simulation (BPMN) techniques to unify business integrity with business performance using big data predictive analytics and business intelligence, as well as the application of BPMN for financial application as a Service and the overview of blockchain technology adoption for the financial cloud.	The main findings of the paper are the contribution of digital economy, digital currencies, and information technology to the growth of the global economy and financialisation, the application of BIMA and BPMN techniques to minimize damaging impacts caused by the lack of regulatory compliance, governance, ethical responsibilities, and trust, and the application of BPMN for financial application as a Service and an overview of blockchain technology adoption for the financial cloud.

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