

THE CRITICAL ROLE OF IMPLEMENTING BLOCKCHAIN TECHNOLOGY IN ENHANCING FINANCIAL RISK MANAGEMENT IN BANKING COMPANIES

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Abstract

Banking experts now encourage the adoption of blockchain technology in order to employ intelligent agreements and increase revenue proportions at the end of the fiscal year. Inconsistency and personal mistake have presented a number of difficulties for lenders and accountants conducting complex and crucial financial processes. Blockchain technology has recently been utilized for predicting crucial computations and addressing issues pertaining to numerous financial processes, in addition to its payment integrity and risk management possibilities. After conducting a nationwide survey, the researchers gathered and assessed pertinent financial data as well as transaction information.

To gather comments on the research issue, researchers around the UK have also conducted surveys with 3 questions and 80 participants. In the research article, researchers will examine how well blockchain technology may improve business danger planning and management. According to research data gathered using a probability sample method, 48% of respondents are in favour of using blockchain to maintain banking transaction history more efficiently. In contrast side, after removing the need for a third party and reducing operating costs, about 57% of people supported the usage of blockchain. In addition, almost 58% of the company could benefit boosting security measures and analyzing financial dangers to improve banking effectiveness. The authors of this study demonstrate a sincere desire to explore the advantages of

implementing blockchain based in the financial industry in order to quickly address future financial difficulties.

Keywords: “Blockchain Technology”, banking sectors, Financial services, survey, participants, financial risks, and researchers.

Introduction

Implementing proper Blockchain Technology in various banking sectors around the world has become a trendy topic these days. With the advent of blockchain technology in the modern era, banking companies can effectively conduct complex financial risk management activities easier and quicker than before (Jain et al. 2019). From various financial reports and surveys, researchers have come to a point that around **68%** of the potential investors, as well as bankers, prefer the use of blockchain technology in performing various critical economical activities (Jain, and Pandey, 2019).

It has been identified that blockchain technology and its applications can highly satisfy banking professionals by enhancing numerous economical risk management efficiency. After surveying across the UK, financial specialists have determined that in the previous decades, banking sectors have faced a lot of issues when the global pandemic appeared. While managing accurate financial risks and threats, banking practitioners have experienced a decline in the overall economy by **38.46%** during the COVID-19 pandemic period (Jain, and Pandey, 2019). However, economists from the UK were working hard to resolve the issue as soon as possible and their research findings at once prove that blockchain technology can enhance the overall efficiency of the banking sector by almost **71.87%** during the crisis (Panwar et al. 2021).

Researchers have also pointed out that while managing risks and threats, blockchain technology can effectively help banking institutions to keep a better transaction track accurately so that error percentages can be mitigated (Jain et al. 2021). Though some investors support the traditional methods of tracking financial transactions through **SWIFT**, blockchain technology will surely leave them behind by its validity and accuracy in financial aspects.

Literature Review

Over the decades, global economists and bankers faced serious challenges while managing proper risk assessments or keeping track of necessary economic data. While following the conventional methods, economists and financial experts have identified that money transfer of a standard bank can be time-consuming and costly (Jain et al. 2021). However, the process takes some more days to set the whole transaction procedure due to delays in the flow of the UK-based financial system (Shah & Jani, 2018). After conducting various researches, financial experts have spotted the reason for the immediate implementation of blockchain technology in managing banking financial operations more smoothly and without any errors (Sankaranarayanan & RAJAGOPALAN, 2020). The traditional **SWIFT** method can take long time to deliver accurate results, financial practitioners focus on applying the blockchain approach to settle important financial transactions quickly and directly (Yusof et al. 2018). While keeping better transaction track records, blockchain technology also can gain an advantage over the traditional **SWIFT** method (Fig. 1).



Figure 1: Advantages of using blockchain technology in banking sectors

(Source: Yusof et al. 2018)

Enormous UK-based private banks, including *Adam & Company*, *Butterfield Private Bank*, *Bentley Reid & Co.*, *Hoare & Co.*, etc., support the application of **80%** of the blockchain technology in global transactions (Gupta & Gupta, 2018). Blockchain technology is at once essential to align with banking activities to get a clear picture of the overall lifespan tracking activities regarding any money transaction (Fig. 2). On the other hand, while conducting important value exchanges, block technology also provides necessary help to bankers operating within a banking infrastructure (Hassani et al. 2018). Economists have pointed out that the applications of blockchain technology can at once mitigate the requirements for expensive as well as time-taking verifications from third-party transfer and exchange (Khadka, 2020).

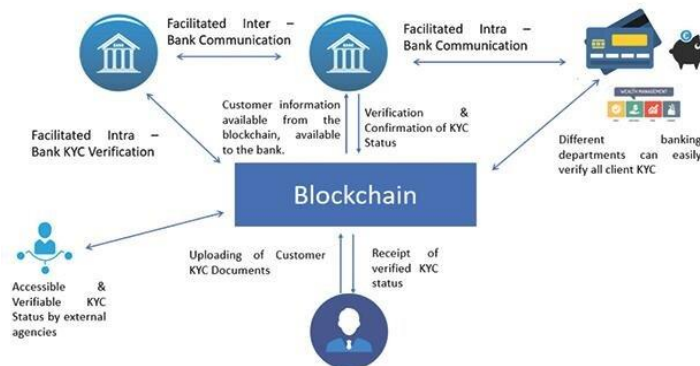


Figure 2: Implementation method of blockchain technology over banking operations

(Source: Khadka, 2020)

Researchers have identified technological inventions in the banking sectors day by day taking its operations to a higher level in the global exposure, especially with the application of blockchain technology. However, it has been traced that the traditional *SWIFT* method is a potential threat to banking practices around the world (Osmani et al. 2020). Today, the share market investors and potential bankers have experienced a lot of beneficial merits of using blockchain technology in easing transaction tracking (Demirkan et al. 2020). One of the reasons for applying blockchain technology with the economical progression is that it can offer a tamper-proof system (Fig. 3). With the help of the system,

banking companies can distribute important financial ledgers which at once involve the use of blockchain methods to underlie numerous usages of Bitcoin cryptocurrencies (Shah et al. 2018).

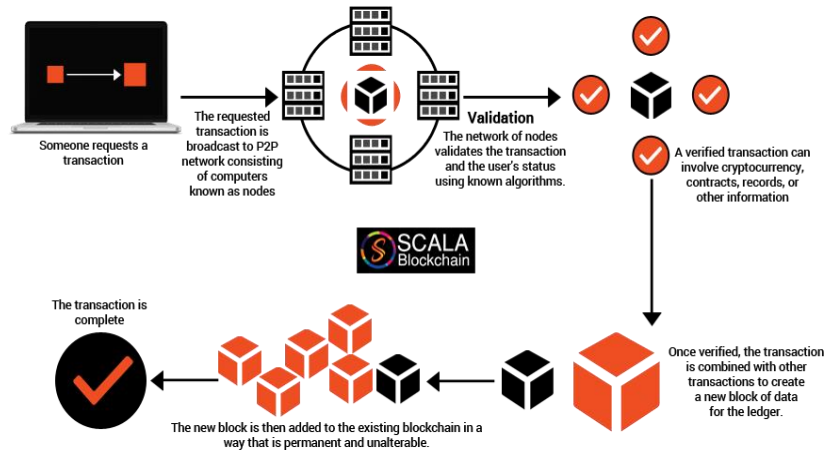


Figure 3: The working method of blockchain technology within financial operations

(Source: Shah et al. 2018)

Blockchain can at once lead the entire banking industry towards attaining a more transparent system (org. in, 2022). Blockchain facilities in such cases can at once offer users better performing skills across an economical public ledger. Besides, blockchain also can maintain high-security alerts for banking professionals by identifying and reducing potential threats and risks (businessworld.in, 2022). The entire transparent system offered by blockchain technology can at once expose various financial inefficiencies such as money laundering and financial frauds (youteam.io, 2022). As a result, financial experts seek proper ways to lead the entire banking practice towards a problem-solving ability by applying blockchain technology to mitigate risk for banking institutions (scirp.org, 2022). Another important reason for implementing blockchain technology is to enhance the banking operations with 62% added security and privacy measures provided by the transparent system (limechain.tech, 2022). Researchers thus focused on conducting an empirical investigation regarding the usefulness of blockchain in UK-based banking sectors to acquire more accurate financial information.

Research Methodology

Blockchain technology can operate a digitized as well as de-centralized public record system that helps bankers to keep records of all the crypto currency and bit coin transactions (Al Hsani & Sherimon, 2021). Researchers have conducted relevant research methods to analyze the research study related to the topic. They focused much on gathering as well as interpreting all the necessary financial resources from different *primary sources*. While performing the primary investigation, researchers have concentrated more on applying a *quantitative data collection technique* from valid sources.

Researchers after evaluating relevant research findings have come to know that if a decentralized economy can replace banking practices, then blockchain technology would be more specific and beneficial for the financial experts (Polyviou et al. 2019). In order to understand the role of blockchain in banking sectors, researchers have framed three important survey questions in this research paper by applying a *positivism research philosophy*. Apart from this, they threw an important light on gathering authentic financial records and transaction histories through imposing a *deductive research technique* effectively. Researchers undertook a *descriptive design* for evaluating the research while collecting desirable economic information for further investigation on the current topic. On the other hand, *the primary collection of information* would offer effective benefits to the researchers during discussing

financial threats and risk-related issues in the research paper more accurately. Researchers have gathered valid opinions and responses from around **90 participants** among which **10 participants** did not help in the survey. After collecting relevant opinions from investors, stock market stakeholders, insurance associates, economists, financial experts, and bankers through three valid questionnaires, researchers have focused on analyzing survey outcomes more effectively. All their opinions regarding the useful applications of blockchain technology in offering better financial services have been analyzed through virtual mediums.

In order to comprehend the situation more clearly, researchers have outlined 3 questions while conducting a detailed survey evaluation through all the gathered virtual binary choices from around **80 participants**. Researchers mainly have incorporated **a probability sampling method** for gathering participants' responses regarding the validity and accuracy of the survey questions. With the help of **a random sampling method**, all the responses from directly linked financial participants have been consciously analyzed by the researchers. All the survey results reflect that most of the private banking companies in the UK are widely using blockchain facilities to maintain more smooth financial regulations (Wang et al. 2020). Researchers in the research paper are going to properly evaluate the percentage gaps among participants who have inappropriate mixed knowledge about the operations of blockchain in banking sectors.

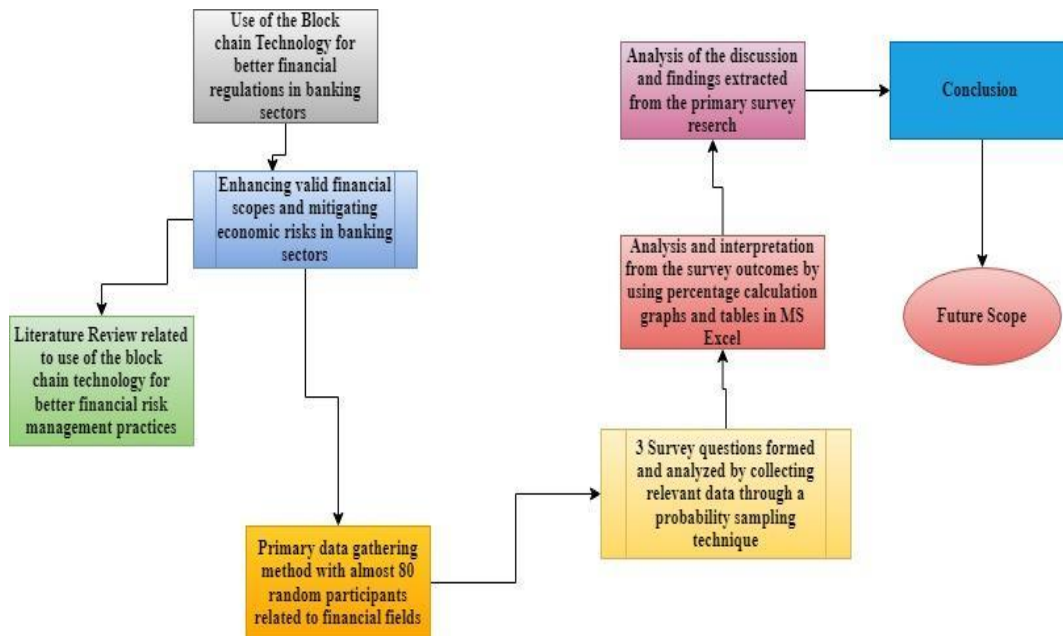


Figure 4: Flowchart Diagram of the research

(Source: Created by the researchers)

Analysis and Interpretation

Researchers have undertaken **3 important survey questions** and analyzed them from a positive perspective to comprehend the contributions of blockchain technology in banking transactions more clearly. Around **87%** of the survey outcomes have pointed out that blockchain is mainly applied in the financial sectors to support the digital assets and money transfer of digital assets among stock market competitors within the real period (Dashkevich et al. 2020). Besides conducting the survey analysis, researchers have additionally made two linked research questions for understanding all the survey analyses more properly. Those survey questions include-

- How can blockchain technology enhance the efficiency rate while performing more accurate financial transactions in the banking sector?
- What are the benefits offered by blockchain chain technology to the banking companies in managing financial risks more accurately in the future?

Essential Survey Questions related to the topic-

Q1. Will appropriate applications of blockchain technology help bankers track the financial transaction records more quickly and accurately while managing big financial datasets?

TABLE I. “TRANSACTION TRACKING RATE MEASUREMENT BY THE USE OF BLOCKCHAIN TECHNOLOGY IN THE BANKING INDUSTRY”
(SOURCE: CREATED BY THE RESEARCHERS)

Options of the participants	Overall Participants	Overall responses gathered	Percentage
Supported Strongly	80	13	16.25
Agreed	80	23	28.75
Remained Neutral	80	9	11.25
Disagreed	80	19	23.75
Disagreed Strongly	80	16	20

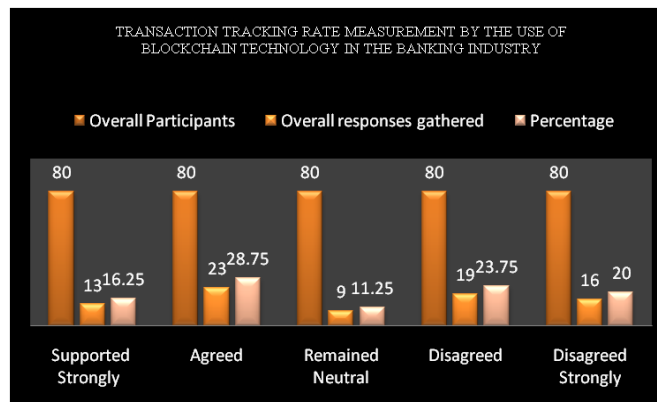


Figure 5: Transaction tracking rate measurements in banking sectors by utilizing blockchain technology

(Source: Created by the Researchers)

Researchers have collected thoughts on the usage of blockchain technology to track transaction history more precisely and effectively from about 80 people. Nearly 16.25% of those individuals, according to researchers, strongly agreed that the initial survey question was genuine. However, about 28.75% of the participants responded favorably to the question. Only 11.25% of the respondents, however, were undecided about the topic's applicability. In addition, the calculation table reveals that over 23.75% of respondents did not agree with the first poll question. On the other hand, over 20% of participants were

found to strongly disagree only with legitimacy of the queries, according to experts. The accompanying calculating table allows for an efficient analysis of significant percentage differences between participants' viewpoints.

Q2. Do you agree that the effective use of blockchain technology can ensure the avoidance of any third-party involvement by mitigating costs in the overall banking sector?

TABLE II. “THIRD-PARTY ERADICATION AND COST MITIGATION RATE CALCULATION THROUGH BLOCKCHAIN FACILITIES”
(SOURCE: CREATED BY THE RESEARCHERS)

Participants’ Opinions	Total number of Participants	Collected Responses	Percentage
Agreed Strongly	80	21	26.25
Supported	80	25	31.25
Neutral	80	3	3.75
Did not support	80	18	22.5
Strongly Disagreed	80	13	16.25

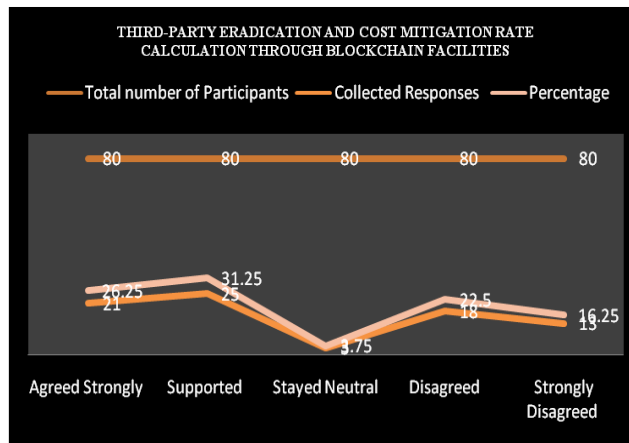


Figure 6: Cost reduction and third-party eradication rate measurements over banking practices through blockchain technology

(Source: Created by the Researchers)

Researchers identified the usage of blockchain technology in the financial sector as one of the most popular conversation topics in the second question. However, only about 26.25% of the 80 participants strongly agreed with the use of eliminating all third-party involvement. Additionally, only 31.25% of respondents agreed that using blockchain to perform financial transactions would make them more affordable. Only 3.75% of respondents, however, chose not to respond in either a favorable or negative

way to the second survey question. On the other hand, it was found that about 22.5% of the participants disagreed with the validity and applicability of the question in light of the current state of the world economy. Contrarily, over 16.25% of respondents strongly disapproved of the usage of blockchain to improve banking processes by reducing the involvement of third parties. The validity of the second survey question in the table has been taken into consideration when evaluating all of the significant variations in opinions.

Q3. Do you think that blockchain implementation will improve the overall efficiency of the banking industry by properly managing financial risks and enhancing security in the sustainable future?

TABLE III. “SECURITY EFFICIENCY RATE MEASUREMENT IN BANKING OPERATIONS BY USING BLOCKCHAIN METHODS”
(SOURCE: CREATED BY THE RESEARCHERS)

Participants’ Choices	Participants	Collected overall Responses	Percentage
Strongly Supported	80	24	30
Supported	80	21	26.25
Stayed Neutral	80	10	12.5
Disagreed	80	14	17.5
Strongly Disagreed	80	11	13.75

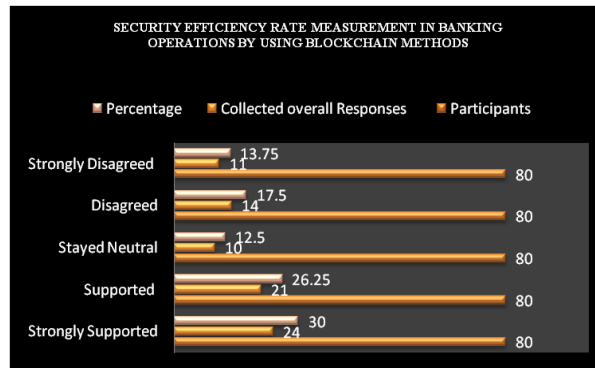


Figure 7: Security efficiency rate measurements in financial aspects with the help of blockchain technology

(Source: Created by the Researchers)

Among **80 participants**, around **30%** of the participants have strongly supported that blockchain implementation can amplify the entire efficiency rate of the banking industry. Apart from this, the above percentage calculation table shows that almost **26.25%** of the people have supported the idea of using blockchain facilities while operating various financial estimations by accurately managing threats and risks. However, only **12.5%** of the participants stayed neutral regarding the third survey questions. On the contrary, researchers have pointed out almost **17.5%** of the people did not support the idea of increasing security measures in banking practices by using blockchain methods. Moreover, around **13.75%** of the

participants have been traced from the list who strongly denied the validity of the third survey question. Therefore, by evaluating all the percentage differences, researchers can comprehend the actual role of blockchain in managing unchangeable financial records and lowering the transaction time in the research paper.

Discussion and findings

A tendency towards implementing around 30% of the decentralized blockchain-oriented systems can be seen in modern-day investors and users (Wu & Duan, 2019). The main reason behind the decision was to replace banking activities with a faster process of money transactions that can be easily conducted with the help of blockchain technology. From the analysis of the first survey question, researchers focused on analyzing the role of blockchain technology in tracking economic transaction records more accurately while managing big datasets efficiently. Bankers in recent times concentrate more on the conduction of financial infrastructure terms by implementing any APIs of blockchain technology (Malyavkina et al. 2019). Researchers have traced that around 45% of the participants have positively supported a drastic reduction in money transfer and asset transaction costs after using blockchain technology in banking sectors.

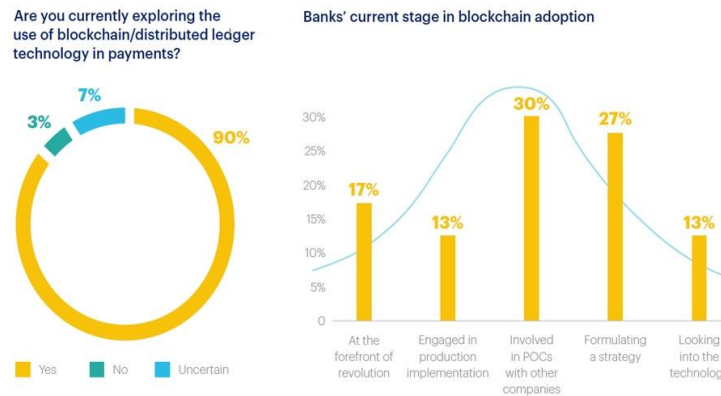


Figure 8: Graph reflecting various impacts if blockchain facilities over baking sectors
(Source: Malyavkina et al. 2019)

The second survey question analysis at once goes to a little extent because through asking participants, researchers have come to know about the useful advantages of blockchain technology. It has been determined from the analysis of the second survey that banking sectors can improve their overall efficiency, by almost 47% more than in the previous decades (Evans, 2018). Researchers have identified that around 58% of the participants ensure the use of blockchain technology by eliminating the involvement of any third party. However, the analysis at once reflects that blockchain technology is essential for banking professionals while reducing costs over financial operations. From the research findings, it can be proved that after applying blockchain methods during financial risk management, banking sectors can earn around 59% more revenue than the previous years.

TABLE IV: ANALYSIS OF SURVEY OUTCOMES REGARDING THE BLOCKCHAIN IMPLEMENTATION OVER BANKING PRACTICES
(SOURCE: CREATED BY THE RESEARCHERS)

Topic	Supported	Remained Neutral	Did not support
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(a) Use of Blockchain technology for tracking financial transaction records	45%	7%	48%
(b) Blockchain technology for eliminating third party engagement by reducing banking operational costs	57%	17%	26%
(c) Utilization of blockchain for improving the entire banking efficiency by managing economical threats and increasing security.	58%	11%	31%

In order to measure the security issues and financial risks, most of the bankers prefer the use of blockchain technology is evident from the analysis of the third survey question. Researchers have pointed out that around **57%** of the participants have strongly supported the relevance and validity of the third survey question. On the other hand, to manage risk assessment and a higher security level, blockchain technology can at once offer banking experts the necessary assistance. Among all the private banks, around **43%** of the financial companies felt the need to keep fees down then the market rate (Sheetal & Venkatesh, 2018). Moreover, by analyzing all the differences in the participants' opinions, researchers can effectively investigate all the pros and cons of blockchain facilities over banking practices in the sustainable future.

Conclusion

The recent era has witnessed several beneficial applications of blockchain in banking, stock market operations, insurance, and banking sectors worldwide. The entire banking industry of the UK has started investigating the role of blockchain over enhancing financial risks management more efficiently. Researchers, after conducting a *primary research survey*, have pointed out that by replicating present money and asset transfer with the blockchain facilities, participants can actively get more accurate transaction details. With a *probability sampling technique*, researchers have collected opinions about **3 relevant survey questions** from **80 participants** related to the research topic.

Researchers and economic experts also offered some air for the usefulness of blockchain solutions over various financial issues in the banking sector. Moreover, researchers showed positive interest in examining blockchain's role in increasing security, keeping unchangeable information, processing quick transactions, and eliminating third-party inclusion by reducing operational costs. For the future banking practices, the blockchain application over the financial sectors can be highly essential to eradicate traditional disruptors in today's financial industry.

Future Scopes

It has been analyzed from the entire research study that banking sectors in the UK are shifting from traditional *SWIFT* methods regarding managing financial high-tech securities. The previous method of keeping transaction records has been replaced by blockchain technology in the modern era for conducting more accurate estimations quickly (Rijanto, 2021).

Global economics strongly supports the use of blockchain technology in various banking-related financial operations because it can potentially enable the power of banks to set important transactions directly in the future. Besides recording financial information, With the facilities of blockchain technology, the authentic users' verification can be managed sincerely along with fund payment or money transfer procedures (Valverde & Fernández, 2019). It has been traced that in the sustainable future, an effective amount of money, as well as time, could be saved by applying blockchain facilities over banking sectors.

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