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The Influence of Financial Literacy and Risk Preferences on Cryptocurrency Investment Choices

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ABSTRACT

This study aims to describe the overview of financial literacy, risk preferences, and investment decisions, as well as to analyze the influence of financial literacy and risk preferences on cryptocurrency investment decisions among millennials in Tangerang City. The research sample consisted of 95 respondents, selected using purposive sampling technique. Data was collected through a questionnaire with a Likert scale format. The collected data was then analyzed using Partial Least Square (PLS). The results indicate that financial literacy and risk preferences among cryptocurrency investors in Tangerang City are at a very high level. The high financial literacy and risk preferences positively contribute to cryptocurrency investment decisions. Hypothesis testing shows that both financial literacy and risk preferences have a positive and significant impact on cryptocurrency investment decisions. This study has implications for efforts to improve the rationality of cryptocurrency investment decisions to avoid undesirable losses, such as selecting cryptocurrencies with less volatile price fluctuations or diversifying portfolios by combining cryptocurrencies with conventional assets like stocks, bonds, or mutual funds.

1. INTRODUCTION

The rapid development of cryptocurrency has had a significant impact in Indonesia. This has attracted many millennials in Indonesia to consider cryptocurrency as an alternative investment or trading option, even though it has not yet been recognized as a legitimate payment instrument in the country. According to data published in the Indonesia Crypto Outlook Report (2023), Indonesia ranks fifth in the world for the number of cryptocurrency users, with cryptocurrency transaction volume in Indonesia totaling IDR 104.9 trillion per quarter over the last three years [1]. The number of beginner cryptocurrency investors in Indonesia has shown a steady increase every year. Data from the Indonesia Crypto Outlook Report (2020) reveals that the average annual growth of new cryptocurrency investors in Indonesia from 2015 to 2020 was 296,374 people, or 119.84 percent per year [2]. Furthermore, the number of cryptocurrency investors in Indonesia surpasses the number of investors in the capital market, with 7.5 million cryptocurrency investors in Indonesia as of July 2021, compared to 6.76 million Single Investor Identification (SID) holders in the capital market [3]. A survey by Bitocto Indonesia showed that 65.5% of cryptocurrency investors in Indonesia are millennials, aged 17-30

years. This data indicates a high level of interest in cryptocurrency investment among millennials in Indonesia [4]. The reasons millennials prefer investing in cryptocurrency include their general lack of trust in traditional investment institutions [5], [6]. They tend to rely on their own market research rather than using research from traditional sources such as financial advisors. Additionally, the presence of cryptocurrency communities allows them to connect with other investors, both domestically and internationally, which further drives their interest in this form of investment [4], [7].

Various Blockchain framework designs in the world of education is introduced to the advantage that the user will get, this is made to change the current education system [8], [9]. The latest educational trends can be described through existing **gap**. The latest educational trends provide view of the gap between blockchain and implementation. Scalability issues being one of some of the existing problems. The scalability is defined as the time taken to reach consensus and put transactions in block [10]. The main concerns of scalability, interoperability, and regulatory compliance that are essential to the broad use of blockchain technology will also be covered in this study [10], [11]. Data records that have become part Blockchain as well as being hosted on the network decentralized then immutable, this is what Blockchain means in simple terms [12], [13].

2. LITERATURE REVIEW

Blockchain is a decentralized, distributed ledger technology known for its immutability and transparency. It has been widely adopted across various industries, particularly in finance, to secure and streamline transactions [14]. In education, blockchain offers a secure platform for storing academic records, ensuring that data cannot be altered or tampered with once it is added to the blockchain [15]. Blockchain-based systems can also offer greater control over who can access sensitive academic data, thereby enhancing privacy and security.

blockchain's use of encryption ensures that only authorized individuals with the correct private key can access and modify academic records, because blockchain operates on a decentralized network of nodes, there is no central point of failure, making it more resilient to cyberattacks compared to traditional centralized systems [16].

A particularly relevant feature of blockchain in the context of academic records is its ability to verify the authenticity of certificates and diplomas [17]. Blockchain-based digital credentials allow for real-time verification by employers, other educational institutions, and government bodies, reducing the likelihood of counterfeit degrees and diplomas [18]. Demonstrated how blockchain can be integrated into digital certificate management systems to ensure the authenticity and security of academic records [19].

3. RESEARCH METHODS

his research adopts a multi-method approach, incorporating both qualitative and quantitative methods to investigate the role of Blockchain technology in educational systems [20]. The primary method for data collection will be an extensive literature review [21]. Various sources, including academic journals, books, and expert opinions, will be explored to gather insights into the integration and application of Blockchain technology in education [22]. The review will focus on identifying Blockchain frameworks, features, and Blockchain-based educational services. Relevant keywords, such as "Blockchain in education" and "Blockchain applications in educational technology," will be used to source pertinent materials. The study will analyze case studies of existing Blockchain applications in education, such as Sony Global Education, Origin-Stamp, and GradeBase [23]. These cases will provide a practical understanding of how Blockchain technology is implemented in educational institutions and its effects on the education system. Insights from these case studies will be used to develop a conceptual framework for Blockchain implementation in education. A qualitative approach will be applied to examine the potential of Blockchain to solve prevalent problems in education, such as cheating, data security, and certificate authenticity. The analysis will involve identifying the challenges and opportunities associated with the adoption of Blockchain technology, derived from existing literature and case studies. A survey will be conducted among students, educators, and administrative staff to assess the perceived benefits of Blockchain technology in educational settings. The survey will focus on aspects such as data security, transparency, and trust in Blockchain-based educational services. Responses will be analyzed quantitatively to identify trends and general perceptions regarding Blockchain's impact on education. Based on the findings from the literature review, case studies, and surveys, a Blockchain-based education framework will be proposed. This framework will outline the steps and technologies needed for successful Blockchain implementation in

educational systems. It will also address scalability issues and suggest ways to overcome these challenges. Both qualitative and quantitative data will be analyzed to derive conclusions about the viability and benefits of Blockchain in education. The qualitative data will be analyzed through thematic analysis, while the quantitative data will be analyzed using statistical methods to evaluate trends and relationships among variables.

4. RESULT AND DISCUSSION

Based on the problems described above, we suggest forming a gamification layer that Attractive at the basic level of application as well as an easy-to-understand and simple interface. It is potential to be able to increase motivation and also the curiosity of users (in this case students) to continue to participate actively in implementing the gamification application. In addition, this gamification layer must, implied or not, provide education to users, but it should be noted that the delivery of this education needs to be delivered with an interesting way to be able to get the full focus of the user so that the information you want to convey is channeled well [20].

Figure 1. Structure Blockchain

The fig 1 delivery of this education can be implemented by adding some additional features such as methods learning using flashcards [21]. The use of pictures that can trigger user interest, and using games (of course we will not explain this further) such as puzzles, word search, and the like, also with level, point, and reward features that can be a support in improving user motivation in the learning process [24]. Giving points and rewards to users when able completing a challenge is able to provide satisfaction to the user, besides providing opportunitie secondly to the user is also able to increase the user's curiosity in completing their mission [25]. With In these ways, users/students are able to learn without them knowing [26]. We are able to force the user to learn in a fun way without having to make them bored or even frustrated like learning with traditional methods [17]. In relation to awards, awards are given to users who have achieved outstanding achievements extraordinary things in the learning process need to be applied in a structured and fair manner [20]. This is due to achievement extraordinary users require more effort and ability than effort and ability users in general, so this proper reward needs to be implemented [27]. This award can be: dynamic rankings of users, as well as bonuses that certain users can receive after reaching certain stages [28]. Blockchain technology is here to solve this problem, where transactions are validated by the system before being permanently stored in an interconnected and decentralized data record [29]. Every user can check the correctness of a data at any time. This makes the data on the Blockchain almost non-existent can be faked. Blockchain is built using pre-existing technology. Decentralized ledgers enhance data accessibility and integrity by facilitating the safe and easy sharing of health records among authorized entities. Improved data security and interoperability in electronic health record (EHR) systems, as evidenced by projects like MedRec and blockchain initiatives, improve patient outcomes and streamline healthcare procedures. Furthermore, the time and expense involved in carrying out and upholding contractual agreements are decreased by smart contracts running on blockchain systems. Blockchain technology streamlines transactions and reduces administrative costs by automating contract execution and doing away with middlemen [29]. Smart contracts speed up procedures and lessen dependency

on third parties, which results in significant cost savings. Examples from the real estate, legal services, and insurance sectors demonstrate.

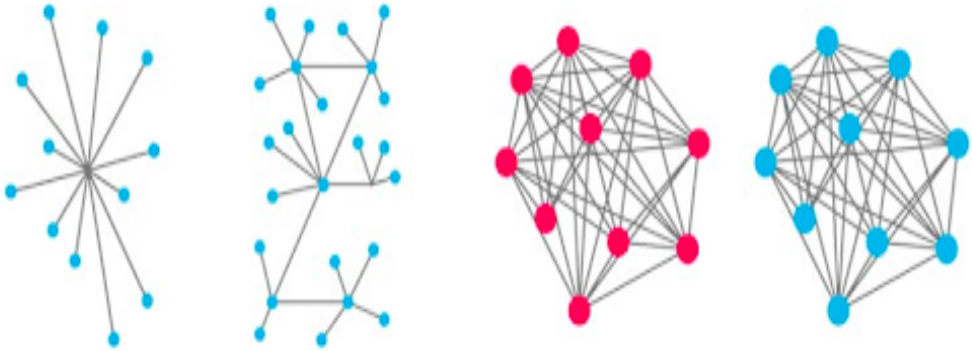

Figure 2. Structure Blockchain

The 2 The concept of decentralized technology brought by blockchain, allows each server to be connected to each other and have the same role. By establishing a kind of peer to peer network, sending digital currency will be the same as sending an email because there is no longer a central bank to mediate transactions. This centralized concept is what decentralized technology is trying to revolutionize. With the blockchain concept, this system does not have a central authority, but it can still work well. The decentralization brought about by blockchain can also be interpreted as a system, where the overall decision-making is left to the users of the system without any one individual being able to impose his will on other individuals without the consent of the majority of system users.

5. CONCLUSION

Blockchain technology offers a transformative approach to managing academic records by enhancing security, privacy, and authenticity. With its decentralized and immutable nature, blockchain eliminates the risks associated with centralized data systems, such as unauthorized access, tampering, and fraud. The integration of blockchain in academic institutions provides a secure platform for storing and sharing sensitive educational data, ensuring the integrity and authenticity of academic records. Digital certificates based on blockchain technology are particularly beneficial, as they can be easily verified and authenticated, reducing the potential for forged credentials. This is a significant step forward in addressing longstanding issues of trust and transparency in educational systems.

The widespread implementation of blockchain in education offers several advantages, including improved data security, greater privacy for students, and reduced administrative costs. By providing a decentralized system that eliminates the need for intermediaries, blockchain not only secures academic records but also simplifies their management. Blockchain's ability to enable real-time verification of certificates and academic achievements ensures that institutions can maintain accurate and tamper-proof records, providing a reliable foundation for academic credentials worldwide. As demonstrated in various pilot programs and case studies, blockchain technology can revolutionize academic record-keeping on a global scale, benefiting both institutions and students.

However, challenges remain, particularly regarding scalability, regulatory compliance, and the integration of blockchain systems into existing educational infrastructures. Despite these hurdles, the potential benefits of blockchain in enhancing the security and privacy of academic records cannot be overstated. As blockchain technology continues to evolve, it is expected to become an essential tool in modernizing educational practices, offering long-term solutions to the complex issues surrounding academic records management. With further research and development, blockchain could become a standard technology used by educational institutions worldwide to safeguard the future of academic record-keeping.

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