

## Blockchain technology in corporate governance and future potential solution for agency problems in Indonesia

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### CHRONICLE

### ABSTRACT

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The aim of this study is to determine stakeholder acceptance of the blockchain and to investigate a suitable model using a *Technology Acceptance Model* with specific reference to corporate governance through cryptography in solving decades of financial record-keeping problems. Stakeholders in corporate governance, namely customers, creditors, suppliers, communities, employees, owners, investors, trade unions and social activists, can benefit in different ways. Investors can benefit from buying equity at a lower price and selling it on a market with greater liquidity, but they will find it difficult to disguise their trades. This study argues that almost all aspects of corporate governance can be improved through the application of this technology, which results in greater transparency, increases liquidity, and lowers costs. Corporate governance will also be better because blockchain technology uses the concept of a distributed ledger which allows data to be distributed at every connected point in an efficient and accountable manner, so that all parties in the blockchain can exchange data in real time.

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## 1. Introduction

Blockchain is described as a decentralized ledger system, storing information and enabling secure transactions without the need for intermediaries. Information is stored on computers and monitored by stakeholders worldwide and ensures that no single entity, including business executives or cybercriminals, can have control over the network. The decentralized nature of blockchain coupled with speed, security and transparency make this technology necessary for those participating in corporate governance. The applications of blockchain technology are enormous, such as listing via blockchain can solve problems related to the inability of companies to keep proper and timely records of who holds their shares, thereby reducing turnaround time.

Blockchain offers new prospects for facilitating agency relationships between corporate participants, creating trust and transparency (Lafarre & Van der Elst, 2018), thereby affording a great scope for reducing agency costs for shareholders and companies through optimization and modernization of the annual general meeting (GMS) (Piazza, 2017). For example, in IBM's Hyperledger private blockchain, companies and shareholders who have sufficient shares can submit proposals (Fenwick & Vermeulen, 2019). Shareholders who meet the requirements are immediately notified and can exercise their voting rights in a short period of time (Akgiray, 2019). The voting results can then be seen by all shareholders but no shareholder can see what voting decisions were taken by other shareholders (Allen & Berg, 2020). Consumers who need financial information now do not need to rely on statements issued and verified by auditors (Singh et al., 2019). Instead, they can trust with certainty the data available on the blockchain and execute their own accounting judgments to make their own non-cash adjustments

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such as depreciation or revaluation of inventory (Murray et al., 2019). Moreover, the following are possible areas where blockchain serves as a tool for effective corporate governance vis-à-vis improving the relationship between shareholders and corporations (Leonhard, 2017). More importantly, blockchain offers the opportunity for undisclosed partners to operate securely without the involvement of any central authority or intermediary. This enables the establishment of a peer-to-peer distributed economy and paves the way for a number of applications, from e-commerce to corporate governance (Lafarre & Van der Elst, 2018). Adopting blockchain to record shareholdings can alleviate many of the long-standing problems associated with the failure of organizations to keep accurate and timely records of who owns their shares (Kaal, 2021).

A simple extension could allow the blockchain to embrace self-performing smart contracts, for example, stock options held by personnel or warrants held by external investors. Such smart contracts can diversify into areas such as financial turbulence resolution that have been contracted in advance. Blockchain can provide investors with unparalleled transparency to ensure ownership positions of equity and debt investors and suppress bad practices on the part of regulators, exchanges and listed companies (Panisi et al., 2019). If a company decides to keep its financial records on the blockchain, the scope for additional revenue and other accounting tactics could drop dramatically, and related party transactions would be much clearer. Implementing blockchain can increase the speed of decision-making, facilitating fast and efficient shareholder engagement. Furthermore, the Annual General Meeting (AGM), an untidy mandatory requirement for listed companies that suffers from procedural flaws, especially when shareholders vote remotely, has started to be modernized with the use of blockchain, thereby reducing shareholder voting costs (Lafarre & Van der Elst, 2018).

According to the UCL Center for Blockchain Technologies or simply UCL CBT, blockchain technology is not just an infrastructure for "cryptocurrencies" but presents exponential potential to change the way modern administrative work is done. The research institute UCL envisions a future where Blockchain Technology and Distributed Ledgers are widely accepted and integrated into the socioeconomic system, completely transformed (Abeyratne & Monfared, 2016). Therefore, they are gaining worldwide attention from regulators, industry and academia for the establishment of an "innovative and connected ecosystem" where not only expertise is freely shared but also resources and platforms can be easily accessed by these actors.

This phenomenon provides a detailed description of transactions in the process of the "chain" method in which each transaction is structured like a "block" and they are connected to each other, while the "smart contract" is defined as a computerized transaction protocol method that has been bound under the terms of the contract. Contract terms are a combination of the formal structure of the interface provided and the secure relationship through a computer network (Kaal, 2021). Therefore, in blockchain technology, smart contracts are stored as part of scripts on the blockchain which are stored under the relational model of the Database Management System (DBMS).

## **2. Literature Review**

### *2.1 Corporate Governance*

Corporate governance with regard to maintaining a balance between economic and social objectives is at a crossroads. Although developed countries have taken several steps to reform corporate governance, especially in the last two decades, fundamental problems in corporate governance still exist. The corporate governance system has not only failed to undermine overall GDP growth and corporate failure, it has essentially motivated firms to influence stock prices and exploit accounting practices, to offer window dressing of accounts to maximize short-term profits (Asghar et al., 2020). Prominent issues include conflicts of interest, oversight issues, accountability issues, transparency, ethical violations, accountability to stakeholders, executive compensation, data protection, and the board's approach to corporate social responsibility (Juhandi et al., 2020). The analysis of this problem illustrates that the core problem with corporate governance is not just a practical or execution problem, but rather a problem of prototyping, applicable tactics and over orientation of corporate governance methods (Fahlevi et al., 2020). For shareholders, blockchain can offer lower trading fees and a more transparent record of ownership, while allowing visible real-time observation of share transfers from one owner to another (Lafarre & Van der Elst, 2018). The unique characteristic of blockchain is that it doesn't stay static, it keeps evolving by accommodating "smart contracts" in its design, as Ethereum demonstrates. Therefore, blockchain innovations can accommodate sequencers, enabling information to be applied in a more complex range than just in peer-to-peer automated cash transmission (World Economic Forum, 2016).

### *2.2 Blockchain*

Blockchain plays an important role in effective corporate governance and involves balancing the interests of the various stakeholders of the company, such as society, financial lenders, suppliers, customers, stakeholders, and management, etc. The most important role in corporate governance is the manager, who must ensure that the board of directors has access to current and complete information. As such, blockchain helps corporate governance by making real estate, money and stock transactions transparent and conflict-free. Organizations such as stock exchanges no longer need to manually update the "stock ledger" or notify shareholders whenever shares or shares are issued or transferred. Thus, blockchain has stimulated curiosity among industries and sectors, especially in finance, and has been called "the future of financial services infrastructure" (Panisi et al., 2019). Although global banks were the first to experiment with blockchain technology, leading stock exchanges have

been rapidly keeping up and European stock exchanges such as LSE, NASDAQ, Tallinn Stock Exchange, Korea Stock Exchange and Australian Stock Exchange are the pioneers on this front. Although blockchain offers many benefits, these stock exchanges have specifically used blockchain for listing purposes and disclosure requirements. Currently, the use of blockchain focuses on issuing securities to private companies and targets institutional buyers who need less protection by securities commissions.

### 2.3 Technology Acceptance Model

The use of blockchain technology has emerged as a new phenomenon in the growth of corporate equity where technology fusion has been adapted as a friendly interface for businesses. Previous studies on user acceptance of new technologies have used the technology acceptance model (TAM) to describe users' behavior toward new technologies and the various factors that might impact this (Davis et al., 1989). Blockchain technology is creating a huge stir in the financial industry and has also had an effect on other industries (Fahlevi, 2020). Thus, it is customary to use technology acceptance models in different industries while understanding acceptance of web-related technologies and it leaves open all the parameters for understanding user acceptance (Marangunić & Granić, 2015). Taking into account all the antecedents of the technology acceptance model for understanding user acceptance and behavior, there are profound phenomena that have been explored to include the concept of user acceptance of new technologies (Alharbi et al., 2022). Given the specifics of TAM, the theoretical framework used to analyze the adaptability of new technologies to different platforms is inherently difficult (Adila et al., 2020).

## 3. Research Methodology

This type of research is verification because it is carried out to describe the value of the research construct and ensure that there is a relationship and influence between the constructs. The study setting used was a survey, with the data were collected through questionnaires which were conducted once without any comparison (cross-sectional), and no manipulation of the independent variables was carried out (Hair et al., 2011). Population is a collection of all elements or individuals who are sources of information in a study. The population in this study is business people. Based on the previous explanation that the population in this study is unknown, the number of samples in this study is determined based on the opinion of Hair et al. (2010) that the number of samples as respondents must be adjusted to the number of question indicators that will be used in the questionnaire. Assuming  $n \times 5$  to  $n \times 10$ ,  $n$  is the observed variable (indicator). In this study there are 12 indicators so that, if with a multiplication of 10, the number is 120.  $n = \text{Number of Indicators} \times 10$   $n = 12 \times 10$   $n = 120$ , so that it can be determined that this study uses at least 120 samples. However, in this study 150 samples were used to increase research precision and reduce research error (Lind et al., 2018). Using random sampling, the results of the questionnaires that have been collected must be selected randomly to maintain the objectivity of the study. Based on the explanation above, the sample in this study was 150 business people.

The data analysis technique in this study uses a structural equation model (Structural Equation Modeling, SEM) with SmartPLS software. SEM is a multivariate statistical analysis method that analyzes based on measurement models and structural models. SmartPLS is commonly used in complex models and uses many variables; the reason for choosing SmartPLS is because this software belongs to the non-parametric variance-based class so that data analysis does not require a normal distribution and can be used with minimal data, which is under 100 samples (Hair et al., 2014), even though this study uses 200 samples for the data analysis process. SmartPLS in the analysis uses the bootstrapping method or random multiplication, so that the assumption of normality and a minimum number of samples are not required. Research that has a small sample can still use SmartPLS which is often used as predictive analysis and theory confirmation in several studies (Hair et al., 2019).

## 4. Result and Discussion

### 3.1 Profile of Respondents

Respondent data in this study used Google Form and offline forms, so that they could measure accurately in the assessment of each variable in this study. Although the respondent's data collection technique is anonymous, the respondent's background is needed for completeness of the data. The identity of the respondent is needed to know their demographics and background as information material for this research. The questions before the respondent's questions in this research questionnaire are as follows:

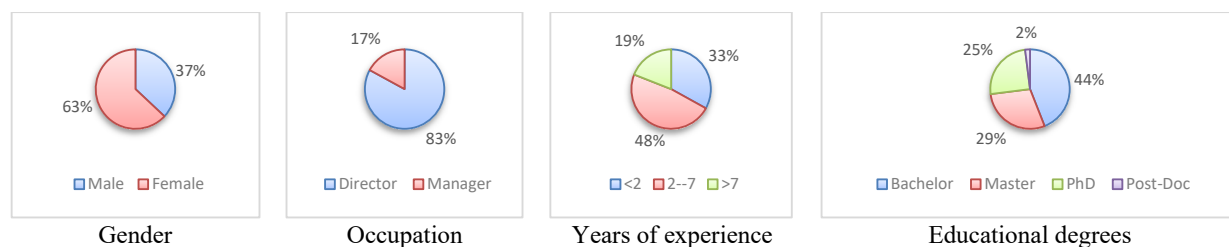


Fig. 1. Profile of respondent

Data analysis in this study used confirmatory factor analysis. Based on research variables and research indicators, the authors draw a path diagram for data analysis purposes using Smart PLS 3 software. In the Structural Equation Model, building a path diagram of a causal relationship that has been formed is a must in this analysis. Path diagrams make it easier for researchers to see causal relationships to be tested and used for path analysis in estimating their strength.

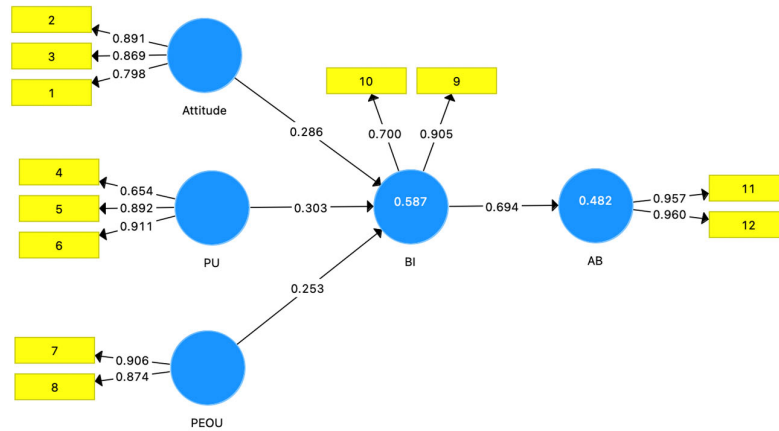


Fig. 1. PLS Algorithm

Based on the loading factor value above, all indicator items consisting of 12 research items have a high convergent validity value, where the indicator items have a loading factor above 0.5 and are significant. In research, a variable is said to be quite reliable if the variable has a construct reliability value greater than 0.7. Based on the results of Cronbach’s alpha analysis, it shows that all constructs are above 0.7 and are declared to have passed the reliability test.

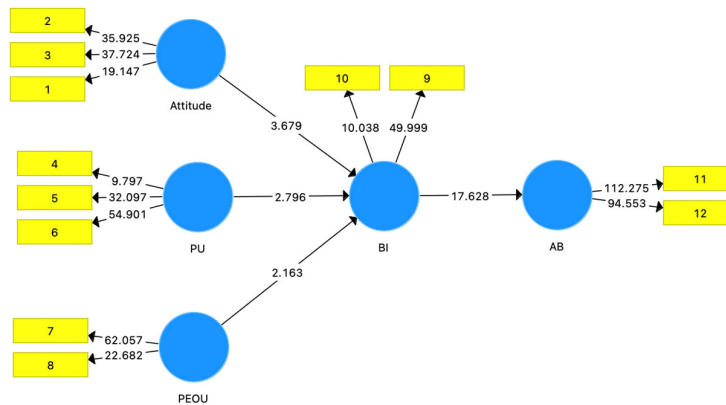


Fig. 2. Bootstrapping

The results of the bootstrapping above are used to test the hypothesis; all of the indicator items in all constructs have a statistical value greater than 1.96. In conclusion, all of the indicator items above are able to measure the existing constructs. Meanwhile, to test the effect between variables, the statistical values from the Smart PLS analysis were compared with the table values. The following table provides the results of the relationship between constructs.

Table 1  
Path Analysis

	T Statistics ( O/STDEV )	P Values
Attitude → BI	3.679	0.000
BI → AB	17.628	0.000
PEOU → BI	2.163	0.031
PU → BI	2.796	0.005

Based on the results of the research above, it is known that attitude, PEOU and PU have a significant influence on BI and, if we look deeper, attitude has a greater influence because the value of the T-statistic is the highest among other exogenous constructs, which is 3,679. Furthermore, the influence of BI on AB has a significant influence and has a fairly large T-statistic of 17,628, this indicates that the causal relationship between the two constructs is quite large. Blockchain is a technology that was first successfully used in the development of cryptocurrencies allowing for peer-to-peer (P2P) transactions to occur safely, even without using intermediaries (banks/financial institutions). Not only in cryptocurrency, blockchain technology is also undergoing development so that it can be applied to various sectors, from the financial industry to government systems. Blockchain technology is then considered as an innovation and new breakthrough that will drive change.

Blockchain provides opportunities for the development of financial systems by having many advantages, including expanding access to financial services, more efficient business processes, increased technology security, relatively cheaper transaction and processing costs, and more efficient regulatory and IT costs. Even so, until now BI has not implemented this in Indonesia. BI assesses that blockchain also has challenges that are no less than the advantages, such as in consumer protection, disintermediation, data security, financial system stability, financial integrity, money laundering and terrorism financing, cybercrime, and monetary policy effectiveness. However, a decentralized system that allows each party to have a copy of the data as well as a new data validation process that network members can do on the blockchain enables this technology to overcome the challenges of today's organizations. The adoption of blockchain technology can be applied in various sectors, from government, logistics, banking and finance, to health services and the aviation industry. In the healthcare sector, blockchain gives healthcare providers the ability to transfer assets such as patient data and information securely and efficiently. Healthcare providers and hospitals are better equipped to personalize care, modernize healthcare delivery, and reduce healthcare costs. In the supply chain sector, understanding and tracing the origin of any product or service can be critical to meeting regulatory requirements, preventing fraud or increasing customer trust. Blockchain functionality can help alleviate many of the pain points in data sharing in the aviation industry. At airports, passengers usually have to be verified at multiple points and not all identification systems can be integrated.

## 5. Conclusion

For companies in Indonesia that adopt blockchain, each party involved will be more confident that all members can fulfil their obligations and there will be no fraud in contract making thanks to the tamperproof nature of blockchain. Corporate governance will also be better because blockchain technology uses the concept of a distributed ledger which allows data to be distributed at every connected point in an efficient and accountable manner, so that all parties in the blockchain can exchange data in real time. Blockchain implementation for trade is a breath of fresh air in the process of trade transactions, both domestic and international (export-import). In addition, conventional trade finance transactions are often considered complicated, inefficient, and tend to take a long time. This condition is exacerbated by the COVID-19 pandemic, which has an impact on area and activity restrictions, making various procedures in transactions also hampered. Blockchain utilization in trade will save transaction time, minimize the risk of fraud, and simplify complex processes that have been a challenge in conventional trading.

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