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BLOCKCHAIN ACCEPTANCE ANALYSIS USING THE UTAUT2 MODEL

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Abstract

MSME is the primary driver of the Indonesian economic sector, which, unfortunately, remains struggling in controlling and adopting technology, including Blockchain technology. Blockchain is an effective technology that includes all business activities processes and improves the performance and security of company data. This study explored behavioral intervention in adopting the Blockchain technology in MSME Phil's Auto, Kinandara Boutique, Sabana Restaurant, and Narassi Coffee. The analysis performed in this study was qualitative data analysis on interview results with the MSMEs' owners. The study results show that the four MSMEs are interested and willing to implement Blockchain technology. Blockchain is expected to help the company improve business activity effectiveness and company data security. Future studies are expected to provide solutions to MSME problems in adopting Blockchain technology.

Keywords*: entrepreneurship; Blockchain; MSMEs; UTAUT2; technology; adoption*

INTRODUCTION

Based on the Statistics Central Bureau of Indonesia survey, the number of Micro, Small, and Moderate Enterprises (MSMEs) in Indonesia reaches 64 million. This number is 99.9% of all businesses operating in Indonesia (Santia, 2020). MSMEs has contributed to the GDP rate of Indonesia by 61.07%. Also, MSME in Indonesia can collect investment funds in Indonesia by 60.42% and has absorbed 97% of total laborers (Ministry of Finance, 2021). Several studies and literature mentioned that MSMEs is vital in improving developing country's economic structure, particularly Indonesia (Setiawan et al., 2021). Therefore, MSMEs is one of the most significant contributors in encouraging national economic growth (Salim et al., 2020)

According to Dewi and Mahendrawathi (2019), internal and external factors affect MSMEs' different conditions. One of the affecting factors is technology advances encouraging digitalization behavior. Digitalization is currently presented through cashless payment or application features to conduct trading transactions of goods and services that several business lines have applied. It influences the social lifestyle that boosts MSMEs to implement digitalization behavior (Setyanto and Sunarjo, 2021). Digitalization application on MSMEs will facilitate the process of integrating businesses. Besides, the benefits of digitalization application are reducing costs expensed by MSMEs, efficiency in the transition process, and helping customers see products in real-time (Djakasaputra et al., 2021). One of the MSMEs digitalization forms is using the blockchain system functioning as the system in helping to run the business process.

Blockchain is a technology that has a database with encrypted information access that is accessible in real-time (Smith, 2020). Blockchain utilization applies to the financial sector and non-financial sectors such as MSMEs (Tedjakusuma and Yahya, 2020). The benefit of using a Blockchain system will be the ease of accessing needs or desires in real-time. Also, information on market valuation is readily accessible; thus, users can track current development. Blockchain system application on businesses is usually used to help manage the supply chain system, logistics, audit process, and transaction (Lipovyanov, 2019).

Currently, Blockchain system application has been applied in several sectors. MSMEs is one of the targets of Blockchain system applications to facilitate the interaction of various sectors. Also, data transparency is one of the objectives of applying the Blockchain system (OJK, 2020). Rusyani et al. (2021), stated that transparent

information to stakeholders and the community is one of the ethics in running a business process. However, Indonesia's Blockchain system application is still in the early stage, i.e., the stage to understand Blockchain system utilization in daily life, where its use in several sectors is relatively minimal (William and Dollan, 2020).

A precedent study by Ilbiz and Durst (2019), asserted that a Blockchain system application negatively impacts the resources that do not fulfill the Blockchain system application standards. However, the Blockchain system can facilitate the business process of MSMEs since literature study results have proven that Blockchain can be the absolute and innovative solution. Unfortunately, studies on Blockchain system utilization are limited. Therefore, this study aimed to discover the interest and the behavior of users. The study objects were MSMEs Phil's Auto, Kinandara Boutique, Sabana Restaurant, and Narassi Coffee, examining Blockchain technology utilization using the UTAUT2 model. UTAUT2 variables comprise performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit.

METHODS

Data employed in this study were depth-interview result on four participants, i.e., owners of MSMEs Phil's Auto (P1), Kinandara Boutique (P2), Sabana Restaurant (P3), and Narassi Coffee (P4). The data collected then went through the stages of qualitative data analysis, i.e., data reduction, data presentation, conclusion drawing, and verification (Indrawati, 2018; Bin-Tahir et al., 2017; Sekaran and Bougie, 2016).

According to Sekaran and Bougie (2016), qualitative data collection resulted in massive data; hence, data reduction is the first stage of qualitative data analysis. It is carried out by documenting the summary of interviews into the interview matrix (Indrawati, 2018). Meanwhile, data visualization refers to data presentation used to find the solution or to draw conclusion of the data faster or better (Ware, 2021). On the conclusion drawing stage, correlation interpretation is performed on the analyzed data (Baumeister and Hamilton, 2020), so that later it can provide solutions to the problems in this research.

The study adopted the Unified Theory of Acceptance and Use of Technology (UTAUT 2) model aiming to express the behavior and responses of participants regarding Blockchain application. Venkatesh et al. (2012), argued that this model is the development of the previous model and combining several new constructions, such as hedonic motivation, price value, and habit. Furthermore, the UTAUT 2 model application can explain these differences in users' interests and behavior when applying a new system (Correa et al., 2019). Tamilmani et al. (2021) and Venkatesh et al. (2012), expressed that UTAUT 2 consists of seven following indicators: (1) Performance expectancy: measure the level of user expectations or confidence to measure the ease of application. This study measured the use of Blockchain; (2) Effort expectancy: understand the effort that the user in implementing a system will make; (3) Social influence: the influence or perception of users in understanding and applying a system. This study used the level of perception of MSME users on the trust of others in adopting the Blockchain system; (4) Facilitating condition: this study examined the condition of user facilities in adopting a system; (5) Hedonic motivation: measuring one's level of pleasure in using or implementing a system; (6) Price value: the comparison between the perceived benefits and the costs incurred by users to adopt the new system; (7) Habit: discover users' behavior and experience in adopting a system.

RESULTS

This section will explain the result of qualitative data analysis from depth-interview conducted on four participants. Based on the depth interview results, it is discovered that MSMEs Phil's Auto, Kinandara Boutique, Sabana Restaurant, and Narassi Coffee have not implemented Blockchain technology in the company's business activities. Moreover, it was also discovered that the four MSMEs are interested in using Blockchain technology and expect that it will help the company's business activities. The participants answer summary in the study is presented in Table 1.

Table 1. Summary of Participant Answers

	Phil's Auto
1.1	Blockchain is expected to help in the automation of transactions and in managing the company's inventory.
1.2	The use of Blockchain technology can give resource person 1 (P1) its own pleasure because it can make Phil's Auto a more advanced company.
1.3	Phil's Auto still wants to implement Blockchain even though this technology is difficult to use.
1.4	The Phil's Auto facility already supports the application of Blockchain technology.
1.5	Under normal conditions and when the company's demand is relatively high, the company will continue to implement Blockchain even though the cost of implementing the technology is high.

	Kinandara Boutique
1.1	Blockchain is expected to increase the effectiveness of production distribution, company bookkeeping, and increase the security of company data.
1.2	Blockchain application is also expected to form the image of companies that are willing to innovate and adapt to the application of new technologies. So, this also gives resource person 2 (P2) its own pleasure as individuals who are enthusiastic about technological developments.
1.3	Initial adjustments in the use of Blockchain will require considerable effort. However, by adapting and training, Blockchain is expected to be put to good use so that it can support company innovation.
1.4	The facilities owned by Kinandara Boutique currently support the use of Blockchain.
1.5	If Blockchain provides benefits to Kinandara Boutique, then the high costs incurred by the company will be worth it.
	Sabana Restaurant
1.1	Blockchain is expected to help in transparency of company transactions, clear bookkeeping, and can minimize errors in transaction activities.
1.2	The application of Blockchain is believed to provide benefits, so there is interest from resource person 3 (P3) to adopt a Blockchain system in his business, and in everyday life.
1.3	Blockchain implementation requires a huge effort because P3 must learn more about Blockchain, so it takes a long time to implement the technology.
1.4	The facilities owned by the company currently do not support the implementation of Blockchain. However, the company is willing to upgrade its infrastructure to facilitate the adoption of the technology.
1.5	According to P3, the company is willing to spend quite a lot of money on implementing Blockchain.
	Narassi Coffee
1.1	Blockchain is expected to assist in the transparency of corporate data, data management and processing, maintain data security, and assist in the audit process.
1.2	The application of Blockchain technology is also expected to create added value for marketed products and assist cooperative relationships with farmers so that later they can improve business performance both internally and externally.
1.3	If Blockchain will provide benefits in business activities, then companies will seek to facilitate the application of the technology. However, if the company's human resources have not been qualified to use Blockchain, the company will delay the application of the technology.
1.4	The company's facilities currently do not support Blockchain implementation. However, the company will strive to provide facilities to support the implementation of Blockchain.
1.5	The company has not concluded the relationship between the required costs and the benefits of Blockchain because it has not tried to implement the system as asserted by resource person 4 (P4).

DISCUSSIONS

According to Wu et al. (2021), Blockchain is a ledger where data is recorded, providing data transparency and maintaining data security and privacy. Meanwhile, according to the understanding of P1, Blockchain is a cloud-like system that can record transaction data and company consumer data more securely. Moreover, P1, stated that Blockchain is expected to help transaction automatization and manage Phil's Auto's inventory.

Following Felin and Lakhani (2018), the Blockchain technology enables companies to transact transparently, without barriers, with low cost, and automatic transaction. Also, Blockchain allows companies to track the product origin or product location in the supply chain (Kim and Laskowski, 2018). Therefore, supply chain transparency will facilitate product quality monitoring (Xu et al., 2019), and improve the optimization of company inventory management (Treiblmaier, 2018).

P1, also suggested that Blockchain technology will provide pleasure for P1 because it makes the input and storage of company data easier and simpler and makes Phil's Auto a more advanced company by using this technology. Furthermore, P1 also stated the possibility of adopting Blockchain technology in daily life, such as recording personal expenses or saving personal documents safely.

According to P1, Blockchain application is easy if companies have willing to learn and use such technology. Therefore, P1 asserted that Phil's Auto is interested in applying Blockchain, although this technology is challenging to use. Moreover, company facilities have supported the technology application, such as devices and sufficient internet connection (P1). Besides, if Phil's Auto's customers have used Blockchain, it is easier for the company to share data access without explaining the system to the users.

Regarding the Blockchain application cost, P1, mentioned that implementing Blockchain is expensive, primarily if the economy is affected by COVID-19. Thus, the company will prioritize the budget for other things, such as labor. However, in a normal situation and when the company demand is high, Phil's Auto will implement Blockchain regardless of its high technology application cost (P1).

Based on the depth-interview, it was discovered that Blockchain is expected to help Kinandara Boutique to improve the product distribution system and track bookkeeping recording (P2). According to Anusha, et al. (2019), Blockchain allows the company to create tags of information from producers to be sent to distributors, which then sent to wholesalers and retailers. Therefore, the company can extract information and track the product progress from each supply chain stage (Anusha, et al., 2019), including in the production and product distribution processes. Blockchain also enables the company to record each transaction; thus, the company can tract the transaction, if necessary (Gupta and Sadoghi, 2020).

Furthermore, Blockchain is also expected to improve data security and create a company image that desires to innovate and adapt on novel technology application (P2). Daneshgar, et al. (2019), asserted that Blockchain technology provides data security by data authentication and transaction recording encrypted by the system. As an enthusiastic individual towards technology advances, P2 is intrigued with the idea of Kinandara Boutique using Blockchain technology Blockchain (P2). Moreover, it is supported by Blockchain popularity and the company's inner circle that adopts this technology (P2).

According to P2, an initial adjustment in using Blockchain will require an enormous effort. However, by adaptation and training, Blockchain is estimated to be utilized well to improve company innovations (P2). The same thing goes for the cost aspect. If Blockchain technology delivers benefits for the company, the technology will equal the cost expensed by the company (P2). Moreover, the facilities of Kinandara Boutique have supported Blockchain implementation (P2).

Blockchain system application in Sabana Restaurant has not been implemented due to the lack of information acquired by the participant regarding Blockchain. Also, Blockchain utilization is unfamiliar for people who do not understand current technological advances. However, the participant believes that Blockchain application will improve business performance and is secure to use. Rapid technology advances and development encourage Sabana Restaurant to understand Blockchain system implementation (P3). P3 expected the Blockchain system to help the transaction and business bookkeeping systems. Also, transaction transparency is essential to facilitate the business proves, primarily in the cooperation process with suppliers. P3, also stated that Blockchain technology implementation would provide benefits by minimizing errors in transactions with customers. It is in line with Wahyuni, et al. (2021), suggesting that utilizing the Blockchain system can facilitate transactions and improve business efficiency.

According to Bahga and Madisetti (2016), Blockchain system implementation will help the business process, minimize transaction errors, and document the business process history, such as operational, distribution, and finance. Also, Oh and Shong (2017) mentioned that easy transactions would create an efficient business process and document business activities, e.g., transaction, distribution, and verification processes. Therefore, the Blockchain system can help with an automatic bookkeeping system. Moreover, Blockchain can create digital contracts (smart contracts) and facilitate people in business cooperation.

The benefits created through the Blockchain system will require considerable effort to build a business system. The same thing was stated by P3, that it takes quite a long time to understand the Blockchain system. Another factor is the readiness of human resources. There needs to be training to prepare HR in implementing the Blockchain system. P3, stated that it would delay applying the Blockchain system at this time. According to Ilbiz and Durst (2019), preparing resources is one of the main factors for success in adopting a new system or technology.

The current facilities owned by Sabana Restaurant are still inadequate to implement the Blockchain system. This can be seen from the recording of reports that are still done manually, so there is still a need for infrastructure improvements to apply the Blockchain system. Then, the rapid development of technology encourages P3, to improve its infrastructure by understanding the Blockchain system by attending training and being willing to spend large enough funds to implement the Blockchain system if one understand the advantages and benefits felt when using the Blockchain system. The Blockchain system will later be used to manage assets such as personal letters and be used for business prospects that are currently being planned.

The current Blockchain system is still not implemented by Narassi Coffee. This is because P4, still wants to know more about implementing the Blockchain system in the business world. However, P4 states that implementing the Blockchain system can educate users on the ease of transactions. Thus, it can provide a new experience in conducting transactions, which will provide added value to a brand. The implementation of the Blockchain system in business is known through P4 business partners who have started implementing it in their business activities (P4). It encourages P4, to apply the Blockchain system if they understand it and the business has been running for some time. According to P4, the Blockchain system will assist its business activities, so it is hoped that it can assist in providing experience and educating customers about the process of seed to coffee, data security, data management, good data processing, and can assist in recalling data that has been retrieved on the Blockchain system. In addition, implementing a Blockchain system is expected to assist in the audit

process. The implementation of the current Blockchain system has been designed with an integrated system to avoid data or information manipulation (Simaiya et al., 2020).

Arun et al. (2019), stated that creating an attractive business model, such as adopting a Blockchain system, will create a new experience for customers. It will create added value for a business. Also, Rana et al. (2017), suggested that value-added is created from one's interest in adopting a new system due to the influence of colleagues, and the surrounding environment, thus encouraging someone to apply a system that will affect the value. In addition, Blockchain is believed to be able to improve business performance through fast processes and data transparency to educate customers (Treiblmaier and Sillaber, 2021). Furthermore, the Blockchain is decentralized so that all stakeholders can see its transaction activities, and every activity carried out is recorded and can be directly audited by the system (Yadav et al., 2020).

The benefits created by the Blockchain system will require a tremendous effort in its implementation. P4 states that building a Blockchain system requires enormous effort. It starts from understanding the Blockchain concept, which will take a long time, and preparing Human Resources (HR) for Blockchain implementation through training. In addition to taking a long time, P4 stated that one of the reasons the Blockchain system has not been implemented is because the current facilities do not meet the standards in applying the Blockchain system, so it is necessary to improve the infrastructure to apply the Blockchain system. Wamba and Queiroz (2019), asserted that supporting facilities affect performance in adopting a Blockchain system. However, there is a need to improve business performance, data security, and data management, so P4 intends to improve the infrastructure that adopts a Blockchain system to improve business performance. Furthermore, for Blockchain implementation costs, users cannot estimate the number of funds issued because they have not tried to apply the system at this time. In the future, if the use of Blockchain in business activities is sufficient, it will implement the Blockchain system in everyday life, especially in managing important company assets.

CONCLUSIONS

Based on the qualitative data analysis described previously, it can be concluded that the owners of MSMEs Phil's Auto, Kinandara Boutique, Sabana Restaurant, and Narassi Coffee are interested and want to apply Blockchain technology to help the company's business activities. Blockchain is expected to help increase the effectiveness of transaction processing, data processing, and distribution processes in the supply chain. In addition, Blockchain is also expected to provide data security and form a company image that is willing to innovate using new technology. MSMEs Phil's Auto and Kinandara Boutique facilities currently support the application of Blockchain technology. However, the facilities at the MSMEs Sabana Restaurant and Narassi Coffee still do not support this technology. However, the four MSMEs in the future will seek to improve facilities to support Blockchain implementation.

In addition, the high cost of implementing Blockchain technology is not a problem for MSME Kinandara Boutique and Sabana Restaurant because it is commensurate with the benefits that the company will get. Meanwhile, high costs will be a consideration for MSME Phil's Auto if the company's demand is low. MSME Narassi Coffee has not been able to conclude the relationship between the required costs and the benefits of Blockchain because it has not tried to implement the technology. Further research is expected to solve MSME's obstacles in adopting Blockchain technology.

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