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# Accepting Financial Transactions Using Blockchain Technology and Cryptocurrency based on the TAM Model: A Case Study of Iranian Users

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## ARTICLE INFO

## Abstract

This study aims to design a technology acceptance model (TAM) to accept financial transactions using blockchain technology and cryptocurrency transactions. By employing an unlimited sample of users by selecting 154 participants based on the Morgan table and analyzing the surveyed data with the Partial Least Squares-Structural Equation Modeling (PLS-SEM). The results indicated that Perceived ease of use and Perceived usefulness positively and significantly impact the attitude toward cryptocurrency transactions supported by blockchain technology. Also, the attitude has a positive and significant impact on Iranian users' behavioral intention toward cryptocurrency transactions supported by blockchain technology. In addition, at a certain level of experience, users feel confident and can trust blockchain-based applications. Accordingly, governments, companies, and decision-makers should consider the results achieved in this study. The current study is the pioneer study in an emerging economy like Iran. The results may help policymakers mandate new regulations to new circumstances. This study mentions the influences of ease of use and usefulness of cryptocurrency transactions supported by blockchain technology.

NUMBER OF REFERENCES
48

NUMBER OF FIGURES
4

NUMBER OF TABLES
5

## 1. Introduction

In recent decades, advanced personal computers (hardware and software), tablets, and mobile phones have significantly influenced customers' lives. It had the same effect on the global market and the development of the economic system. The dedication to designing and generating an excellent mobile application has increased due to market demand and the rapid development of information technology (Abbaszadeh, Salehi and Faiz, 2019; Zhonggen and Xiaozhi, 2019; Albayati, Kim and Rho, 2020). The financial market has many new technologies launched every day, but most cannot succeed or survive. Blockchain has been in the global market for more than ten years and seriously invades the finance market and threatens the future of traditional businesses. As Oh and Shong (2017) said, Blockchain is a distributed ledger created by blocks containing transaction details connected in chronological order to form a series of chains. Therefore it is a distributed ledger in which participants of the Blockchain peer-to-peer (P2P) network, not the central administrator, generate blocks.

It is known as a trustful technology (Miakotko, 2017). However, Blockchain and cryptocurrency are unexpected technologies, and it is difficult to predict future adoption in the financial system (Shahzad et al., 2018). Moreover, it has a wide spectrum of applications ranging from finance to social services and has greatly influenced the emerging business world. Since blockchain technology is embedded in e-commerce services, cryptocurrencies are gaining huge prevalence. Bitcoin and few such cryptocurrencies have utilized the decentralized nature of Blockchain. Moreover, several companies have developed blockchain proofs-of-concept, with some heading towards production deployments. So, commercial Blockchain is largely in the pilot or proof-of-concept stage across a broad range of use cases, with payments and supply chain being two of the most promising use cases(George et al., 2019).

Blockchain can be considered a distributed database system containing immutable ledgers prone to attack by malicious users (Ghosh et al., 2020). For example, Deloitte[1] recently surveyed 1000 companies in seven countries about integrating Blockchain into their business operations. Their survey found that 34% had a blockchain system already in production, whereas 41% expected to deploy a blockchain application within 12 months (Deloitte, 2016). Hence, Blockchain can transform conventional approaches for handling dark side effects into value-creating activities. The results of automated textual analysis on a corpus of expert ideas provide preliminary support for several aspects of blockchain governance. Furthermore, the study articulates a decision frame that directors can use for optimal relationship governance and identifies several areas for future research (Mishra, Kukreja and Mishra., 2022).

In recent years, given the advent of new technologies, it has been necessary to design a new model, create a new perspective, and help to adopt blockchain technology among the Iranian users due to the lack of internal exploratory research and lack of attention to the specific culture of a particular country in foreign studies. Therefore, to implement the technology acceptance model (TAM) in financial transactions supported by blockchain technology, the present study´s innovation is that it intends to answer the determinants of behavioral intentions of Iranian users/customers with cryptocurrency transactions; by using blockchain-based applications.

## 2. Theoretical Foundations and Literature Review

Over the past decade, blockchain technology has become a hot topic for many new operating systems, especially in financial applications, while still being used by the users/customers at the lowest expected level (Wunsche, 2016). This concern has led us to look for reasons for the intentions

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1 . Deloitte is one of the Big Four accounting organizations and the largest professional services network in the world by revenue and number of professionals, with headquarters in London, England.

of users/customers to use blockchain technology while most participants still use traditional banking services. However, this has resulted in high costs and time without privacy and control (Martins, Oliveira and Popovič., 2014). Moreover, there has been considerable success in accepting new IT service users (Venkatesh and Davis, 2000). So that there is sufficient theoretical and empirical knowledge to support the TAM (Davis, 1989), many authors and researchers have sought to use TAM as a powerful model for accepting new technology among users (Granić and Marangunić, 2019). Blockchain is a technology to secure the integrity and reliability of transaction records without a trusted 3rd service provider by having all the participants in the network create, record, store and verify transaction information jointly, and has the structure to realize various application services based on distributed network infrastructure using security technologies including Hash, Digital Signature and Cryptography (Bahga and Madisetti, 2016). This Blockchain technology was prepared to safely save and use a cryptocurrency called Bitcoin. Blockchain 1.0, which had the main functions of issuing, distributing and transacting digital currencies as the core technology of Bitcoin, now defeats the limitations of the present Bitcoin and is being developed into Blockchain 2.0, getting for expansion into various areas (Financial Services Commission, 2016).

Various models have been proposed for technology acceptance. These models include the theory of reasoned action, TAM, planned behavior theory, theory of planned behavior analysis, integrated technology acceptance model, and unified acceptance and application of technology (Ahmadi Deh Qutbuddini, 2010). Among the above theories, TAM has been one of the most widely used models for examining the acceptance and use of information technology (Venkatesh and Bala, 2008). On the other hand, the representative technology of Bitcoin 2.0 is Ethereum. Besides the cryptocurrency function, Smart Contracts, in which various types of schemes for the transaction scripts of Bitcoins are made possible, are recognized. It is expected that Blockchain will be expanded to a platform in which various decentralized applications are developed and performed, including contracts for real estate and online voting (Tapscott and Tapscott, 2016)

In the late 1980s, Davis proposed TAM based on the theory of logical action by Ajzen and Fishbein (1980) (Bagozzi, 2007; Park et al., 2009; Hernandez, Jimenez, and Jose-Martin, 2008, cited in Farzin Yazdi, Baradar, and Ghaebi, 2013: p. 173). TAM uses blockchain technology through the behavioral intention of individuals to use technology. According to Davis (1989), in order to accept technology, two essential factors must be taken into account: perceived ease of use and perceived usefulness of that technology because these two factors affect the attitude of participants towards the use of technology and cause them to decide to use that technology ( Farzin Yazdi, Baradar, and Ghaebi., 2013: p. 173). In other words, when users perceive a system to be easy to use, their perception of its use also increases.

In Figure 1, TAM strongly supports the user's acceptance and behaviour towards new technologies by finding appropriate decision-making tools that may affect the new system's success. In this section, a list of customer behavioral intention indicators is specified to measure the impact of these indicators on blockchain acceptance.
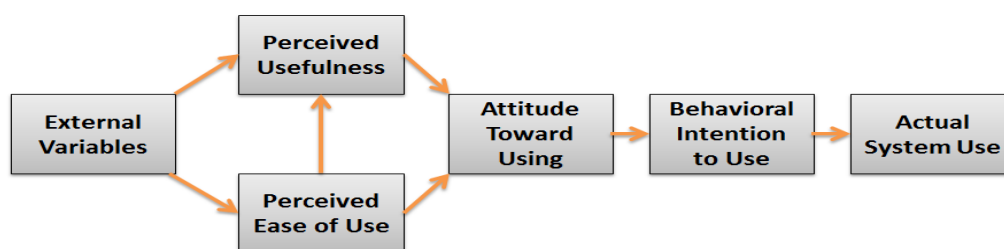


**Fig. 1.** Technology acceptance model TAM (Davis, 1989)

The importance of customers' acceptance of new technology is felt in its feedback. Inventors, for example, receive few comments on technology feasibility and then move on to improve the company's invention. In addition, more information and more accurate predictions can increase the likelihood of acceptance (Tornatzky, Fleischer and Chakrabarti., 1990) that, in turn, can predict the actual desire to use a particular technology by measuring the customer's behavioral intent (Salloum et al., 2019). However, IT is claimed to positively affect the customers' performance: a great need to use advanced technology to adapt to different tasks (Goodhue and Thompson, 1995). Therefore, blockchain technology can be a significant technology that the markets need. With this new technology, many industries can develop and advance. Furthermore, using blockchain technology can improve the quality of services (Aste, Tasca and Di Matteo ., 2017).

Recently, blockchain technology has grown rapidly globally, offering various solutions to secure transactions and services. Blockchain technology is based on the usual structure of databases but decentralized. Each node in this network is responsible for encrypting, authenticating, and validating transactions and storing these transactions within blocks. In this technology, both parties to a transaction will perform a transaction without a third party or intermediary to authenticate and validate the parties. Yet, other benefits of Blockchain include powerful users, durability, reliability and longevity, integrity, transparency and immutability, and faster transaction with lower costs (Bahga and Madisetti, 2016; cited in Golosova and Romanovs, 2018). In addition, embracing new, tradable technology is so complex and costly that failing to implement such information technology would cost millions of dollars (Vankatesh and Bella, 2008), which increases the need for proper forecasting of market needs. However, the acceptance or implementation of technology has become a major concern for many organizations to achieve tangible or intangible benefits (Jasperson, Carter and Zmud., 2005). Moreover, from the perspective of financial institutions, the emergence of Blockchain does not just have technical significance – the emergence of a highly efficient database system – but has the possibility that if the business model of existing financial intermediaries disappears or gets reduced, the financial services relying on them can disappear altogether, or some of them can be replaced, and financial transaction patterns of consumers can be changed. Also, it was discovered that the distributed characteristic of Blockchaincannot be applied when developing financial services (Oh  and Shong, 2017)

Also, in the research literature, Kazemian et al. (2020), by an unlimited sampling, with a sample of 376 individuals, indicated that perceived usefulness and social image significantly affected customers' attitudes toward using Tejarat Bank mobile. But the perceived ease of use did not have a significant effect. Manzoor and Norouzi (2019) found that actual benefits of blockchain technology in the energy sector could be billing, sales and marketing, exchange and market, process automation, security, and data management, protecting the privacy of the transaction parties, sharing resources in the fields of wholesale energy exchanges and supply sector, digitalization, IoT platforms, and peer-to-peer and decentralized exchanges of energy. Furthermore, Rahimi and Bushehri (2019), using the Delphi technique, identified the key performance measures of the defence industry's supply chain and, then, using the qualitative research method of content analysis and using semi-structured and in-depth interviews, studied the role of blockchain technology in each of the key criteria of the defence industry supply chain. They found that the proper use of this new technology could improve the defence industry's supply chain performance. Rakhshan Dadi and Hosseini (2019), using the qualitative analysis method, studied and explained blockchain technology and its applications in the IoT and concluded that blockchain technology could be used effectively in health care privacy and access to patient data. Mostafavi, Ebrahimi Ordaklu and Abbasi. (2019) indicated that blockchain technology effectively sped up transactions, increased security, combated bank embezzlement, stored

customers' information, and reduced the time and costs associated with banking operations. Mullah Hosseini and Forouzanfar (2019) presented a local technology acceptance model among the managers of these companies. According to their results, the two factors of attitude to use and intention to use had the greatest impact on technology acceptance. Furthermore, Asadollahi and Choobineh (2018) and Jahanbin et al. (2018) pointed out the importance of blockchain technology. In an empirical study, Alam Beigi and Ahangari (2014) studied the agricultural promoters (120 participants ) in West Azerbaijan province and by, identifying the external variables that affect the two aspects of perceived usefulness and ease of use as the two aspects of the TAM showed that the experience variable had a significant effect on perceived utility, and was able to predict 77% of perceived utility changes. In addition, Farzin Yazdi, Baradar, and Ghaebi. (2013) considered the perceived usefulness, ease of use, and attitude towards the most factors affecting RFID acceptance among 24 librarians of Yazd University libraries.

Al-Emran, Mezhuyev, and Kamaludin. (2020), using the partial least squares-structural equation model (PLS-SEM), studied 416 undergraduate students in IT at Pahang University, Malaysia, and showed that acquisition, application, and protection of knowledge had positive effects on the perceived ease of use and usefulness. Furthermore, Al-Bayati et al. (2020), through an online survey of 251 users of blockchain technology and using PLS-SEM, showed that users are receptive to blockchain-based applications at a certain level of experience and are encouraged to use them with a high level of confidence. Salloum et al. (2019) studied 435 students at 5 universities in the UAE. They found that system quality, computer self-efficacy, and computer-game play significantly impacted perceiving the ease of use of e-learning. In addition, the quality of information, perceived pleasure, and accessibility positively affected the perceived ease of use and usefulness of the e-learning system. In addition, Al-Emran, Mezhuyev, and Kamaludin. (2018), focusing on 152 software engineers from various software development companies in Malaysia, indicated that perceived usefulness, ease, organizational and team structures, maturity, and effectiveness significantly impacted technology acceptance adoption. According to Shahzad et al. (2018), perceived awareness and reliability significantly impact the intention to use bitcoin, while perceived usefulness explains, to some extent, the relationship between ease of use and intention. Folkinshteyn and Lennon (2016) concluded that bitcoin and blockchain technology, in general, were valuable supplements to existing financial technologies but were not perfect substitutes for all applications. Martinez, Oliveira and Popovič. (2014), focusing on 249 banking cases in Portugal, found that the most important factor in explaining internet banking behavior was behavioral intent to use internet banking.

## 3. Research Methodology

The instrument used in this survey study is a questionnaire based on Likert scale scoring (scores 1 to 7: strongly agree (7), agree (6), somewhat agree (5), neither agree nor disagree (4), somewhat disagree (3), disagree (2) and strongly disagree (1)). The collection method has been the documentary review of books, articles, and previous research. The present paper studies Iranian users/customers (investors and traders) using blockchain technology with different backgrounds and experiences (government employees, private sector employees, students, etc.) who transact money by technology for domestic and international purposes. Since there is no specific physical place to make these trades, the survey is done randomly. Although regional and cultural aspects can change the results, the results will not be affected by culture due to the focus on the Iranian culture in this study. In order to sample this unlimited population, 178 participants were selected from the available random sampling method using the Morgan table. After sending the questionnaires online, among the target users, finally, 154 questionnaires were collected. This research is applied in purpose and is descriptive survey and field-

exploratory in data collection. In order to measure the variables used in the research, the standard questionnaire of Al-Bayati et al. (2020) was used.

The study also added four demographic questions to classify the criteria. The collected data were analysed using the Smart-PLS 3.2 software using PLS-SEM for statistical analysis. Since this study is exploratory, the PLS-SEM method is the best way to find the most accurate results (Hair et al., 2016; Henseler, Ringle and Sarstedt., 2015). Moreover, for the reflective measurement model (Hair et al., 2016), we must consider all external factors and the average variance extracted (AVE). Finally, we will measure path coefficients in terms of the structural model (Selya et al., 2012). Accordingly, we will use all the mentioned criteria to support the measurement and the structural model.

According to the conceptual model of Figure 1, the structures of the TAM core include behavior intention, attitude, perceived usefulness, and perceived ease of use. Therefore, according to this classification, the hypotheses of this study are:

**H1:** The attitude of the Iranian users has a significant positive effect on the behavioral intention in cryptocurrency transactions;

**H2.** The perceived usefulness by the Iranian users has a significant positive effect on the attitude towards cryptocurrency transactions;

**H3.** The perceived ease of use by the Iranian users has a significant positive effect on the attitude towards cryptocurrency transactions;

**H4.** The perceived ease of use by the Iranian users has a significant positive effect on their perceived usefulness in cryptocurrency transactions;

**H5.** The indirect effect of perceived usefulness by the Iranian users on the behavioral intention of cryptocurrency transactions is positive and significant;

**H6.** The indirect effect of perceived ease of use by the Iranian users on the behavioral intention of cryptocurrency transactions is positive and significant;

Also, figure 2 shows how the components in the TAM model affect the behavioral intention of the Iranian users in using blockchain space for cryptocurrency transactions.
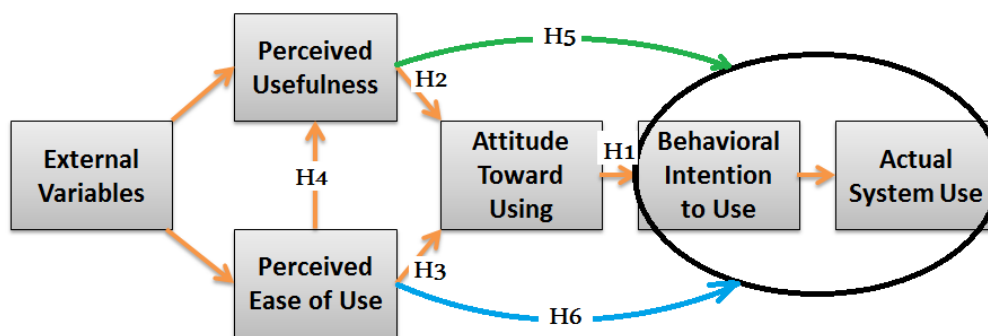


**Fig. 2.** Conceptual Model of Research

## 4. Results

This section summarizes the data collection and output findings of the software used. According to the demographic characteristics, most participants in the sample size (78 participants ) are 25–34 years old. 14 participants are under 25, 43 participants are between 35 and 44, 13 participants are between 45 and 54, and 6 are over 54 years old. 22 participants are women, 132 participants are men. 5 participants are under diploma, 8 participants have a diploma, 3 participants have associate's degrees, 76 participants have bachelor's degrees, 49 participants have master's degrees, and 13

participants have doctoral degrees higher. Regarding the job, 54 participants are public sector employees, 41 are private-sector employees, 4 are retired, 27 are students, and 28 have other jobs. Researchers and experts approved the content validity of the questionnaire in previous studies, and its reliability was obtained based on Cronbach's alpha coefficient of 0.873. Furthermore, the results of the central statistics and dispersion areas Table 1:

**Table 1.** Central and dispersion statistics

| Component | Mean | Max | Min | S.d. Deviation |
|---|---|---|---|---|
| Perceived Ease of Use | 5.87 | 6.50 | 5.25 | 0.29 |
| Perceived Usefulness | 6.50 | 6.83 | 6.17 | 0.18 |
| Attitude | 6.47 | 7.00 | 6.00 | 0.29 |
| Behavioral Intention | 6.50 | 7.00 | 6.00 | 0.28 |

Source: Research Findings

According to central statistics and dispersion results, each component's minimum and maximum values represent the respondents' average minimum and maximum scores to the Likert scale's scoring propositions (1 to 7). For example, the minimum and maximum values of the attitude are 6 and 7, respectively. The number 6 indicates the average of the lowest score given by the respondents to the items in this questionnaire. Furthermore, the mean statistics of the average of each component represent the average score of the respondents to the items of each of these components from 1 to 7. In addition, the dispersion statistics of the standard deviation of each component indicate the degree of dispersion of the respondents' scores to the items of each component, around the average of the score.

The content validity of the questionnaires (approved by researchers and experts in previous studies) and their reliability based on Cronbach's alpha coefficient are reported in Table 2:

**Table 2.** The results of validity, reliability and extracted variance

| Questionnaire | AVE> 0.5 | Cronbach's alpha | combined validity |
|---|---|---|---|
| Perceived Ease of Use | 0.513 | 0.768 | 0.803 |
| Perceived Usefulness | 0.635 | 0.781 | 0.777 |
| Attitude | 0.639 | 0.723 | 0.775 |
| Behavioral Intention | 0.649 | 0.783 | 0.786 |

Source: Research Findings

According to Hair et al. (2016), each component's combined validity and reliability should be equal to or greater than 0.7 to be reliable. Moreover, the mean of extracted variance is a common criterion for measuring the convergent validity of each questionnaire. Values equal to or greater than 0.5 indicate that the component in question determines more than half of the variance of its items (Hair et al., 2016). According to the results of validity and reliability tests of perceived ease of use, perceived usefulness, attitude, and behavioral questionnaires related to the Iranian users in the blockchain space, one can say that all questionnaires have acceptable validity and reliability. In addition, the average variance extracted (AVE) of each of the above questionnaires (due to the value greater than 0.5) confirms their high validity and reliability. Results of the normality test are reported in Table 3:

According to the normality test results, since the probability value of all components is less than 5%, according to the alternative hypothesis of the normality test, based on which the distribution is not normal, these questionnaires do not have a normal distribution. Table 4 shows the correlation values between the research components.

**Table 3-**.The result of the normality test

| Component | P-Value | Statistic K-S |
|---|---|---|
| Perceived Ease of Use | 0.001 | 1.91 |
| Perceived Usefulness | 0.003 | 1.82 |
| Attitude | 0.000 | 2.12 |
| Behavioral Intention | 0.000 | 2.35 |

Source: Research Findings

**Table 4-** The result of the Correlation test

| Components | Behavioral Intention | Attitude | Perceived Usefulness | Perceived Ease of Use |
|---|---|---|---|---|
| Perceived Ease of Use | – | – | – | 1.00 |
| Perceived Usefulness | – | – | 1.00 | 0.396 (0.00)*** |
| Attitude | – | 1.00 | 0.311 (0.00)*** | 373/0 (0.00)*** |
| Behavioral Intention | 1.00 | 0.20 (0.00)*** | 0.46 (0.00)*** | 0.23 (0.00)*** |

According to the correlation test results, all components have a significant positive correlation. Thus, Iranian users positively correlate with perceived ease of use, usefulness, and attitudes toward cryptocurrency transactions. The structural equations obtained by Smart-PLS software to test the research hypotheses have reported the optimal model of acceptance of blockchain technology.

Figures 3 and 4 are the optimal models extracted from the structural equation modeling before and after removing non-significant items in each component. So that in Figure 3, the first item (PEoU1) and the second item (PEoU2) of the component of perceived ease of use by the users when using Blockchain were removed from the model due to their non-significance. Finally, the optimal model of Figure 4 was extracted. The values of each component's items coefficients and their probability values in Figure 4 indicate the significance of each coefficient (except for the item PEoU4, the rest at a 99% confidence level).

According to the results of path analysis in Figure 2 and Table 6, to test the research hypotheses, path coefficient values, t-student statistics, and probability value of each component is reported. H1 describes the path between the components of attitude and behavioral intention. The value of 0.525 of the path coefficient and the values of the t-test and its probability indicate a significant positive relationship between the attitude and behavioral intention of the Iranian users. Attitude has a significant positive effect (both because the value of the t-student statistic is greater than 2 and because the probability value is less than 1%) on users' behavioral intent when using Blockchain technology in cryptocurrency transactions. Therefore, H1 is confirmed, which states the significant positive effect of the Iranian users' attitudes on the behavioral intention of cryptocurrency transactions. In addition, the effect of the usefulness of transactions on users' attitudes when trading cryptocurrencies is positive and significant (0.597), which confirms H2. Moreover, the effect of blockchain technology during cryptocurrency transactions on attitude and usefulness has been positive and statistically significant. Therefore, H3 and H4 are also confirmed. Finally, the indirect effect of usefulness and ease of use in cryptocurrency transactions on Iranian users' behavioral intention is positive and statistically significant, confirming H5 and H6. In summary, all research hypotheses are confirmed at a 99% confidence level.
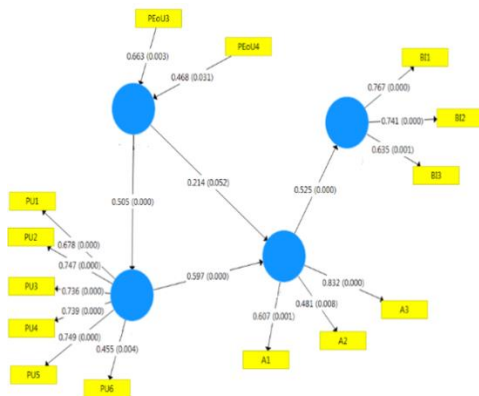
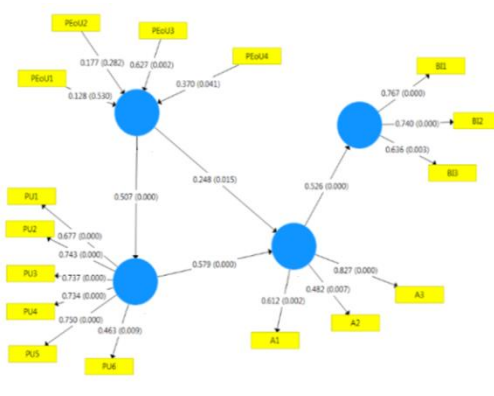**Fig. 4.** Optimal Model after elimination of non-significant items



**Fig. 3.** Optimal Model before elimination of non-significant items

Table 5 provides a report of the statistics of coefficient of determination as well as the adjusted coefficient of determination, whose values, for example, for the behavioral intention, are 0.275 and 0.268, respectively:

**Table 5**. The result of R-Square and R-Square Adjusted

| Dependent Component | Independent Component | R-Square | R-Square Adjusted |
|---|---|---|---|
| Perceived Usefulness | Perceived Ease of Use | 0.255 | 0.247 |
| Attitude | 1-Perceived Usefulness 2- Perceived Ease of Use | 0.532 | 0.522 |
| Behavioral Intention | Attitude | 0.275 | 0.268 |

Source: Research Findings

The attitude (as an independent component) can explain 26.8% of the changes in behavioral intention (as a dependent component). In comparison, 73.2% of the behavioral intention changes are explained by other components not present in the model mentioned above. In addition, the perceived usefulness and ease of use when trading cryptocurrencies explain 53.2% of the changes in users' attitudes. Finally, the perceived ease of use explains 25.5% of the changes in the perceived usefulness.

The results show that all the hypotheses are confirmed. Thus, the proposed model (TAM) successfully meets the research objectives and highlights the factors affecting users' behavior towards cryptocurrency transactions that support blockchain technology.

The TAM model was developed to match blockchain technology's users' behavior in cryptocurrency transactions. Findings indicate a high impact of the users' usefulness on their attitudes and impact on their behavioral intent towards cryptocurrency transactions. Furthermore, most respondents agree that their perceived usefulness and ease of use when using blockchain technology in cryptocurrency transactions affect their attitude and behavioral intent.

## 5. Conclusion and Recommendations

Recently, blockchain technology has grown rapidly globally and offers various solutions to secure transactions and services. Yet, the actual use of this technology is still very low because users show high resistance to this technology (Al-Bayati et al., 2020). Due to the low acceptance of this technology, this study aimed to design a TAM model to use blockchain technology and detect the factors affecting the behavioral intent of users of cryptocurrency transactions. According to the survey conducted by questionnaire among 154 Iranian users, the results showed that users' perceived ease of use and usefulness had a high impact on their attitude and behavioral intention toward cryptocurrency

transactions blockchain technology. Findings confirm that a 1% increase in the Iranian users' attitude, which is due to factors such as perceived ease of use and usefulness, increases by 0.525% in behavioral intention when cryptocurrency trading under blockchain technology, which is also statistically significant. Furthermore, the perceived ease of use of cryptocurrency transactions has a significant positive effect on their usefulness from these transactions. Moreover, the usefulness of cryptocurrency transactions has significantly positively affected their attitudes toward these transactions, greater than the perceived ease of use. This finding aligns with Nadeem et al. (2020), who declare that expectation positively impacts perceived pleasure and ease of use. A positive relationship between perceived ease of use and perceived pleasure was confirmed. The findings also reveal that expectation, perceived pleasure, and perceived ease of use significantly impact satisfaction. Moreover, it is found that perceived pleasure, perceived ease of use and satisfaction significantly influence the repurchase intention of Bitcoin.

Also, this finding confirms that Ter Ji-Xi, Salamzadeh and Teoh (2021) claims that three of the five proposed items (performance expectancy, effort expectancy and facilitating condition) are significant predictors of *BI* to adopt cryptocurrency as a medium of transaction.

Another result is that the indirect effect of both perceived ease of use and usefulness on users' behavioral intent has been positive and significant. Considering the youth and high level of education of most selected users, one can say that this group of Iranian users has the most culture of welcoming cryptocurrency transactions in the blockchain space. As Ter Ji-Xi, Salamzadeh and Teoh (2021) reveal, the relationship between BI and social impact became significant only when age was added as a moderator.

Considering the ease of use and usefulness of cryptocurrency transactions for users, the Iranian authorities must have a maximum support for users and traders by lifting sanctions and easy access to blockchain space. In addition, to increase users' access and perceived usefulness in using blockchain technology to trade cryptocurrencies, the authorities should remove the restrictions on cryptocurrency technology acceptance, such as increasing trust and support.

# References

1. Abbaszadeh, M.R. و Salehi, M. and Faiz, S.M. (2019). Association of information technology and internal controls of Iranian state agencies. *International Journal of Law and Management*, 61(1), pp. 133-150. https://doi.org/10.1108/IJLMA-12-2017-0304

2. Ahmadi Deh-Qutbuddini, M. (2010). Structural relationships between the structures of the Davis technology acceptance model. *Quarterly Journal of New Thoughts in Educational Sciences*, 5(2), pp. 129-142. (In Persian)

3. Ajzen, L. and Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Prentice-Hall. New Jersey: USA.

4. Alam Beigi, A. and Ahangari, I. (2014). Investigating the moderating role of job relationship in the development of IT acceptance model among agricultural promoters in West Azerbaijan province. *Information and Communication Technology in Educational Sciences*, 4(4), pp. 95-115. (In Persian)

5. Albayati, H., Kim, S.K. and Rho, J.J. (2020). Accepting financial transactions using blockchain technology and cryptocurrency: A customer perspective approach. *Technology in Society*, 62, A.101320. https://doi.org/10.1016/j.techsoc.2020.101320

6. Albayati.Hayder ،Kim. Kyoung،Rho Jeung (2020) Acceptance of financial transactions using blockchain technology and cryptocurrency: A customer perspective approach،Technology in Society،July, 2020، https://doi.org/10.1016/j.techsoc.2020.101320

7.  Al-Emran, M., Mezhuyev, V. and Kamaludin, A. (2018). Technology Acceptance Model in M-learning context: A systematic review. *Computers & Education*, 125(29), pp. 389-412. https://doi.org/10.1016/j.compedu.2018.06.008

8.  Al-Emran, M., Mezhuyev, V. and Kamaludin, A. (2020). Towards a conceptual model for examining the impact of knowledge management factors on mobile learning acceptance. *Technology in Society*, 61, A. 101247. https://doi.org/10.1016/j.techsoc.2020.101247

9.  Asadollahi, A. and Choobineh, B. (2018). The Impact of China Block on Banking Industry Business Models, 8th Annual Conference on Electronic Banking and Payment Systems, Tehran. Iran. (In Persian)

10. Aste, T., Tasca, P. and Di Matteo, T. (2017). Blockchain technologies: The foreseeable impact on society and industry. *Computer*, 50(9), pp. 18-28.

11. Bagozzi, R.P. (2007). The legacy of the technology acceptance model and a proposal for a paradigm shift. *Journal of the association for information systems*, 8(4), A.3. Available at: http://aisel.aisnet.org/jais/vol8/iss4/3

12. Bahga, A. and Madisetti, V.K. (2016). Blockchain platform for industrial internet of things. *Journal of Software Engineering and Applications*, 9(10), pp. 533-546. https://doi.org/10.4236/jsea.2016.910036

13. Davis, F. D. (1989). A Technology Acceptance Model for Empirically Testing New End-User Information Systems.

14. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13 (1989), pp. 319-340

15. Farzin Yazdi, M., Bradar, R. and Ghaibi, A. (2013). Investigating the applicability of the technology acceptance model for the acceptance of RFID technology. In university libraries (case study: Yazd city). *University Library and Information Research*, 47(2), pp. 171-189. (In Persian)

16. Financial Services Commission (2016), A Study on Introduction of Blockchain Technology in the Financial Sector.

17. Folkinshteyn, D. and Lennon, M. (2016). Braving Bitcoin: A technology acceptance model (TAM) analysis. *Journal of Information Technology Case and Application Research*, 18(4), pp. 220-249. https://doi.org/10.1080/15228053.2016.1275242

18. George, R.P., Peterson, B.L., Yaros, O., Beam, D.L., Dibbell, J.M. and Moore, R.C. (2019). Blockchain for business. *Journal of Investment Compliance*, 20(1), pp. 17-21. https://doi.org/10.1108/JOIC-01-2019-0001

19. Ghosh, A., Gupta, S., Dua, A. and Kumar, N. (2020). Security of Cryptocurrencies in blockchain technology: State-of-art, challenges and future prospects. *Journal of Network and Computer Applications,* 163, A.102635. https://doi.org/10.1016/j.jnca.2020.102635

20. Golosova, J. and Romanovs, A. (2018). The advantages and disadvantages of the blockchain technology. In 2018 IEEE 6th workshop on advances in information, electronic and electrical engineering (AIEEE) (pp. 1-6). https://doi.org/10.1109/AIEEE.2018.8592253

21. Goodhue, D.L. and Thompson, R.L. (1995). Task-technology fit and individual performance. *MIS Quarterly*,19(2),  pp. 213-236. https://doi.org/10.2307/249689

22. Granić, A. and Marangunić, N. (2019). Technology acceptance model in educational context: A systematic literature review. *British Journal of Educational Technology*, 50(5), pp. 2572-2593. https://doi.org/10.1111/bjet.12864

23. Hair Jr, J.F., Hult, G.T.M., Ringle, C. and Sarstedt, M. (2016). A primer on partial least squares structural equation modeling (PLS-SEM). Second Edition. Sage publications. California. The USA.

24. Henseler, J., Ringle, C.M. and Sarstedt, M. (2015). A new criterion for assessing discriminant

validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, 43(1), pp. 115-135. https://doi.org/10.1007/s11747-014-0403-8

25. Hernandez, B., Jimenez, J. and Martín, M.J. (2008). Extending the technology acceptance model to include the IT decision-maker: A study of business management software. *Technovation*, 28(3), pp. 112-121. https://doi.org/10.1016/j.technovation.2007.11.002

26. Jahanbin, K., Rezaei, H., Eliasi Komari, F. and Moradi, A. (2018). Currency transfer in the international arena using Blockchain, 7th International Conference on Economics, Management. *Accounting with Value Creation Approach*, Shiraz. Iran. (In Persian)

27. Jasperson, J., Carter, P. E. and Zmud, R.W. (2005). A comprehensive conceptualization of post-adoptive behaviors associated with information technology enabled work systems. *MIS Quarterly*, 29(3), pp. 525-557. https://doi.org/10.2307/25148694

28. Kazemian, M. Habibi, A. and Habibi, M. (2020). Investigating the effect of ease of use, perceived usefulness and social image of using Mobile Bank on customers 'attitudes and customers' desire to use (Case study: Mobile Bank Tejarat users). *Quarterly Journal of New Research Approaches in Management and Accounting*, 4(28), pp. 74-93. (In Persian)

29. Manzoor, D. and Norouzi, A. (2019). Applications of blockchain technology in energy industry businesses: Opportunities and challenges. *Iranian Journal of Energy (Quarterly),* 22(2). pp. 23-58. (In Persian)

30. Martins, C., Oliveira, T. and Popovič, A. (2014). Understanding the Internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application. *International Journal of Information Management*, 34(1), pp. 1-13. https://doi.org/10.1016/j.ijinfomgt.2013.06.002

31. Mishra, D.P., Kukreja, R.K. and Mishra, A.S. (2022). Blockchain as a governance mechanism for tackling dark side effects in inter-organizational relationships. *International Journal of Organizational Analysis*, 30(2), pp. 340-364. https://doi.org/10.1108/IJOA-08-2020-2362

32. Mostafavi, N., Ebrahimi Ordaklu, F. and Abbasi, E. (2019). Application of China Blockchain Technology in the Banking Industry, The Second International Conference on New Research Strategies in Management, *Accounting and Economics*, Tehran. Iran. (In Persian)

33. Mullah Hosseini, A., Forouzanfar, M. H. (2019). Development and localization of technology acceptance model (TAM) in small and medium enterprises. *Scientific Quarterly of Industrial Technology Development,* 16(34), pp. 39-48. (In Persian)

34. Nadeem, M.A., Liu, Z., Pitafi, A.H., Younis, A. and Xu, Y. (2020). Investigating the repurchase intention of Bitcoin: empirical evidence from China. *Data Technologies and Applications*, 54(5), pp. 625-642. https://doi.org/10.1108/DTA-10-2019-0182

35. Oh, J. and Shong, I. (2017). A case study on business model innovations using Blockchain: focusing on financial institutions. *Asia Pacific Journal of Innovation and Entrepreneurship*, 11(3), pp. 335-344. https://doi.org/10.1108/APJIE-12-2017-038

36. Park, N., Roman, R., Lee, S. and Chung, J.E. (2009). User acceptance of a digital library system in developing countries: An application of the Technology Acceptance Model. *International journal of information management,* 29(3), pp. 196-209. https://doi.org/10.1016/j.ijinfomgt.2008.07.001

37. Rahimi, A. and Bushehri, A. (2019). Investigating the role of blockchain technology in improving the performance of the defense industry supply chain. The first international conference on knowledge management, Blockchain and economics, Tehran, Iran (In Persian).

38. Rakhshan Dadi, T. and Hosseini, F. (2019). Blockchain technology and its application in the Internet of Things (IoT), the second international conference on interdisciplinary research in electrical engineering, computer, mechanics and mechatronics in Iran and the Islamic world,

Karaj. Iran. (In Persian)

39. Salloum, S.A., Alhamad, A.Q.M., Al-Emran, M., Monem, A. A. and Shaalan, K. (2019). Exploring students' acceptance of e-learning through the development of a comprehensive technology acceptance model. *IEEE Access*, 7(109), pp. 128445-128462. https://doi.org/10.1109/ACCESS.2019.2939467

40. Selya, A.S., Rose, J.S., Dierker, L.C., Hedeker, D. and Mermelstein, R.J. (2012). A practical guide to calculating Cohen's f2, a measure of local effect size, from PROC MIXED. *Frontiers in Psychology,* 3, A.111. https://doi.org/10.3389/fpsyg.2012.00111

41. Shahzad, F., Xiu, G., Wang, J. and Shahbaz, M. (2018). An empirical investigation on the adoption of cryptocurrencies among the participants of mainland China. *Technology in Society*, 55(C), pp. 33-40. https://doi.org/10.1016/j.techsoc.2018.05.006

42. Tapscott, D. and Tapscott, A. (2016). Blockchain Revolution, Penguin Random House, Portfolio; Reprint edition (June 12, 2018), New York, USA.

43. Ter Ji-Xi, J., Salamzadeh, Y. and Teoh, A.P. (2021). Behavioral intention to use cryptocurrency in Malaysia: an empirical study. *The Bottom Line*, 34(2), pp. 170-197. https://doi.org/10.1108/BL-08-2020-0053

44. Tornatzky, L.G., Fleischer, M. and Chakrabarti, A.K. (1990). Processes of technological innovation. Lexington books.

45. Venkatesh and Davis, 2000. A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. February 2000. Management Science 46(2):186-204. https://doi.org/10.1287/mnsc.46.2.186.11926

46. Venkatesh, V. and Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. *Decision Science*, 39(2), pp. 273-312. https://doi.org/10.1111/j.1540-5915.2008.00192.x

47. Wunsche, A. (2016). Technological disruption of capital markets and reporting? An introduction to blockchain'. Chartered Professional Accountants Canada (CPA).

48. Zhonggen, Y. and Xiaozhi, Y. (2019). An extended technology acceptance model of a mobile learning technology. Computer Applications in Engineering Education, 27(3), pp. 721-732. https://doi.org/10.1002/cae.22111