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**Examining and predicting variables affecting  
cryptocurrencies and the future trend of money**

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## ABSTRACT

During the last few years, the issue of cryptocurrencies has received a lot of attention at the level of international communities, while few researches and studies in Iran and the region have addressed this issue. This research aims to identify the important and influential variables by examining the future trend of money and cryptocurrencies in the region (Iran, Iraq, Syria, Lebanon, and the UAE) and provide a comprehensive model in this regard. For this framework, three basic sources have been used. First, the background of the subject, models, perspectives and various researches in the field of cryptocurrencies have been widely studied. Then, using the results and through semi-structured interviews with 17 managers, experts and university professors, the main components in this field were identified. In addition, the resulting data were analyzing by theme analysis using QSR Nvivo software. Finally, using the results, 4 important and effective variables in the future trend of money were identify and determine, which are security, laws and regulations, monetary and financial exchanges, and investment, respectively. It is worth mentioning that, the reliability of the coding has calculated by the retest method, so the internal reliability of the interviews checked and confirmed.

**Keywords:** *Cryptocurrencies, Blockchain, Money, Bitcoin, Theme analysis*



## 1. Introduction

Technology foresight generally known as a set of measures based on the three knowledge areas of technology forecasting, future research and technology assessment. Both levels of foresight inspire decision makers to think innovatively in relation to uncertainties and new development opportunities. (Ashrafi.b, 2019)

No one can predict the future with certainty, however, by studying history and observing the state of money today, a possible future can be clear. The function of money is one of the important economic topics that has occupied a large chapter in the history of economic developments. This is especially important because the understanding of the nature and function of money in the economy has an important effect on the way the monetary system is managed. Just as humans have evolved, money has evolved over time. Between the 17th and 19th centuries AD, the gold standard was used in most European countries, where paper money had a certain and fixed value compared to gold. After World War II, at the Bretton Woods Summit, most countries in the world switched to using fiat money that was pegged to the US dollar, and the US dollar was the only currency whose value was pegged to gold.

In 1971, Richard Nixon unilaterally canceled the Bretton Woods Agreement, and after that, the money used in the world became fiat money.

Since 1971, the dollar has been used as an international currency, but many countries in the world are against the continuation of this situation and the power of the dollar.

In the meantime, Mark Carney, the head of the British Central Bank, mentioned in January 2019 that: "We will have an international reserve currency other than the US dollar". (Abu Ghazaleh, 2019)

The growing importance of innovation and widespread use of technologies has changed the way banking does business. Fintech technology has become an integral part of banking services. (Romanova and Kodinska, 2016). Fintech relates to companies that use innovative technologies to enable the provision of financial services. In a broader sense, Fintech is considered

as a new market that integrates technology and financial activities. Fintech also replaces traditional financial structures with processes based on new technologies (Hockstein, 2015).

After 2008, with the emergence of the world financial crisis, creating a new Monetary system that preserves the value of money become important. In this regard, the money reached a more advanced stage by changing the current currency, and this caused the percentage of electronic money in the form of exchangeable money to increase and the use of paper money to decrease.

Currently, blockchain has attracted a lot of attention in financial technologies (FinTech). Blockchain can revolutionize payment technology and credit information systems of banks (Giu and Liang, 2016). Blockchain has been introduced as the first solution to transfer value and ownership of digital assets without the use of any trusted third party. In its simplest form, a blockchain is a shared database where all transactions for a given asset are encrypted in blockchain data blocks to make them negotiable (Hoffman et al., 2018). This technology combines several computing technologies including distributed data storage, data transmission and cryptographic algorithm. Therefore, blockchain is a major advancement in data storage and transferring information. It may also change existing financial and economic models and lead to technological innovations and developments in the Faintish industry (Romanova and Kodinska, 2016). Blockchain technology has the ability to optimize financial infrastructure and deal with global issues such as sustainable development and asset transfer more effectively than existing financial systems (Coco et al., 2017). The emergences of cryptocurrencies such as Bitcoin and developments in Block chain have also affected the region. The provision of services by cryptocurrency in countries such as Qatar, Kuwait, Bahrain and Saudi Arabia has also received much attention. In addition, in the APAC region, services under the titles of Coin box provide Bitcoin services.

One of the current problems of cryptocurrency is the lack of specific support for it, of course, various solutions have been provided to solve this problem.

In this context, the credit rating of the country can play an effective role in ensuring cryptocurrency. Consider the level of trust or support of a large number of people can play an essential role in making it more reliable. Some researchers have suggested that process of issuing crypto-currencies should be based on gold to insure the stability of them. In this situation, the exchange value of these currencies, in addition to the general agreement, will also depend on the

intrinsic value of the gold used. In this regard, due to the increasing importance and very high turnover of cryptocurrencies at the international level, in this article, decided to examine the effective and important factors affecting the trend of cryptocurrencies as a new monetary unit at the level of the region and the country of Iran.

In the end, it should be mentioned that few studies have investigated the role and impact of the new technology of cryptocurrency. It is worth mentioning that according to the conditions of the liberalization of monetary relations, moving towards a new type of money or digital currencies can open the way for social justice and maintaining the reserve value of the people.

## **2. Theoretical Literature**

According to economists, money is a means that should be accepted for paying the price of goods and services and repaying debts. According to economists, the concept of money is different from wealth and income (Mishkin, 2010). Also, regardless of whether money is made of leather, stone, gold or silver, money has three basic tasks or roles in the economy. Which include: medium of exchange, unit of measure and store of value.

A more realistic and better understanding of the functions of money by examining the evolution of payment systems can be obtained. At one point in history, precious metals such as gold and silver were used as means of payment and the main form of money. After that, paper money such as bills and checks became popular as a means of payment and the main money. Based on this, money in the future can have other forms and characteristics that will create a special system of payments in its time.

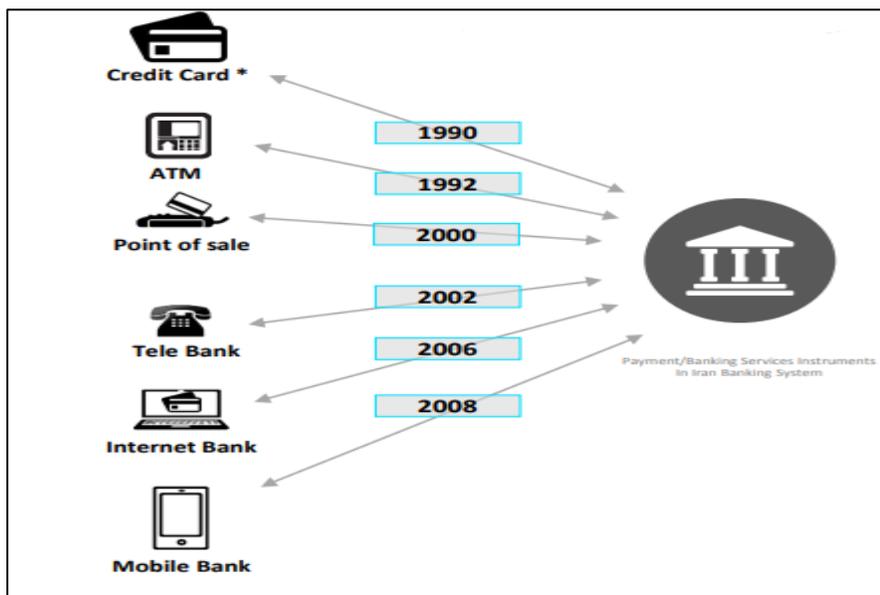
At one point in time, a banknote was actually a pledge that was convertible into a certain amount of gold, silver, or other precious metals. Over time, these types of money legally and officially accepted as a means of payment which officially and legally issued by the government. In other words, the reason for its acceptance was not that it could converted into coins and gold. Of course, the public acceptance of this money depended on the honesty, commitment and trust of the issuing authorities. It also assures that it would be very difficult or impossible to forge it due to its complexity and strength.

In the following, various forms of money with titles, commodity money, metal money, paper money, written money, electronic money and finally fiat money and solid currency created.

The banking industry also created and developed due to the formation and creation of money in different parts of the world. Regarding the country of Iran, the concept of modern banking in Iran dates back to the 1990s, when Sepeh Bank created the first ATM which easily connected to the banks cards. With the expansion of credit cards and market needs, in 2002, interbank information exchange of different banks launched. However, the face-to-face visit of customers was expensive for the banks, so in 2002, the banks introduced the telephone bank, in 2006, the Internet bank, and in 2008, the mobile bank.

The evolution of digital technology in the banking industry demonstrate in the figure below. (Iran Banking Industry Outlook, 2016)

**Figure 1: The evolution of digital technology**



In 2001, about 57 Iranian private and state banks started their activities in foreign countries, which number decreased to 49 banks because of sanctions in 2005. These companies use swift to expand transactions to the international level. However, in 2012, with the increase of

US government sanctions, the access of Iranian banks to SWIFT was limited, and finally, in the second phase of sanctions against Iran in November 2018, access restrictions to SWIFT increased.

In the meantime, international analysts believe that if access to SWIFT decreases, the demand for using alternative methods, including blockchain technologies, will increase. In addition, some countries are more involved in sanctions and are more interested in using this technology. For example, Russia and Iran to avoid using dollars in transactions established a blockchain payment system. Russia has also created a system for domestic use as an alternative to Swift and asks companies to use it, a system where sending messages is much cheaper than Swift. (Mostafavi and ...2019)

Based on this, because of the events and approaches that created at the level of international communities, the interest and desire in countries, individuals and organizations to use another type of money for interactions and trade has created.

Annabelle (2018) has analyzed in an article that eventually the global cash empire will end and technology will replace it. Mobile payment and the development of mobile sales terminals, digital payments and wallets, application programming interface are the main technological trends in this field. (Collomb, A & Sok, K, 2016)

Considering the advantages of electronic money, it may come to mind that money will definitely become electronic, but the factors that slow down the movement of this type of money and delay the spread of this monetary phenomenon are:

- Paper money has the advantage that customers are assured of receiving the relevant receipts and therefore do not want to lose this advantage.
- The use of paper checks gives the check issuer a few days to turn the check into cash from his account.
- Electronic money has created security and privacy considerations. It is often heard in the media that hackers have penetrated a computer and gained access to its information. In addition, preventive measures for these types of thefts are not so easy.
- The access of the government and its officials and employees to this kind of information is one of the cases that is of interest.

According to the theoretical literature so far, the discussion of the definition of money and its functions and how money was created was fully explained. Also, a history about the process of creation and formation of the banking industry in Iran is also presented. Therefore, it was determined that one of the types of money in the future can be digital money, which can have a great impact on the way of interactions and trade in the world. In the continuation of the discussion, digital currencies and the nature of Blockchain are mentioned.

The reason for the emergence of cryptocurrency goes back to the economic crisis of 2008 in America, when Satoshi Nakamoto decided to create money that has no third party and people can exchange with each other (Peer-To-Peer). The goal was for banks to eliminate intermediaries and to be able to exchange two or more people with each other whenever they want and at any hour of the day or night.

In general, Blockchain is a type of information recording and reporting system, and its difference from other systems is that the information stored on it, share among all members of the network, and with the use of encryption, it is almost impossible to delete and manipulate the recorded information. Bitcoin cryptocurrency was the first application of this technology and used Blockchain to store users' property information. If Blockchain is an operating system, Bitcoin is software on this operating system. However, this operating system can have many more uses. Blockchain technology originally designed to conduct Bitcoin transactions as a public ledger without a centralized database, providing a secure infrastructure for transactions between different people around the world. In recent years, Blockchain technology has advanced far beyond Bitcoin. Blockchain technology is an emerging technology that has shown wide technical applications in various businesses such as banking, insurance, capital market, information security, property ownership, identity verification, rental and government services (**Yermack, D, 2017**).

Guo (**Mu Qi-Guo 2016**) examined the role of Blockchain on financial technology and stated that although the main task of Blockchain technology is to store and transfer information in a digital platform, but also it has a lot of capacity using in financial technology.

Recently, international institutions, including the United Nations, the International Monetary Fund, and advanced countries such as America, England, and Japan, have paid much attention to Blockchain technology and its role in financial technology. As a result, countries such



as Russia, China, India, South Africa and other developing countries have also started their research in the field of Blockchain technology.

This is while according to the Governor of the Central Bank of China, a budget has been allocated for the development of Blockchain technology in Chinese banks. In addition, Yang and Miao (2018) presented an article with the aim of investigating the growth of articles and productions of researchers in the field of blockchain from 2008 to 2017. The results of this research indicate the trend of articles and researches conducted in the field of Blockchain. In this research, 801 articles from the Scopus database examined, using different perspectives and by applying different approaches. Its results show the continuous increase of literature in the field of Blockchain, but changes in the levels of research related to Blockchain observed. From 2008 to 2013, most of the headlines were related to virtual currencies and Bitcoin. In the years 2014 and 2015, the literature related to Bitcoin has increased. After 2016, many researchers paid attention to Blockchain techniques in smart contracts.

In the following, we refer to the uses of cryptocurrency, which of course can be much wider in the future:

- **Reducing the cost of payments and liberalizing monetary relations**

Reducing costs and increasing the speed of international transactions between banks is one of the main reasons that banks and other financial institutions are able to implement cryptocurrency technology. Major financial companies and financial analysts are introducing cryptocurrency technology as a possible alternative to the SWIFT in the near future. Blockchain is a platform that, due to its decentralized nature, data and electronic messages transferred without the need for financial intermediaries such as banks. In addition, banks can change their current processes in the field of payment transactions that lead to cost savings.

- **Facilitating customer identification system**

Another application field of Blockchain in the banking industry is the creation of a customer identification system based on distributed ledger technology.

This issue is very important because credit institutions identify the customer and check their information when paying the loan. Blockchain makes it very easy to access customer information. This information is stored completely securely and can access by other banks if needed. In addition, Blockchain technology can be used to simplify and make anti-money laundering processes more effective.

- **Loans and Deposits**

There is a direct relationship between banking, financial services, deposit insurance and loans. Even in developed countries, banking activities criticized for being uncertain and vulnerable. Government regulators insure private bank deposits in traditional currencies (cash). A decentralized system for loans and deposits based on ledger technology will not only decentralize but also prevent bank failures, because a specific organization does not control the deposits.

- **Insurance**

Another important activity in traditional insurance that can improve is the automation of insurance premium payments.

- **Financial Services market**

According to the World Bank report in 2017, about two billion people in the world do not have access to banking services. Blockchain can play an important role in facilitating the entry process of these people.

- **Securities Transaction**

Securities settlement system currently seeks to transfer financial assets between investors. Traditionally, to do this, a centralized ledger is maintain by a third party to transfer securities between investors by debiting and crediting the accounts of buyers and sellers after trading each day. Meanwhile, Blockchain technology validates, updates, and stores transaction history without the need for a third party.

- **Banking Industry**

The following table shows the comparison of traditional banking industry, internet banking (FinTech 1), Blockchain technology (FinTech 2).

**Table 1: Comparison of Banking Industry**

| <b>Comparative Factor</b>           | <b>Blockchain Banking</b>   | <b>Internet Banking</b>   | <b>Traditional Banking</b>  |
|-------------------------------------|---|---|---|
| <b>Customer experience</b>          | - Strong Scenarios<br>-Personalized Services<br>-Good Customer Experience   | -Strong Scenarios<br>-Personalized Services<br>-Good Customer Experience  | -Uniform Scenarios<br>-Homogenous Services<br>-Poor Customer Experience   |
| <b>Efficiency and Effectiveness</b> | -point to point transactions without intermediaries<br>-High efficiency<br>-Transparent Transactions  | -Many intermediaries interfaces<br>-Complex Clarification Process<br>-Low efficiency                                    | -Many intermediaries interfaces<br>-Complex Clarification Process<br>-Low efficiency                                    |
| <b>Cost</b>                         | -Fully Automatic<br>-Without Intermediaries<br>-Low Costs   | -Semi Automatic<br>-Many Intermediaries<br>-High Costs  | -Not Automatic<br>-Many Intermediaries<br>High Costs  |
| <b>Security</b>                     | -Storing information in a decentralized manner that cannot manipulated<br>-Using asymmetric encryption that leads to the impossibility of deleting personal information<br>-High Security | -Centralized storage of information that can be manipulated<br>-Ability to delete personal information<br>-Low Security | -Centralized storage of information that can be manipulated<br>-Ability to delete personal information<br>-Low Security |

### 3. Literature Review

Due to the novelty of the subject, there is little research that has done modeling in the field of cryptocurrencies. However, the records of the subject and the conducted investigations have been reviewed, which are described in the following table:

| Researcher                     | Topic                                     | Model/Variables  | Research Methods | Research Findings  |
|--------------------------------|---|--|------------------|--|
| Jeffry law (2018)              | The Future of money and banking           | It is Qualitative Review Model.<br>Main variables: are mobile bank.<br>Internet bank and digital money | Questionnaire    | Considering the importance of technology, the future of money and banks will be digital.   |
| Wang, R., Lin, Z., Luo, H.2019 | Blockchain, Banking Credit, SME financing | This paper sets up a theoretical model to analyze a new credit model                                   | Theory           | The theoretical analysis show that the Blockchain technology will determine the decentralized consensus of the success of debt repayment or debt default of the deliverer through the definitive confirmation and validation of lending and borrowing activities in distributed ledgers. |

|  |  |   |   |  |
|--|--|---|---|--|
| Jane Berry<br>Lando 2019                       | Digitization of money  | The model under investigation is quantitative and the variable is money   | Theory  | It has been determined that the future money will be digital and there will be a need for an independent central bank in this field. |
| Luciano<br>Coco and<br>others 2017             | Banking Based on Blockchain  | The model examined in this article is structural equations.<br>Main variables are: Bitcoin, efficiency, Cost of Funding | Questionnaire                                 | It is possible to expand to expand digital money in banking and health sector more than the others are.                              |
| Harris, W,L<br>Wong<br>impair, j<br>(2019)     | Blockchain platform and future banking competition                 | Studying the systematic innovation model to analyze and track the path of innovation                                    | Analyzes based on systematic innovation model | Most banks compete with each other to create their own Blockchain banking system based on the systematic innovation model.           |
| Pop ova,<br>N.A.,<br>Butakova,<br>N.G.<br>2019 | Research on the possibility of using Blockchain technology without | Using Blockchain technology without passwords to protect information about banking transaction details                  | theory  | It suggests that Blockchain without mining and passwords will significantly simplify the processes of maintaining the                |

|                                      |  |   |               |   |
|--------------------------------------|--|---|---------------|---|
|                                      | passwords to protect banking transactions  |   |               | integrity and uniqueness of information related to banking transactions   |
| Wu, B., Duane T 2019                 | Advantages of Blockchain technology in commercial banking operations and management. | This article examines the benefits of Blockchain technology for commercial banks in terms of account operations, cross-border payment operations and investment in securities     | questionnaire | Blockchain technology can reduce the cost of parties' transactions and increase the operational efficiency of commercial banks in operations and management   |
| Chatfield, A,T & Reddick, C.G (2019) | Blockchain investment decisions in central banks                                     | This research investigates the situational theory to investigate the investment decisions of distributed ledger (DLT) in order to find the feasibility of DLT in central banking. | theory        | This article has found evidence of different types of situations in influencing two of the most influential factors of central banks in the investment decision of DLT (distributed ledger technology). |
| Taromi, Pirhadi and                  | The future of credit   | The model examined in this  | questionnaire | This article has been prepared with the aim   |

|                                     |  |  |                               |  |
|-------------------------------------|--|--|-------------------------------|--|
| Shafiabadi<br>(2018)                | validation and reporting in the shadow of Blockchain technology                                | article was qualitative. The main variables are validation in the industry and the role of Blockchain                            |                               | of creating a vision of Blockchain technology and its application in the validation industry, and tries to provide practical suggestions regarding validation  |
| Qalehaki,<br>Farhang<br>Adib (2018) | Investigating Blockchain technology and its impact on payment systems and the banking industry | The model investigated in this article is a neural network. The main variables are payment systems, banking industry, e-commerce | Central bank time series data | By comprehensively examining this technology and taking into account the possible risks of using new technology, Blockchain technology will challenge all departments of the bank, and banks must have a specific strategy to face it. |

#### 4. Methodology of research

In human sciences research in general, and behavioral science research in particular, it is important to choose the appropriate research Methodology to find out the reality. Researches according to the users and its main directions include basic (Fundamental), applied and developmental researches (Sarmad, Bazargan and Hejazi, 2015). From this point of view, the current research is among basic researches. Also, in terms of the goal, among the three categories of “exploratory, descriptive and explanatory” (Newman, 2015), this research is classified in the exploratory research category aiming to create a general picture of factors affecting the state of cryptocurrencies and the future of global money.

In this research, a mixed research method has been used. These methods can be combined in various ways. One way is to use sequential methods, that is, first one and then the other. Another way is to use the methods in parallel or simultaneously (Newman, 2015). In this research, the sequential method was used.

In order to achieve the goals of the research, by studying the records of previous researches, an understanding of the current situation in this field was obtained and the existing models and frameworks were examined. This is while considering the novelty of the subject, there has not been extensive research in this field, at least in the field of modeling. However, the documents available in the literature have been used in this research. Further, through in-depth interviews with experts including a collection of university professors and financial market activists, we obtain their opinions regarding the future status and future trend of cryptocurrencies, as well as important and influential variables. It is worth mentioning that the research is focused on the future trend of money in the region, therefore, interviews were conducted with knowledgeable persons in five different countries of the world (Iran, UAE, Lebanon, Iraq and Syria) in case of efficiency of comprehensiveness.

After obtaining the experts' opinions, the "theme analysis" method has been used, which is considered one of the efficient and flexible methods. "Brown" and "Clark" believed that theme analysis is a method for recognizing, analyzing and reporting patterns in qualitative data and a process for analyzing textual data that turns scattered and diverse data into rich and detailed data. Moreover, in viewing the text, it is useful to take and understand the apparently unrelated information, analyze qualitative information, systematically observe a person, group, situation,

organization or culture, and convert qualitative data into quantitative data. The concept of theme has multiple meanings and expresses important information about data and research questions, and to some extent, it shows the concept of a pattern in a set of data. The results of data analysis using the qualitative method of theme analysis and QSR Nvivo software aided are presented in the form of main and sub-themes and concepts.

Brown and Clark suggest the process used in this research for theme analysis has been carried out through six phases including getting familiar with the data, creating initial nodes, searching for themes, revising themes, defining and naming themes, and finally preparing a report. (Brown & Clarke, 2006).

In first phase, familiarization with the data takes place. It is worth mentioning that the writing of verbal data is "the key phase of data analysis in qualitative interpretive methodology" (Bird, 2005: 227). Through this phase, we study and review the data several times, take notes and highlight ideas, create a list of written data and examine them deeply.

The second phase begins with generating a list of initial ideas about interesting parts of the data in order to create initial codes. As previously mentioned in the definition of nodes, they represent an overt or hidden characteristic of the raw data or information that is of interest to the analyst and can be evaluated in a meaningful way. The coding process is a part of the analysis in which the data is organized into meaningful groups.

The third phase begins when all the data are coded and integrated and a list of different nodes is obtained from the data set. This stage focuses on a broader level of analysis of themes rather than nodes. In fact, the third phase consisted of sorting the different nodes according to potential themes and integrating all the extracted and coded data that are related.

The fourth phase begins after the formation of a set of selected themes. In this stage, all the themes are refined and some themes may be converted into each other or some themes may need to be partitioned into separate themes and that the data of the subset of each theme should be coherent with each other in a meaningful way.

The fifth phase begins with a satisfactory schematic map of our data. At the end of this phase, themes can be clearly defined. In this step, we will define and refine the themes. "Definition and refinement" is meant to identify the "essence" of the themes (what the theme is about) and

determine which aspects of the data each theme covers. Of course, themes should not be too varied or too complex. For this purpose, a test can be done to find out whether we can express the scope and content of each theme in a few sentences. If we cannot, further refinement of that theme will likely be required.

Finally, the sixth phase is related to the preparation of the report. This report contains a concise, coherent, logical, non-repetitive and interesting narrative that the data under each theme and between themes express. In this report, sufficient documentation for the themes, meaning that they show the necessity of the existence of the theme, as well as sufficient and suitable evidence for the themes, have been presented.

In this research, we tried to make the final report more than just providing data and arguments related to the research questions, moreover by re-examining the research questions, themes, concepts, structures and patterns, main questions of research have been answered.

In this research, the validity of the interviews has been examined from the perspective of “content validity” and “construct validity”, and to calculate reliability of coding, Cohen's kappa coefficient method and Holsti's method have been used (Ghoreishi et al. 2017).

Regarding the population and statistical sample, the snowball method has been used, which is among non-probability sampling methods and a combination of targeted or judgmental methods, so that the sample will continue until saturation which is usually  $10 \pm 15$  people in social science research. In the research, the sampling method was purposeful and with emphasis on benefiting from the opinions of most senior managers, bank experts, faculty members and experts in this field in different countries. Thus, people who are informed and related to the topic of competence and interested in personal development and familiar with the new topic were selected.

it is worth mentioning that a total of 17 people were selected for the interview, of which 14 people had a doctorate degree and 3 people had a master's degree, of which 15 were men and 2 were women. Regarding the focal group, considering the questions and purpose of the research and paying attention to the necessity of group interview, judgmental sampling has been taken into consideration. From the point of view of experience, people with experience of more than 10 years (with expertise in issues related to monetary and financial affairs, banking and cryptocurrencies) made up most of the respondents.

## 5. Findings

Research findings analysis can be done in different ways in order to support the needs of the research audience and make it easier to achieve the research goals.

In this research, via reviewing the literature and studying the documents and conducting comparative studies, we investigate the status of the cryptocurrency market and its important cases, as well as the origin and the process of attracting capital by cryptocurrency.

Since the main audience of this research are the actors of monetary, financial and capital markets as well as managers in this field, so in the next step of this research, using semi-structured interviews and relying on the collected data, codes and desired concepts were extracted by adopting the theme analysis approach and using QSR Nvivo.

Software's increase the reliability and accuracy of the coding process. Thus, after conducting the interview, we typed each one in a separate file format in the Word Office, and the interviews were coded by calling the files in the QSR Nvivo software environment. Such work was done for each of the interviews and if there were sections with similar topics in the text of the previous interviews, the same previously assigned codes were used. In the end, from 17 interviews, 199 nodes were made (total number of references), of which 157 Nodes were unique (total number of nodes).

The number of nodes and references for each interview demonstrate in the table below.

Table 3: interviewees

| ROW | Interview       | References | Nodes |
|-----|-----------------|------------|-------|
| 1   | First Interview | 11         | 9     |

|    |                            |    |    |
|----|----------------------------|----|----|
| 2  | Second Interview           | 16 | 11 |
| 3  | Third Interview            | 11 | 9  |
| 4  | The Fourth Interview       | 12 | 12 |
| 5  | The Fifth Interview        | 12 | 10 |
| 6  | The Sixth Interview        | 16 | 10 |
| 7  | The seventh Interview      | 30 | 15 |
| 8  | The Eighth Interview       | 7  | 7  |
| 9  | The ninth Interview        | 9  | 8  |
| 10 | 10 <sup>th</sup> Interview | 8  | 7  |
| 11 | 11 <sup>th</sup> Interview | 11 | 9  |
| 12 | 12 <sup>th</sup> Interview | 8  | 8  |
| 13 | 13 <sup>th</sup> Interview | 10 | 10 |
| 14 | 14 <sup>th</sup> Interview | 9  | 8  |
| 15 | 15 <sup>th</sup> Interview | 10 | 8  |
| 16 | 16 <sup>th</sup> Interview | 10 | 9  |
| 17 | 17 <sup>th</sup> Interview | 9  | 7  |

After coding the texts, the nodes were analyzed and combined in the form of concepts. Finally, the concepts identified based on the researcher's intuition and understanding of the subject and according to the commonality of the concepts, were categorized in the form of sub-themes and then the main themes.

It should be noted that the number of main and sub-themes is based on the researcher's opinion. In other words, the researcher must be able to create the main themes in such a way that these themes can cover all the concepts in the correct format. After creating the sub-themes, the main themes are also created which are related to the concepts and sub-themes, and as a result, the sub-themes are placed in the form of the main themes. This process revised several times to obtain a satisfactory schematic map of the data at the end.

The table below shows the concepts related to the main and sub-themes with details and completely:

Table 4: concepts related to the main and sub-themes

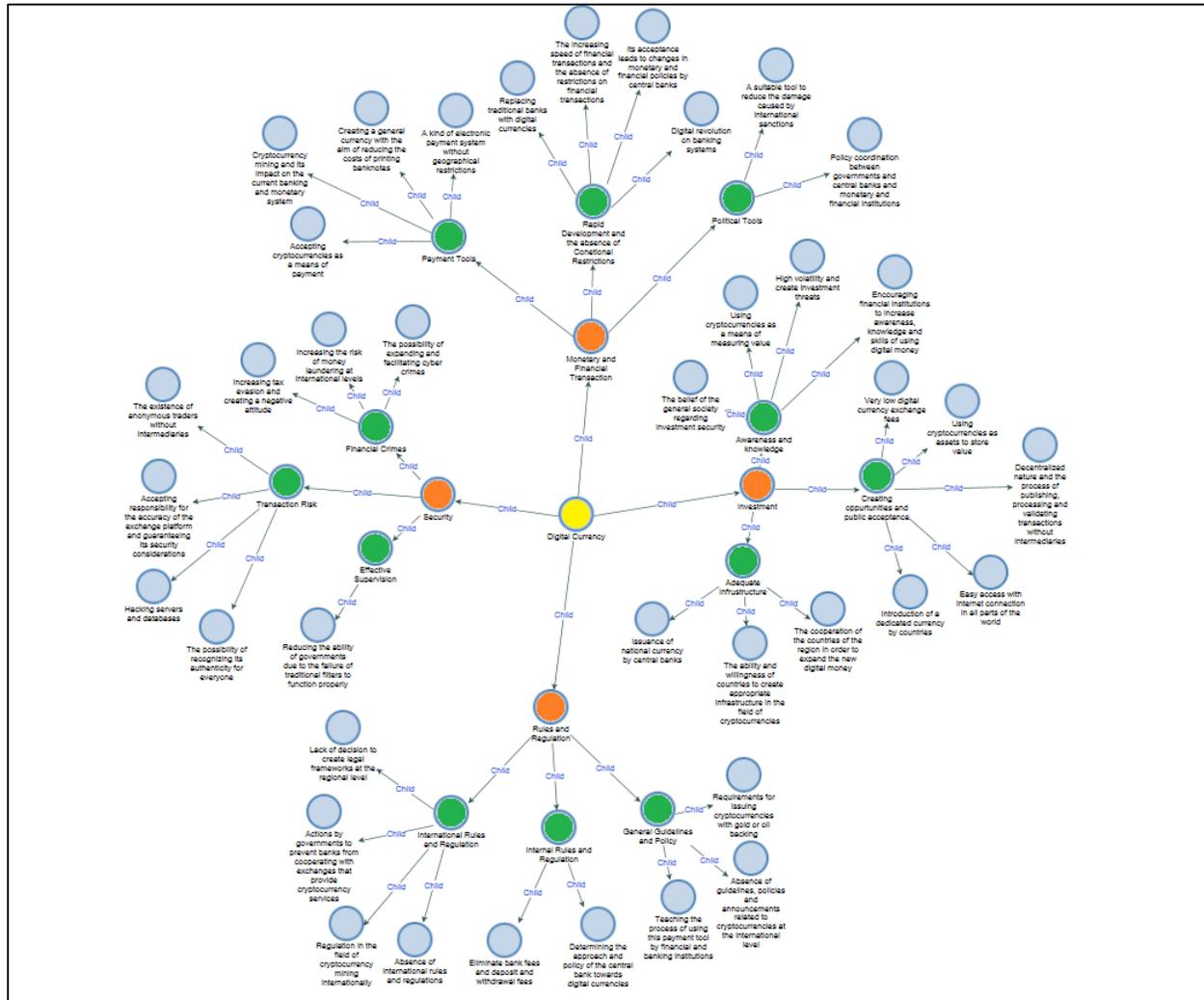
| main themes             | sub-themes                                  | concepts  |
|-------------------------|---|---|
| 1. Security             | 1-1. Transaction risk                       | 1-1-1. The possibility of recognizing its authenticity for everyone<br>2-1-1. Hacking servers and databases<br>3-1-1. Existence of anonymous traders without intermediaries<br>4-1-1. Accepting responsibility for the accuracy of the exchange platform and guaranteeing security considerations |
|                         | 2-1.Financial crimes                        | 1-2-1. Increasing the risk of money laundering at international levels<br>2-2-1. Increasing tax evasion and creating a negative attitude<br>3-2-1. The possibility of spreading and facilitating cyber crimes   |
|                         | 3-1.Effective supervision                   | 1-3-1. Reducing the ability of governments due to the failure of traditional filters function properly  |
| 2. Laws and regulations | 1-2.Internal(Domestic) laws and regulations | 1-1-2. Determining the approach and policies of the central bank towards digital currencies<br>2-1-2. Eliminate bank fees and deposit and withdrawal fees   |
|                         | 2-2.International laws and regulations      | 1-2-2. Government actions to prevent banks from cooperating with exchanges that provide cryptocurrency services<br>2-2-2. Absence of codified international laws and regulations<br>3-2-2.Lack of decision to create legal frameworks at the regional level                                       |

| main themes                         | sub-themes                                 | concepts  |
|-------------------------------------|--|---|
|                                     |  | 4-2-2. Comprehensive and international legislation in the field of cryptocurrency mining  |
| 3. Monetary and financial exchanges | 3-2.General guidelines and policies        | 1-3-2. Training the process of using this payment tool by financial and banking institutions<br>2-3-2. Absence of guidelines, policies and announcements related to cryptocurrencies at the international level   |
|                                     | 1-3. policy tools                          | 1-1-3. Policy communication and coordination between governments and central banks and monetary and financial institutions<br>2-1-3. An appropriate tool to reduce the damage caused by international sanctions   |
|                                     | 2-3. means of payment                      | 1-2-3. Its acceptance leads to changes in monetary and financial policies by central banks<br>2-2-3. Creating a general currency with the aim of reducing the costs of printing banknotes<br>3-2-3. Cryptocurrency extraction and its impact on the current banking and monetary system<br>4-2-3. A kind of electronic payment system without geographical restrictions |
|                                     | 3-3. Rapid developments and the absence of | 1-3-3. Replacing traditional banks with digital currencies<br>2-3-3. Digital revolution on banking systems and creating dynamism at the macroeconomic level   |

| main themes   | sub-themes                                       | concepts   |
|---------------|--|--|
|               | conventional restrictions                        | 3-3-3. The increasing speed of financial transactions and the absence of restrictions on financial transactions  |
| 4. Investment | 1-4. awareness and knowledge                     | 1-1-4. Encouraging financial institutions to increase awareness, knowledge and skill of using digital money<br>2-1-4. Belief and conviction of the general society regarding investment security<br>3-1-4. High fluctuations and posing investment threats<br>4-1-4. Using cryptocurrencies as a means of measuring value  |
|               | 2-4 suitable infrastructure                      | 1-2-4. Issue of national cryptocurrency by central banks<br>2-2-4. The cooperation of the countries of the region in order to expand the new digital money<br>3-2-4. The ability and willingness of countries to create appropriate infrastructure in the field of cryptocurrencies  |
|               | 3-4 Creating opportunities and public acceptance | 1-3-4. Very small fees for digital money exchanges<br>2-3-4. Easy and convenient access just by connecting to the Internet in all parts of the world<br>3-3-4. Introduction of one or more dedicated currencies by countries<br>4-3-4. Using cryptocurrencies as assets to store value<br>5-3-4. Decentralized nature and the process of publishing, processing and validating transactions without intermediaries |

According to the concepts, sub-themes and main themes, the output of the model in QSR Nvivo software is drawn as shown below.

Figure 1: Detailed model output



As it is clear, according to the output of the model, the influencing variables in the future trend of cryptocurrency, which are the same as the main themes, include laws and regulations, monetary and financial Transactions, security and investment.

In this regard, in the discussion of security, which is a hot topic in global forums regarding cryptocurrencies, transaction risk variables, financial crimes and how to monitor transactions effectively in countries have been considered as sub-themes.

The sub-themes in the discussion of laws and regulations, which is one of the basic problems regarding how to deal with activities in this field, include the following:

The issues of internal laws and regulations (in relation to a country that has its own cryptocurrency or its citizens engage in transactions), external laws and regulations (with regard to the possibility of easy transfer of this new currency from inside the country to outside the country) and finally the guidelines and line General policies.

In relation to investment, which has been the main theme of the output of the model, the concepts of awareness and knowledge, appropriate infrastructures, and creating opportunities and public acceptance have been considered as sub-theme. It is worth mentioning that regarding suitable infrastructures for investment, the ability and desire of the countries and the cooperation of the countries of the region have been taken into consideration.

Last but not least, financial transactions have been considered as the fourth main theme of the model's outputs. This main theme is linked to three sub-themes and concepts, which are political tools, payment tools and rapid developments and the absence of conventional restrictions, respectively. In other words, one of the things that has been paid attention to in cryptocurrency exchanges is its role as a political tool for the advice of governments and institutions and a payment tool, which is a significant issue.

Regarding the payment instrument, more attention has been paid to its acceptance by central banks and how to enter the banking system and network. Moreover, in the field of political tools, communication and coordination between governments, central banks and monetary and financial institutions and how to use it with the aim of reducing the damage caused by international sanctions have been taken into consideration. In addition, the replacement of the traditional banking mechanism with digital currencies and the increasing speed of financial transactions and the absence of restrictions in financial transactions were among the things that were considered in the sub-theme of rapid changes and the absence of conventional limitations.

Finally, as mentioned earlier, the reliability of interview coding was checked. It should be noted that the reliability of a scientific research is one of the most important indicators of its confirmation. The high level of reliability in a research (often above sixty percent) means that if the same research repeat at other times or if other people do it, it will have similar results. In this regard, the retest method has been used to calculate the reliability of the coding's, in order to examine the internal reliability of the interview. For this purpose, two interviews selected and each of them was coded for a specific time interval. Then, the coding's were calculated using the Holstein relation (Ghoreishi et al., 2017), which were 78% and 81%, respectively, which was more than the minimum acceptable value of 60%. As mentioned in the previous chapters, the Holstein index is a modification of the percentage agreement criterion for situations where coders do not code exactly one part of the text. In other words, they chose two different quotes in the text for one code. It should not be overlooked that Holst's index does not take chance agreement into account. In addition, with the aim of removing the codes caused by chance, the reliability of the coding's was re-examined by the Kappa index. The value of Kappa coefficient was 75%, which is still higher than the 60% limit, which confirms the reliability of the interviews.

## 6. Conclusion

The emerging phenomenon of cryptocurrencies, which is only a decade old and whose dimensions have not yet been fully identified, has a lot of potential. New phenomena have opportunities and threats that need to be identified in order to be able to take advantage of the opportunities and prevent the threats with tact. However, there are still no comprehensive laws about cryptocurrencies. But the leading countries in the field of cryptocurrencies have moved towards clear laws and creating a supportive framework to create a platform for the activities of companies active in the field of cryptocurrencies. In Iran, it is necessary to formulate the necessary laws in the areas of mining, taxation, ownership, investment, exchanges, taking into account the national interests. If the legislation for cryptocurrencies neglected, the amount of violations in this area will increase.

In this research, considering the new and relatively complex nature of cryptocurrencies and digital currencies, in order to investigate the variables affecting the future trend of cryptocurrencies, we tried to identify these factors by studying previous literature, conducting interviews with specialists and using related software.

The output of the model regarding the variables affecting the future trend of cryptocurrencies in the region summarized into four main themes: laws and regulations, investment, monetary and financial exchanges and security. This means that these four main themes will be the most important in determining the future state of money and cryptocurrency. The important point is that according to the sub-themes resulting from the model, it can be said that a complete and comprehensive part of the variables and topics have played a role in determining the state of cryptocurrency in the region.

Considering that the output of the model, according to the interviewees, mostly considered the dimension of the region and the country of Iran, therefore, it can be predicted that the mentioned countries, in order to optimally use the advantages of cryptocurrencies in the implementation of their economic and political goals, should consider the dimensions of laws and consider regulations, investment, monetary and financial exchanges and security. In other words, using the actual capacity of new money requires special attention of governments to the mentioned categories.

It is worth mentioning that caution should be observed in generalizing the research results. Because in qualitative research, the investigated phenomenon is studied in the context in which it occurs, so the possibility of generalizing the results and findings of the research to other conditions and situations is limited.

In the end, it should be mentioned that this research was conducted cross-sectionally, and the results obtained in this research are the result of interviews with experts regarding the current state of the new and digital monetary system. In addition, due to the novelty of the issue and the possibility of changing the conditions, rules and regulations and other issues regarding cryptocurrency and the future of money, the chance of changing the results at different times is possible. For this reason, it is possible to validate dimensions and variables over time by repeating the research in different periods of time. Therefore, it is suggested to conduct this research longitudinally to ensure the relationships between the variables.

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