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Review Article

## DIGITAL CURRENCIES AND THEIR INFLUENCE IN BUSINESS

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### Abstract

Money as an instrument for making payments, is indeed a very important tool. Without it, it would be impossible the exchange of goods and services within the economy. As time moves on, money has gone through different stages of development, even transforming the traditional system of payments into a contemporary system of payments where the main item is digital money in all kinds of forms and by-products. Hence this includes digital currencies.

Although for the time being digital currencies do not have the power of replacing the common currency, they can therefore influence on changing the way of doing business and the functioning of society, mostly by easing the realizations of various transactions, accompanied by a series of inevitable risks in functioning business operations. The field of digital currencies is a new one and it influences on payment system, therefore it acquires detailed analysis of their full potential, especially the one in the function of business and its development by conclusions and recommendations in eliminating the risks that attributes to digital currencies. Therefore, we need to identify all key factors that might be decisive for individuals or particular businesses to choose or not the use of digital currencies in making financial transactions, dealing with all positive and negative aspects that will be unwound in this work.

**Keywords:** Digital currencies, payment system

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### 1. Introduction

Rapid development of technology has brought digital currencies as a new form of money and currency. Digital currencies rely on information technology for the issues of transactions, without dealing of various financial institutions that would act as intermediary in this process.

Thus, it needs an investigative and critical approach of all aspects about digital currencies that leads to analyzing all advantages and disadvantages that link with the influence trade relations between individuals and businesses. For this purpose possible recommendations and research on effective implementation of these forms of payment instruments is needed.

Digital currencies can also bring the risk portfolio which indeed is related to instability of value and the lack of real value. All these factors are influenced by legal persons that are assets of high risk factors for economic results of businesses that deal with them.

The successful story of business needs a combination of great business idea, effective productive system, talented management, and a creative plan for marketing. But all this can be useless and pointless if financial resources are missing. These resources are conditional factors in functioning of financial system of a country and financial decision making inside a business organization or family economy.

Economists define money as means that is generally accepted as an instrument for payments of goods and other various services. [1]

Money, as an early important discovery of the human civilization is a necessary precondition for developing the trade and business relations. As it stands, money represents mediation between the seller and buyer about a particular product or service.

Today, money can be observed as a means of exchange, you can buy goods or material products. Also the products and goods can buy money, but the material products or goods cannot buy another product. And here we see money as a means of exchange, thus by adding the value in the process of conducting transactions and exchange of products and service in a society or economy.[2]

## **2. The aim and objectives of this work**

Living at a time of development of technology and its influence on every sphere of human development, including banking, financing, and realization of financial transactions, it is a necessary for us to focus the attention on the research of this field. Fast developments that occur in the world of technology, do not leave the money aside from its forms and functions.

The objectives of this work relate to the identification of the advantages and disadvantages, possibilities and challenges of the digital currencies. The eventual results will be analyzed with critical view, focusing on in interconnection and the influence of digital currencies i.e. cryptocurrency with the business sector, analyzing if this currency supports or obstructs in effective realization of business transactions between the various sides in the world of business thus, results on performance of the country's economy.

Given that the market of digital currencies is still in its early days, every possible analysis and research in this direction is needed. It is also necessary identifying positive and negative aspects about the influences of digital currencies in the society and businesses. These aspects are badly needed and add value on identifying the digital currencies as an instrument for realizing of financial transactions.

## **3. The influence of digital currencies in business**

The concept of digital currencies offers many opportunities in business efficiency and effectiveness by reducing or eliminating the costs or commissions and brokers of transactions. Meanwhile, when verified, the payments through digital currencies become irreversible, thus avoiding additional payments for problematic and disputable transactions.

In general, digital currencies have positive effect on remittances, i.e. financial transfers by reducing costs of broker and commissions of exchange.

The trends of digital currencies affect trade markets in various manners. This blockchain technology product creates efforts in producing business developing options and liquidity of development of industries.

The public opinion is "flooded" with the news concerning digital currencies, as this is considered as an important field.

The interest for digital currencies, like Bitcoin, is raised during 2017, since the value of a Bitcoin unit in 12 months period, went from 1.000 to 20.000 dollars per unit. [3]

One of the ways the digital currencies influence the businesses: [4]

*Immediate financial transactions* – The transfers between the banks are very complex issues and can take a lot of time for their realization. When dealing with payments from and to the foreign countries, things complicate and time is needed for financial transfers. Digital currencies make fast and immediate transfer of financial means between the various subjects, no matter the overload of the technology network that the blockchain and cryptocurrencies operate. This means that funds in digital currencies can be transferred in minutes. This eliminates the problems with the flow of money, liquidity and influences positively on effectiveness and efficiency of businesses.

*Digital currencies ease international transactions* – Blockchain technology helps realizing fast international monetary transactions, meantime offering other benefits to consumers, suppliers and other parties in foreign countries.

*Powerful Smart Contracts* – When various businesses use blockchain technology and digital currencies, it is possible to implement the system called “smart contracts” in regulating common issues. Smart contracts are computer programmes that are self-implemented and with no third-party intervention, in particular circumstances, in defining obligations, benefits and penalties for the accorded parties in given circumstances.[5] These contracts can be achieved any time, digitally signed, and cannot be modified after being accorded. They usually operate in the manner of “if-then” and can be realized when certain preconditions are fulfilled. For example when an accorded product is being issued at an accorded date, the payment which is the financial transaction is being realized automatically. This not only increases the speed and reduce the steps for realizing payments and service, but also eliminates the need for additional fees that usually burden a common business contract. By using this type of contracts, businesses do not need to pay for lawyers and notaries, or spend time following clauses of usual contracts in implementing and executing a contract issue that the parties have previously agreed. [6]

*3.1. Advantages and disadvantages of digital currencies:* Cryptocurrencies or digital currencies day by day have an impact on financial ecosystem. These currencies are revolutionary in terms of the way they realize transactions, investments, and growth of various business capital.

Digital currencies or cryptocurrencies as a new product in the market of electronic forms and instruments are being used by natural bodies and legal entities for the purpose of realization of financial transactions electronically through the “peer-to-peer” network.

Meantime, these currencies have their advantages and disadvantages that characterize their usage by individuals and businesses in realizing certain financial transactions.

The benefits of cryptocurrencies usually are the transparency in growth, tracing exact numbers of realized transactions, permanent registry of data and reduction of transaction costs. [7]

Advantages of the digital currencies are of different natures, such as: [8]

- Digital currencies ease the process of transfer of funds in direct way between two parties, without the need of a mediator as a third party in this process.
- Financial transactions are being realized with a low cost, so reducing the costs applied by the banks or other financial institutions.
- Digital currencies are capable of keeping their value during a potential inflation.

Some of the main advantages of digital currencies that are attractive to businesses are: [9]

- Digital currencies are an extraordinary possibility of investment – For the businesses that aim expansion and growing their activities, digital currencies are an ideal tool for investment.
- There is no need for supervision institutions like banks, for realization of transactions – As the financial transactions are being conducted by the “peer-to-peer” system. This means that the processes and business relations are made directly between parties, with no need of the bank as a mediator. This way of functioning enables the possibility of realizing fast transactions, by reducing costs and exchange of currencies.
- Transactions that are being realized through the digital currencies are anonymous – Digital currencies are being stored at digital wallets, and when a business transaction is being conducted, all public info is kept as an identity of a digital wallet. This way of functioning

of the digital currencies protects the identity of the client – buyer, client’s business identity and the identity of the seller or provider.

- Digital currencies ease the realization of international financial transactions – As the digital currencies are unique, the sides involved in business and their transactions should not worry about commissions, or costs of monetary exchange respectively.

This type of currency contains another side, which is still unknown to the public, and that deals with the complexity of supporting technology of digital currencies, various regulatory implications and challenges of implementation. [10]

Disadvantages of cryptocurrencies are based on following facts: [8]

- Half-anonyme nature of transactions through cryptocurrencies makes it more suitable for illegal activities such as money laundering and tax evasion.
- As the value of trade market of digital currencies is set by the request and offer, the value of the trade on digital currencies can flow enormously, characterizing it with the drop of their value.
- The costs of creating digital currencies are very high.
- Although blockchain technology is very secure, digital currencies as part of their eco system are not immune to threats relating to cyber attacks.

*3.2. Risks related to digital currencies:* Using digital currencies pose some risks that relate to using these currencies as payment instrument or investment, that generate earnings, ways and costs of exchange, financial integrity, reputation and regulatory and law staff in the field of digital currencies. [11]

Digital currencies, besides positive aspects, they face a lot of challenges and risks in their usage and functionality. Here are some of the main risks and challenges: [11]

- The lack of supervision – although independent decentralization is expected to be attractive for millions of users of financial assets like digital currencies, this in fact is not what happens in fact. This is supported as well by the inability of proving possible stealing of funds in cryptocurrencies as a result of lack of legal panel that would regulate the field of digital currencies. Also, there is not a trusted system that would guarantee the owners of digital currencies of any potential financial failure.
- The lack of regulation – knowing that digital currencies are a new concept, many governments around the world attempt to regulate this field, still there is much to be done. In general, the lack of law regulations is an existing obstacle in wide usage of digital currencies, thus influencing on insecurity of tax payments for these financial assets.
- Risk of potential hacking – dealing with viruses on smartphones and computers of users of blockchain technology, cyber attacks happen regularly and are part of the system of digital currencies, especially wallets of digital currencies in large amounts of money.
- Unpredictable market – whether it is as a result of the effect of manipulative stories that the public faces, or as a result of the bigger owners of digital currencies that “change the price” of these currencies for personal benefits.
- Bankruptcy and closure of exchange of cryptocurrencies – is a frequent case in the world of digital currencies. When a traditional bank goes bankrupt, it has a certain amount of reserve fund that is necessary for compensation of the deposits and owners of the money. But when an exchange of cryptocurrency fails or goes bankrupt, its users are unable of retreating funds from their accounts. In fact, there is not any law protecting the owners of digital currencies from any possible failure of this nature.

#### 4. Blockchain –Technology of digital currencies

Blockchain is a technology in progress which offers the possibility of re-engineering of economic models and also enables the creation of new products and markets that never existed and being profitable before. [12]

Blockchain technology offers the possibility of strengthening the services that are vital for ongoing processes of trade relations. In fact, this technology represents an information base where the information about realized transactions is being stored.[13]

Blockchain is capable of improving every process that people tend to verify, send or store information securely. This info usually deals with the people's ID, history of products, digital assets like money or currencies. This info base in its registry stores info about objects, individuals and their internal relations.[14]

Blockchain technology, offers advanced possibility of certifying identity compared to actual applying systems. This technology extremely simplifies the transfer of trade assets and it affects in growing credibility towards it, thus adds to the possibility of making extra financial services based on the trade of goods.

This open-source technology means it can be “modified” and shared by the people because of public access, in verifying and suggesting change of codes that do come need approval from the network itself. [8] This technology enables the safe-keeping info related to various transactions in blocks. Every block contains transactions register related to the previous block thus enabling a blockchain.[15]

All information stored in this chain is transparent and permanent. As such, all the data of registered transactions in the decentralized register cannot be changed or moved due to cryptographic hash codes for guarding data.

Hash codes or hash functions are being defined as effective computer functions that are known as cryptographic hashes, since these functions prevent the uncovering of real content from unauthorized access. [16]

In one word, hash functions are a very important cryptographic asset. They consist of a complex chain of numbers and letters, protecting specific data, thus acting as codes for verifying authenticity of certain transactions.[17]

This characteristic makes the blockchain technology very attractive for applications and various industries in helping face different the tasks that usually bide with possible ineffective operations.

People very often think that their blockchain data and transactions are open to public, based on the fact that the decentralized registry is public, which is not the case.

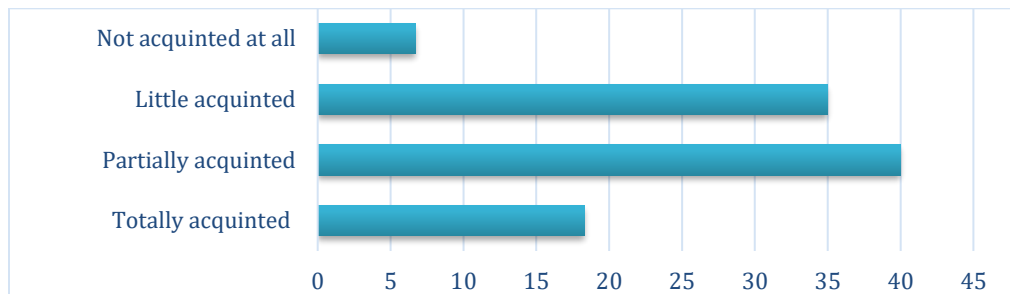
The term blockchain is very often used for describing the technology of book-keeping or registry of accounting and not as a product or specific solution. Today, there are many protocols that are viewed as blockchain and that can be classified in shared technology of accounting or registry. Blockchain technology contains the following concepts:[18]

- ❖ This technology keeps data, serving as a data-base and their change,
- ❖ Reflects and shares the information into a network of computers in real time,
- ❖ Offers the function option “peer-to-peer” eliminating the need for a possible intermediary
- ❖ Offers cryptographic methods such as digital signatures that prove the ownership and authenticity as well as hash codes as reference for realized transactions.

Blockchain as a technology can be public –where everyone has access and private – where the access is limited to certain individuals. There is also a consortium type which is used as a co-operation and in coordination with institutions or other junctions. [19]

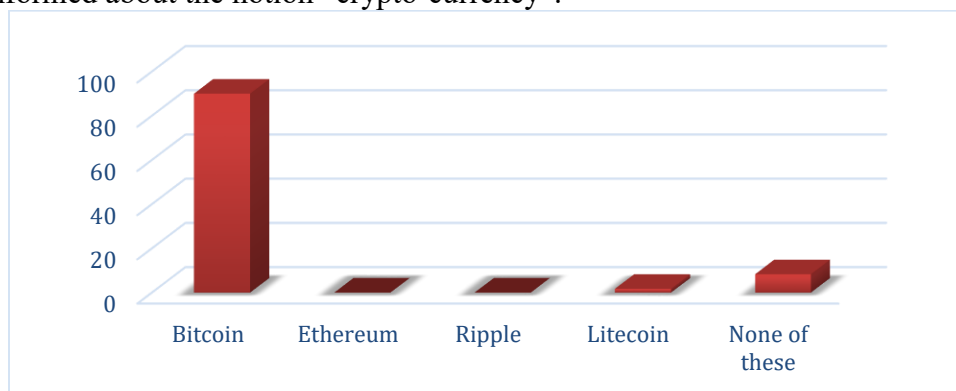
#### 4. Discussing the results

Dealing with the fact that the monetary system in North Republic of Macedonia, which is determined and defined from the institutional frame and laws, does not recognize the digital currency as an instrument for realizing financial transactions, respectively as an instrument that is able realizing turn-over inside and outside. The research will involve different individuals as natural bodies and legal entity as potential consumers of services offered through different platforms that have the digital currency as a payment instrument.



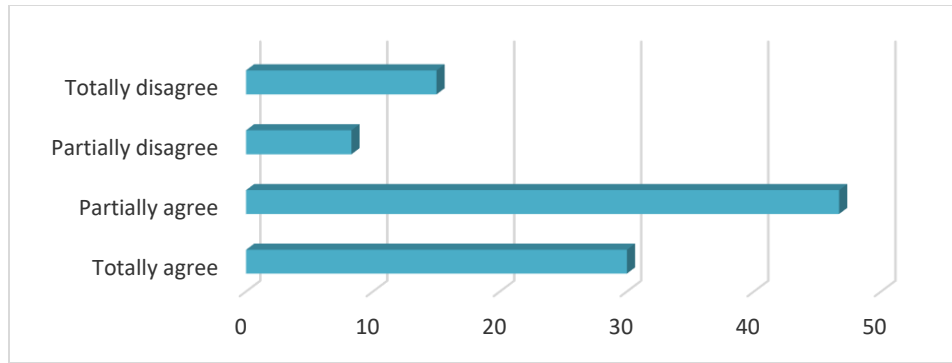
**Graph. 1** The level of recognition of the term “digital currency”

From the conducted research we see a small number of people been informed about the concept of digital currency or crypto-currency, at 6.7% of people been questioned, but it is a large number of people been little informed (35% of them questioned) and partly informed (40% of the people questioned). As we see from the illustration 3, about one fifth of people been questioned or 18.3%, are fully informed about the notion “crypto-currency“.



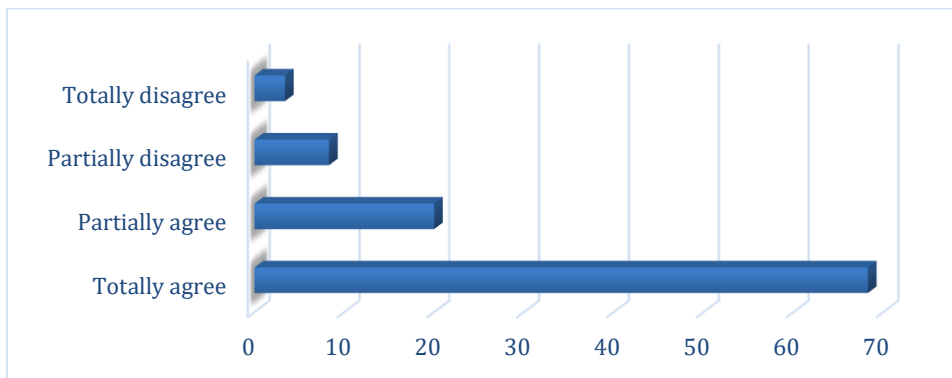
**Graph. 2** Most-known digital currency

The fact that which digital currency people are familiar with, 90% of the people been surveyed responded by choosing Bitcoin as digital currency, meaning that the majority of the people been surveyed are not familiar with the wide range of products representing digital currency. People taking part in the questionnaire never heard or read about digital currency Ethereum and Ripple, 1.7%, know Litecoin as digital currency and 8.3% of those questioned have no knowledge of any kind of crypto-currencies as illustrated below.



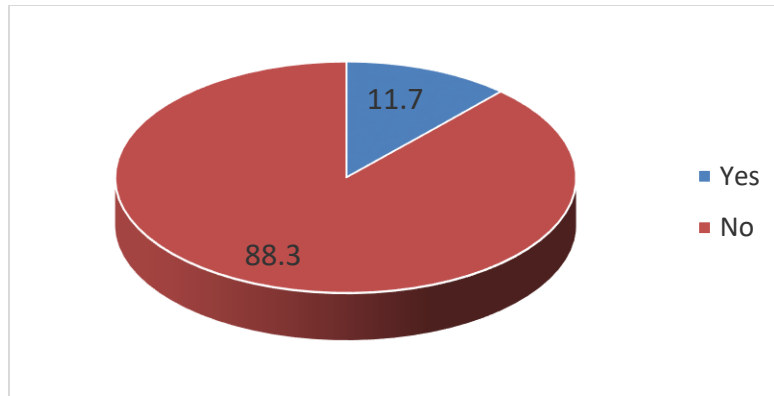
**Graph. 3** Necessity of digital currencies as part of monetary and financial politics

Large number of people been surveyed, totally agree (30%) and partially (46.7%) with the fact that digital currencies in all their forms should be part of the monetary and financial politics of North Republic of Macedonia. As we see from the illustration Figure 5, small number of people been surveyed (8.3%) don't agree partially with the fact that digital currencies should be part of the monetary and financial politics, anyway it's not a small number of those been surveyed, about 15% that oppose this ascertainment or thesis.



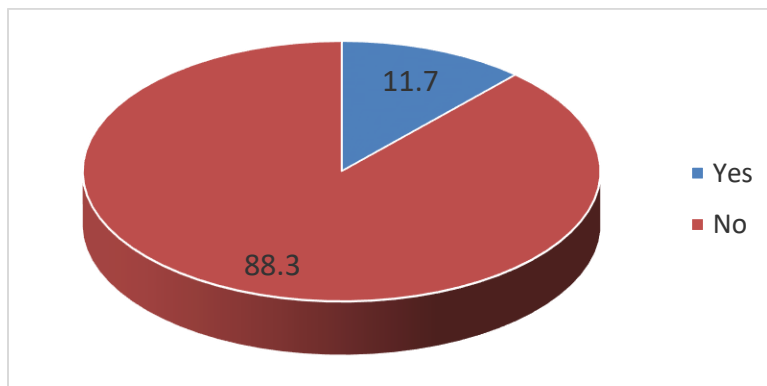
**Graph. 4** Need for regulatory/ law framework creating, saving, using and trading with the digital currencies

More than two thirds of people surveyed or 68.3% of them, as seen from the figure 6., think that "competent organs should set a law / regulatory framework in creating, saving, using and trading with digital currencies for the purpose of protecting the clients from the potential risks that deal with digital currencies". Those surveyed totally agree with this thesis. It is not a small a number of those been surveyed either that partially agree with the above-mentioned thesis (20% of people surveyed). Anyways it's a small number of those been surveyed that partially oppose (8.3%) and fully (3.3%)



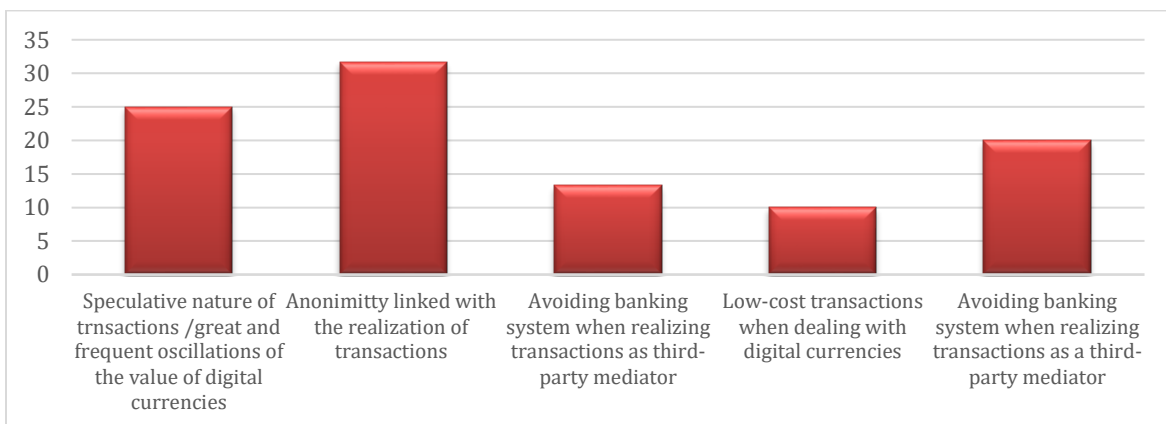
**Graph. 5** The level of ownership in digital currencies / possession of digital currencies

Vast majority of the surveyed or 88.3% of them, as seen on figure 7, do not possess digital currency. A relatively small number of people surveyed or 11.7% of them are owners or possess digital currencies.



**Graph. 6** Level of the realization of transactions through digital currencies

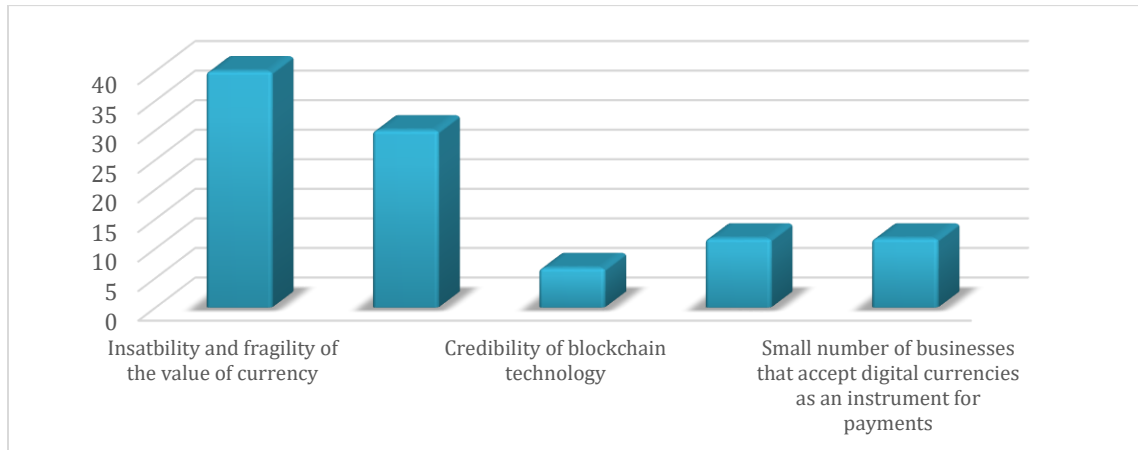
Concerning the realization of financial transactions by using digital currencies / crypto-currencies as a payment instrument, in the illustration figure 8, we see that large part of those been surveyed or 88.3% of them never realized a financial transaction by using digital currency / crypto-currency as a payment instrument, and 11.7% of those surveyed have realized such a transaction.



**Graph. 7** Reasons/causes for investing/realizing transactions through digital currencies

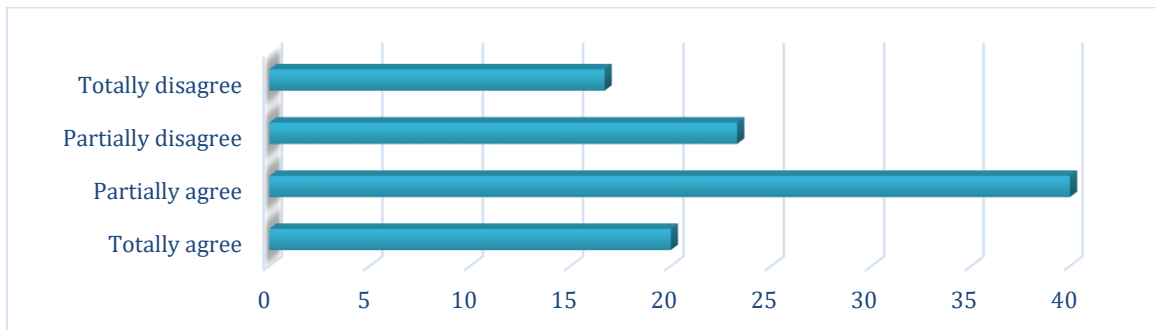


From the figure 9, we can see the split thoughts of people taking part in a survey about identifying right reasons and causes in investing in digital currencies and taking parts in transactions. About 25% of those surveyed in taking such action it has to do with the speculative nature of transactions that is the high and frequent oscillations of the value of digital currencies. For 31.7% of those surveyed, the main reason for investing in digital currencies has to do with anonymity in realization of transactions. 13.3% of the surveyed people prioritize avoiding the banking system in realization of transactions as third-party mediators.10% of the low level of transaction costs that deal with digital currencies and 20% of individuals been surveyed made the decision in investing and using digital currency for the reason of short time needed for the transactions to take place.



**Graph. 8** Distinctions of digital currencies that encourage investments / and usage of digital currencies

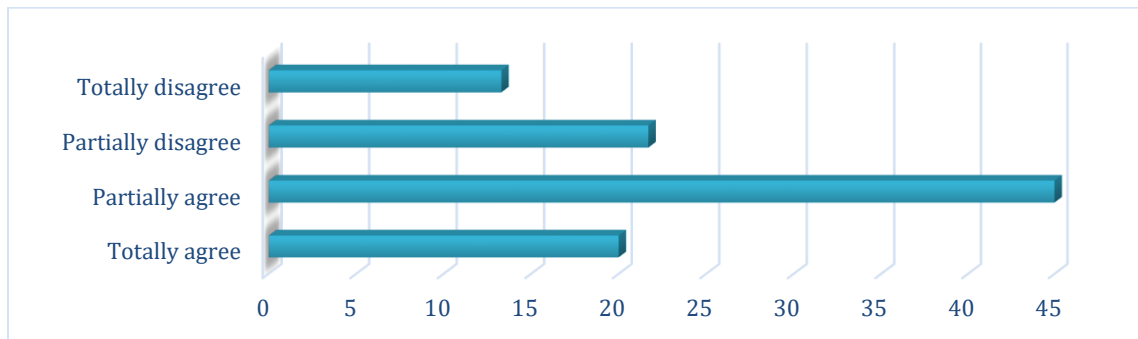
More split thoughts have the people been surveyed about the characteristics of digital currencies that makes hard for them to use these currencies for realizing their financial transactions. As we can see from figure 10, 40% of those been surveyed point out the instability of the value of the currency as an obstacle for investment and usage of digital currency.30% of the surveyed people point out the shortage of regulatory staff as an obstacle for using digital currencies. 11.7% of those been surveyed an obstacle remains the form of digital currency (the currency exists only in a computer); a small number of businesses that accept digital currencies as a payment instrument is at 11.7% and for 6.7% of those been surveyed condition the usage of digital currency with the credibility of the blockchain technology.



**Graph. 9** Potential of digital currencies dominating the financial ecosystem

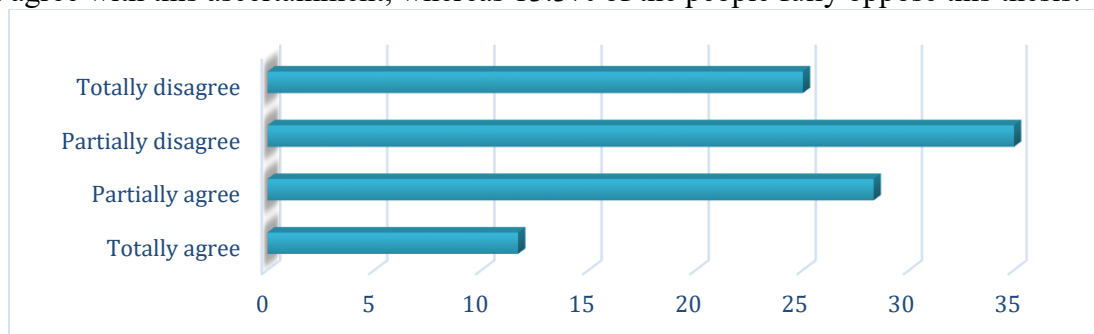
More than half of those surveyed share the thought the in the near future digital currencies will dominate the market of financial transactions comparing to those traditional instruments of

payments. As we see from the figure 11, 20% of those been surveyed share the same opinion. This opinion is partly supported by 40% of those people surveyed, whereas 23.3% oppose this thought and 16.7% of those surveyed oppose.



**Graph. 10** Capability of digital currencies in ruining stability of financial and monetary politics on global level

There are split thoughts about the ascertainment that “digital currencies can ruin the stability of financial and monetary politics on global level”, there are also split thoughts as we in the figure 12. This thesis is supported by 20% of the people surveyed respectively 45% of those surveyed partially support this thesis. More than one third of people oppose this thesis that is 21.7% of them don’t agree with this ascertainment, whereas 13.3% of the people fully oppose this thesis.



**Graph. 11** Level of readiness of our society for “coexisting” with digital currencies

As we can see from the illustration chart above, the surveyed people have got split opinion on the ascertainment if our society that is businesses and consumers are conscious and ready for “coexistence” with the digital currencies. In fact vast majority of the surveyed or 35% don’t agree with this ascertainment opposite the 25% of the surveyed that share the thought that our society is not ready at all for cooperation in the field of digital currencies. On the other hand 28.3% of the surveyed think that our society is partially ready for cooperation with the digital currencies and 11.7% of people surveyed think that our society is fully prepared for the cooperation with digital currencies as an instrument for realization of financial transactions.

## 8. Conclusions and recommendations

From the work and achieved results through the exploration of the literature and those from conducted researches, we identify conclusions and recommendations as listed below:

- Population in our country is very little informed about the concept and the functioning of the digital currencies. So it is necessary a sensibility campaign form the stake holders of the digital currencies to acknowledge people and businesses with the concept of the digital

- currencies, also highlighting the advantages and possibilities that crypto-currency technology offers as well as the risks and disadvantages that come with the digital currency.
- Since the digital currencies are not part of the national monetary and financial politics of the Republic of North Macedonia, it is necessary beginning an initiative through the competent authorities like government and parliament to commence activities for legalization and legitimation the actions of the digital currencies. All this with the objective – protecting the users and investors of the digital currencies from the possible financial risks and losses. Hence, it is necessary the creation of the regulatory and law staff that regulates the use of digital currencies for those to gain status as a legal instrument for the realization of financial transactions.
  - Introducing the positive aspects of the digital currencies and benefits they offer to the business, starting from the reduction of transaction costs and the short time for this realization. Businesses in the frame of the national economy should start analyzing the possible ways of implementing the use of digital currencies as an instrument for realizing transactions with the business partners of foreign countries.
  - Businesses in the frame of our economy that in the future would start using digital currencies as an instrument for realization of financial transactions, should analyze in detail all the deficiencies, risks, and challenges of the implementation of this type of currencies. It's a fact that digital currencies can be a target of cyber attacks, thus violating the privacy of clients and easily can be used as a fraud and illegal financial activities.
  - As the digital currency field is still unregulated in the frame of many global economies, thus still being unregulated and the manner of taxation. As a particular business intends to use digital currencies as an instrument for realization of transactions should take into consideration this fact and to get acknowledge of the regulations of the countries that do business relations and treatment of those countries towards taxations of crypto-currencies.
  - Dealing with low rate of investment in different technologies of businesses in our country, including financial technology, such as blockchain technology with their digital currencies, businesses should also increase the rate of investments in the field of digital currencies and innovations. Human resources should be able to create and use digital currencies as instruments for realization of financial transactions by always taking into account cost-benefits activities.
  - People and businesses should pay special attention to digital currencies and blockchain technology by dealing with the positive effects of this technology that enables the sending of remittances from one corner of the world to another, by only being connecting to an internet network and possess electronic devices like smart phones. Thus, digital currencies eliminate the barriers that deal with information and finances.
  - Dealing with high level of oscillation of the value of digital currencies, respectively dealing with instability inconsistency of the crypto-currencies, individuals and businesses that claim to invest in digital currencies as an instrument for realization of financial transactions and recognize all risks and challenges of implementation of digital currencies and accounting the risk to bring adequate decisions that suit the business.
  - As the concept of the functioning of digital currencies is free from the influence of any financial institution, like central banks, and the fact that it is a decentralized currency realizes the functions of fiat money, this currency could be ideal for the individuals and

businesses that lose credibility in national currencies and monetary and financial politics on national and international level.

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