



Clarisse Achard

# The Use of Cryptocurrencies

Consumers' Perceptions of the Use of Cryptocurrencies

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## **Abstract**

Author(s): Clarisse Achard  
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This paper aims to investigate the use of cryptocurrencies, more precisely : How do consumers perceive the use of cryptocurrencies? and to verify this hypothesis : “How does the degree of knowledge and demographic factors affect how consumers perceive the use of cryptocurrencies?” In order to answer these questions, an online survey was conducted, focusing on the use of cryptocurrencies in three areas : investments/savings, payments, and loans. The results from the survey indicate that generally speaking, participants are not interested in using cryptocurrencies, if not “neutral”. Furthermore, the main motivation for using cryptocurrencies is the financial gain from investments while the main obstacle is the lack of knowledge. In addition, it was discovered that knowledge and demographics also have an impact on participants’ perceptions. Men and young people are more interested just as are more knowledgeable participants. As a result, this paper not only helps understand consumers’ interests and profiles but also identifies future possible work such as addressing the problem of knowledge with better communication with the aim of increasing the general degree of knowledge and thus, increasing the level of interest.

Keywords: Cryptocurrencies  
Consumers’ perception  
Use of cryptocurrencies  
Interest

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# 1 Introduction

## 1.1 A brief overview of the topic

What is a cryptocurrency? If you think that a cryptocurrency simply means digital cash or virtual currency, you are probably wrong. A cryptocurrency is much more than that. In fact, it relies on a complex technology called a blockchain involving multiple technical components such as a wallet, miners, keys, etc... A blockchain is fundamental in the cryptocurrency system as it is what makes the process decentralized, which means it is not issued by central authorities (government, financial institutions, etc.). It also provides a secure environment for the transaction process. At first, a blockchain is created as the basis of cryptocurrencies (Treleaven P. et al., 2017). However, this technology has far-reaching potential in other areas such as decentralized finance protocols, or even supply chain management. Even though cryptocurrencies are popular all around the world, this fascinating technology – a blockchain – is not enough visible in the eyes of the world.

In addition to the advantages mentioned above, a blockchain solves various current problems caused by actual currencies. In fact, the conventional financial system is slow, expensive (charging high processing fees), involves a third party, etc. People look for an alternative solution that is easier, faster, cheaper, and still reliable and flexible. That is why they have turned to cryptocurrencies, with their philosophy of “breaking all borders and barriers” (Hossain, 2021) and their global perspective. While current digital currencies become more and more popular and attractive, some others failed in substituting fiat money and solving the problem of privacy and double spending. Double spending is the possibility that a currency is spent twice, meaning the same coins are spent more than once. This concerns especially virtual currency due to its digital nature, making them easy to reproduce. A blockchain is a solution to this problem since every transaction, once confirmed, is immutable, which means no one can ever change or delete it

(Techslang, 2021). This is why the actual cryptocurrency is different. It succeeds in solving the problems of current money. Although a cryptocurrency provides transparency, meaning that every transaction is recorded in chronological order in a public distributed ledger, it ensures anonymity and confidentiality.

## 1.2 Research question

For several years now, cryptocurrencies have been daily news. It is not surprising that people have heard about or even invested in it. But the question is, do they really know what it is? The truth is, not everyone understands the whole story about cryptocurrencies. While the term cryptocurrency is rather popular all around the world, the decentralized system, and the innovative technology on which it is based are not general knowledge. That is why it is important to talk about this topic. People should get familiar with this, and this study can offer them a possibility to understand it.

During the last decade, millions of dollars have been traded. Nowadays, different cryptocurrencies appear in the market : thousands of virtual coins running in more than 30 countries. This market become more and more efficient and effective in satisfying the higher market demand. A cryptocurrency is a fast-moving subject; today's status can be no longer true tomorrow. A cryptocurrency's importance changes every day, from simple innovative technology to nowadays a legal tender in some countries. While its future is uncertain, it is essential and interesting to look at its future perspectives and trends. Would cryptocurrencies totally replace fiat money in the near future? Would cryptocurrencies become the main method of payment? Cryptocurrencies grow gradually; more and more people talk about them or are even involved. With the constant growth of popularity of cryptocurrencies, their role in the future financial market is concerned. With its tremendous potential, its future perspective in terms of use is worth to be studied, which leads to the research question : *How do consumers perceive the use of cryptocurrencies?*

This study focuses on the attitudes and perceptions of the consumers regarding the use of cryptocurrencies : are they interested in using cryptocurrencies in the future if not already using them, and for what purpose are they willing to get involved in the cryptocurrencies' ecosystem. Particularly, the following hypothesis is considered: "How does the degree of knowledge and demographic factors affect how consumers perceive the use of cryptocurrencies."

For its part, the study contributes to the development of the finance industry in the way that consumers' needs, interests, and profiles can be better understood as they are investigated in the study.

This is about a high potential, high growth, and high prospect topic. More and more countries, as well as companies, legalize this form of payment and still, it lacks authorized regulation and supervision. Moreover, the criminality involved in the system. Now is the moment to address the perspectives of cryptocurrencies in our future financial market.

### 1.3 Structure

This paper is organized in the following way : In section two, the theoretical background of the topic is explained, including blockchain, cryptocurrencies, and decentralized finance. Section three describes the survey methodologies used to collect the data needed to answer the research question. The results obtained from the survey are presented in section four. The insights and the analysis of the results are discussed in section five. Finally, section six concludes the paper and provides proposals for future studies.



## 2 Theoretical background

### 2.1 Blockchain

It is evident that the word “Blockchain” seems to be complicated to understand since it is an innovative but complex technology. The following sections will give an overview of a blockchain’s environment, from the current situation to the future perspectives accompanying some technical basics and criticisms.

#### 2.1.1 The current situation

First, it is essential to provide a review of the current financial system and the problems it has caused over time.

Until a decade ago, the financial system is resumed as shown in figure 1.

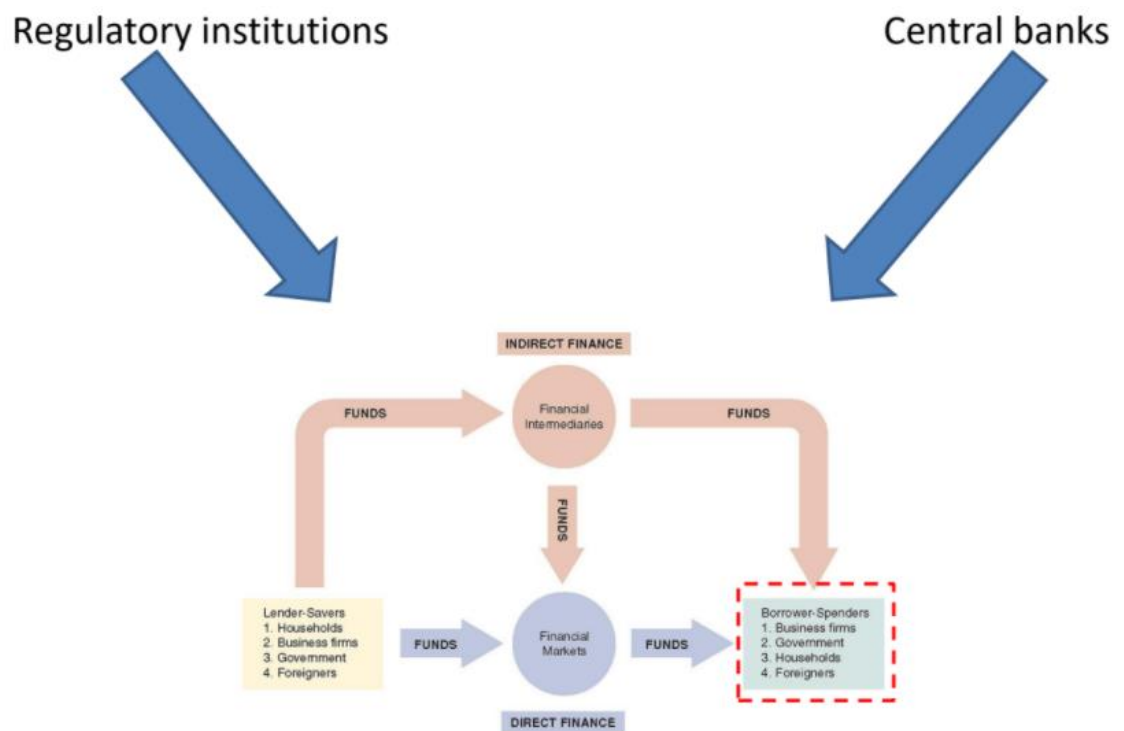


Figure 1. Diagram of the traditional financial system

On one side, regulatory institutions and central banks control the financial market. On the other side, financial intermediaries (“centralized trusted intermediaries”) are considered key elements of the ecosystem. In fact, the system depends on them to “guarantee trades in exchanges” (Central Counter Parties), “provide securities settlement” (Central Securities Depositories), “intermediate global transfer of money” (the Society for Worldwide Interbank Financial Telecommunication), “handle the settlement of foreign exchange transactions” (Continuous Linked Settlement bank), etc. (Varma, 2019) It was assumed that these central hubs were extremely powerful, so they were unlikely to fail, or in other words, “too big to fail”. However, the financial crisis of 2008 that reached a global dimension has proven it wrong. Large banks, including the ones in advanced economies, failed. One of these was Washington Mutual, which was “the largest bank failure in history”. (CNBC, 2008). Furthermore, the financial system works well thanks to trust as people have faith in these institutions. Hackings that occurred increasingly in financial institutions are one reason that has destroyed trust; “45% of financial intermediaries, payment networks, stock exchanges, and money transfer services, suffer from economic crime every year” (Tapscott, 2017). When trust is questioned, decentralized systems and blockchains become attractive, since they reduce the need for such trust (Varma, 2019). However, how does it actually work?

### 2.1.2 Blockchain’s basics

Before getting into the details of how a blockchain helps satisfy today’s needs, it is important to have a look at the basic concepts of which this technology consists.

The first thing to understand regarding a blockchain is that it is “a distributed ledger technology”. It is a “decentralized, shared, replicated, and synchronized record of transactions between contracting parties” (Treleaven P. et al., 2017). While the nature of a blockchain may make it seem insecure, cryptographic

integrity checks will prove it wrong. It ensures that no one can corrupt the system. As a matter of fact, the blocks of transactions are chained together. Altering one block will break its link with the next one so that it is impossible to change only one single block. If someone wants to tamper with any block, he needs to tamper with the next one, again and again, till the very last one. One could wonder how the blocks are actually chained together, the answer is with a cryptographic hash, which is a “digital fingerprint that uniquely identifies a piece of text” (Varma, 2019). It is important to point out that, any changes, even very tiny ones, cause major changes in the hash. Besides, it is computationally impossible to find two distinctive texts with the same hash and research a text by providing a given hash value. Since each block, except the first one, contains the hash of the previous one, altering one block means the hash will not match the one stored in the next block anymore (= links are broken). This is partly how the security is maintained.

Other than security, how can people trust a blockchain? There are some basic principles concerning this technology. First of all, as mentioned earlier it is a distributed ledger. It implies that the database is distributed, everyone on a blockchain can access the data while no one can control them. Additionally, peer-to-peer communication makes it possible for everyone to store and forward information to others. Moreover, the records cannot be altered (as explained earlier). Once a transaction is entered in the database and the accounts updated, it is irreversible. Various tools such as algorithms are used to ensure that the recording is permanent, chronological, and available to everyone on the network.

### 2.1.3 Blockchain as a solution

As mentioned above, the current system cause problems that force us to find an alternative solution for the good functioning of the financial system. A blockchain is that alternative solution.

Besides resolving the trust issue that occurred in the traditional system, a blockchain responds to other major needs as well. First, through decentralization

and disintermediation, a blockchain increases substantially to “the scope and efficiency of peer-to-peer transactions, turning previously infeasible business models into viable ones”. Intermediaries are necessary for today’s centralized financial system. They can “leverage their power to maximize self-interests” and grow to dominate economic activities with a “disproportionate power and profits”. A blockchain is a solution to the concerns over the monopoly power of those intermediaries by implementing a peer-to-peer network. This means that “no single entity can accumulate sufficient monopoly power to monopolize the network and exclude others from participating”. Thus, a blockchain is pictured as a foundation for spawning new business models as well as creating new opportunities for entrepreneurship and innovations (Chen Y. and Bellavitis C., 2020).

Besides the ability to control intermediaries’ power within the financial system, a blockchain achieves also high efficiency. In fact, the number of non-cash transactions worldwide increases from year to year; from 357.8 billion in 2013 to 620.9 billion in 2018 (Capgemini, 2020). With the global market becoming more and more interconnected, it is vital to find a solution to improve efficiency. A blockchain is an answer to that. It is reported that some distributed ledgers are able to perform at such a level equal to “an entire trading day’s volume at peak rates” (= 115,000,000 daily trades, or 6,300 trades per second for five continuous hours”) (Varma, 2019). In addition, a blockchain is “partition resistant”, meaning that even though one or several nodes (or computers) fail or are disconnected from the network, the rest of them continue to run. Unlike the central institutions, when one is down then the whole system is stopped, a blockchain avoids this kind of a situation by providing a copy of all the data in every single node.

#### 2.1.4 Blockchain’s future

While a blockchain has proven to be useful in fulfilling today’s needs, what about its future? Some major global businesses have already turned to

cryptocurrencies and blockchains thanks to their numerous assets. Generally speaking, from only two companies using a blockchain technology (PayPal and Walt Disney) in 2014 to 81 of the top 100 companies in the world now (Amazon, Microsoft, Samsung...), this high-tech has grown exponentially (Lim, 2021). In addition, a blockchain technology, as a cryptocurrency's foundation, has lots of other potential uses, including smart contracts (that execute actions when a set condition occurs) (DeVries, 2016).

“Smart contracts combine protocols with user interfaces to formalize and secure relationships over computer networks” (Varma, 2019). Again, one feature that these contracts have is the ability to overcome the trust issue. As a matter of fact, no one is going to trust the other to record the data as it should be nor to let the contract run on his/her computer. A blockchain acts as a shared computer so that it could provide reliability and security to all parties. While today, contracts usually depend on a third party to establish trust and connection, build relationships, etc., smart contracts facilitate the search and negotiation and automate the performance so that there is no need for human intervention. In the meantime, it reduces cost and improves efficiency. This new kind of formalization is useful in areas such as loans and payments but also laws, businesses, and accounting. Smart contracts are only a tiny part of what a blockchain is capable of, so, further studies and research will likely bring this innovation into a whole new dimension.

While the blockchain has reached such a level during the last decade, it is said to be still in its “infancy” and “an emerging research field” (Xu M. et al., 2019). In fact, a blockchain has lots of other potentials in finance alone (“mainstream payment and settlement, securities issuance, clearing and settlement, derivatives and other financial instruments, trade repositories, credit bureaus, corporate governance” among others). While its applications in many of these areas are already feasible, the challenges remain primarily “legal, regulatory, institutional, and commercial” (Varma, 2019).

### 2.1.5 Some criticisms

A blockchain is really too good to be true. Although it provides so many advantages regarding our current systems as well as our future, it has also some limits that are worth considering.

First of all, it comes as no surprise that the complexity of this technology and system is and will be a concern, it is stated that “The system in the cryptocurrency market is rather complex and quite difficult to understand, even for the players in the industry and researchers doing studies in this field.” (Fauzi M. A. et al., 2020). Then what about the others? Consumers, individuals, and people in general. How are they supposed to trust something that they do not even understand?

Second, as mentioned, a cryptocurrency is based on a blockchain technology, which is supposed to be secured by providing privacy and anonymity. However, users' identity is still possible to uncover by checking the blockchain, Bitcoin address, and cross-referencing information from the record (Hossain, 2021). One of the biggest attractiveness of a blockchain technology comes from its ability to provide security. If its ability is questioned, then what is the point?

In addition, a blockchain is “susceptible to attacks due to easy access” (DeVries, 2016). The example used in the article was Mt Gox (Magic the Gathering Online Exchange), a global Bitcoin exchange that went bankrupt after hackers robbed it in 2011 (460 million USD). Moreover, more than 26 startups failed in taking the advantage of Bitcoin, mostly because of the difficulty of maintaining security. Again, security failure is mentioned.

There is no doubt that a blockchain has marked a great evolution in terms of the technology of the modern world. However, while its expansions in other domains are more and more considered, it still needs improvements in order to achieve its full potential.

## 2.2 Cryptocurrencies

Now that the basic concepts of a blockchain have been explained, we can cut to the chase and have a look at what is a cryptocurrency that has been so popular and famous over the world during the last decade. The following sections will give an overview of the cryptocurrencies' ecosystem, from its definition to its future perspectives accompanying its legal issues and some criticisms.

### 2.2.1 Definition

The first thing to consider when trying to understand a cryptocurrency is obviously how it is defined. While it is mostly described as digital or virtual currency, its position regarding whether it is real money is not that obvious and has become one evident debate. Today, it is still premature to acknowledge this new type of currency as the replacement for traditional fiat money (Fauzi M. A. et al., 2020). In fact, this new era needs further understanding in the application, in theory as well as in practice. While some people consider cryptocurrencies, particularly Bitcoin as a platform for payment rather than currencies, others think that they are much closer and meet the definition of currency. However, even though the definition of a cryptocurrency is unclear and confusing, it is considered a solution against inflation regarding fiat money. The Argentine peso has an extremely high inflation rate. Besides, the Argentine population is highly unbanked. While in the past, Argentinians would convert their currency into US dollars to preserve their value, due to new restrictions, cryptocurrencies have now become a prominent legal way to meet their need (DeVries, 2016).

### 2.2.2 Value

The second thing to be considered is a cryptocurrency's value. You may know what you can buy with \$1 or 1€, but do you know what 1 Bitcoin is worth? Most of us have experienced the rise of Bitcoin, which skyrocketed to \$18,940.57 in 2017 (Hossain, 2021), leading us to question the real value of a cryptocurrency.

It turns out anything can be valued as long as people have faith in it. Concretely, value exists for a cryptocurrency thanks to users' trust. They believe that by accepting it as payment, they could use it elsewhere to buy anything they want or need (DeVries, 2016). However, trust is not the only element that drives value. A cryptocurrency can be compared to the "Fire Triangle". While fire needs fuel, oxygen, and heat, a cryptocurrency needs user acceptance, vendor acceptance, and innovation, without which it may not become a legitimized currency. Transaction increase reflects the growth of user acceptance. For several years now, there has been a tremendous increase in the number of cryptocurrency transactions which in turn drives the other two aspects. It is a cyclical effect. As the flow increases, vendors will have to accommodate customer needs. As vendor acceptance increases, more people will use it.

### 2.2.3 The market situation

There is no doubt that cryptocurrencies have been a flagship product during the last decade. But compared to other financial products that have been used for years, how big is the cryptocurrency market? When looking at the overall cryptocurrency market capitalization, there is a significant increase from for example 2018 (\$759.38 billion) to 2021 (\$2 368.53 billion), which is equal to an increase of 212 percent in 4 years (Best, 2022). When comparing the market capitalization of both the New York Stock Exchange and NASDAQ, two of the biggest stock exchanges in the world, the increase from the same period is only about 56 percent (\$33,58 trillion in 2018 vs 52.31 in 2021) (Statista Research Department, 2022). While the stock exchange market still dominates facing cryptocurrencies, the latter could outperform the traditional market, considering their speed of growth.

Cryptocurrencies, most of the time, are referred to as investment instruments, because of their volatility, joining sometimes the "characteristics of securities" (Steinmetz F. et al., 2021). As a matter of fact, an eloquent example is Bitcoin,



from \$196.02 per unit in October 2013 to \$61 374.28 in October 2021 (Best, 2022). Nevertheless, cryptocurrencies, as the name implies, can also be considered currencies, despite the big difference in terms of price. In fact, the most expensive currency in the world in 2021 costs only \$3.32 (Kuwaiti Dinar) (Protska, 2021).

Although cryptocurrencies seem to be uncertain and unsettled, there is a tremendous increase in crypto-related figures : the number of cryptocurrencies worldwide has been multiplied by 150 times from 2013 to 2022 (66 vs 9 929) (Best, 2022); the number of users has been multiplied by 44 times from 2016 to 2021 (5 vs 221 million) (Best, 2022); even the number of Bitcoin daily trade volume has reached \$350.97 billion in February 2021 (Best, 2021). These are only a few examples of how cryptocurrencies have taken over our society during the last few years. Speaking of which, these numbers are expected to grow in the future.

#### 2.2.4 Consumer perceptions and profile

While the study focuses on consumers' perceptions of the use of cryptocurrencies, there have been other studies on consumers' trends. Steinmetz et al.'s (2021) study compares several population surveys concerning subjects related to cryptocurrencies, including studies on the motives of cryptocurrency users and cryptocurrency usage. Concretely, what motivates people to use cryptocurrencies, and for what purposes? Basically, the most common reasons are summarized as below : investment opportunity, high yields (typically 5 percent on established platforms which is "10 times the yields on insured bank deposits" (Szalay, 2021)), diversify the portfolio, gambling, savings, no regulations. It was noticed that cryptocurrencies are above all referred to as financial gain. While these responses give an image of cryptocurrency usage focused on investment, there are actually other opportunities to use it. The most popular ones include using cryptocurrencies as payment. In fact, they have the "capability to procure

purchases over a dispersed network, without the main node working as a financial institution” (Rahman A. and Dawood A. K., 2019). Furthermore, the rise of online payment and the ease of doing so make it even more acceptable. Unlike investments that require expertise and imply a certain risk, most people are already used to cashless payment. The adoption of cryptocurrencies as a payment method seems to be easier. Nevertheless, there are other usages of cryptocurrencies such as borrowing. However, they are still limited.

In spite of the fact that cryptocurrencies become more and more common in people’s everyday life, there are still hesitations and fears among the public. While most of the surveys quoted in Steinmetz et al.’s (2021) study are limited in terms of geography, the outcomes are very similar between different countries. When measuring the awareness and knowledge of cryptocurrencies, most of the respondents have heard about cryptocurrencies or Bitcoin, but do not have much detailed knowledge about them, if not know anything at all. When it comes to trustworthiness, there are those who believe in cryptocurrencies (price stability, the replacement for fiat money, security...) and those who distrust them (“financial bubble”, “never invest in them”, fraud, volatility, security, risk...). Moreover, the most redundant reasons not to buy or invest in cryptocurrencies are resumed as high risk, insufficient knowledge, high complexity, and lack of regulations. It is said that knowledge, as well as merchants’ acceptance, are indicators of cryptocurrencies’ trustworthiness.

Besides the factors mentioned above that prevent people from getting involved in the cryptocurrency market, there are also other, more sociological and demographic factors that influence one’s attitude regarding cryptocurrencies. First, it is pointed out that men are more likely to relate to cryptocurrencies than women just as young people (under 30) are more likely to be aware of them than the elder ones (Steinmetz F. et al., 2021). This finding can be put into comparison to another study (Al Shehhi A. et al., 2014) where most participants are males (95,5 percent vs 4,5 percent). Then the country of origin. When measuring the

ownership, the rate tends to be lower in richer countries. For example, one study of 111,899 global internet users found out ownership is about 3,8 percent in Europe vs 6,5 percent in Latin America. Finally, it seems that education, ideologies, and social status can also have an influence on the behavior of the respondents in regard to cryptocurrencies (Steinmetz F. et al., 2021).

### 2.2.5 Consumer intention

Besides the specific findings on the consumers' profile and perceptions regarding cryptocurrencies, there are some theoretical frameworks that could explain how consumers behave toward cryptocurrencies. One example is the extended version of the theory of reasoned action (TRA) (Gazali H. M. et al., 2018).

TRA was first developed by Fishben and Ajzen to predict people's intentions based on two determinants : attitudes and subjective norms. In Gazali's study (2018), he investigates consumer intention to invest in cryptocurrencies by adding financial risk tolerance and perceived benefits into the theory of reasoned action so that consumer intention is linked to 4 variables instead of 2 in TRA, as explained below.

Attitude refers to people's feelings of positive or negative evaluation toward performing a specific behavior. It is proven to be significant and has a direct impact on how a person intends to react. In his study, Gazali (2018) highlights that the benefits provided by cryptocurrencies (high return on investment, no intermediaries...) lead to positive attitudes among consumers which in turn will lead to the intention in investing and involving in the cryptocurrency market.

Subjective norm on the other hand relates to "an individual's perception of the most important people think that he or she should perform that kind of behavior". It is influenced by the desire of adhering to society. In fact, people feel safe by following social norms. As a matter of fact, people might react immediately in

order to be accepted. Thus, subjective norms are one of the factors that lead to the intention to invest in cryptocurrencies.

When comes financial risk tolerance, it refers to people's compliance to perform financial behavior associated with uncertain outcomes. But in cryptocurrencies, the risk is far beyond the financial one such as regulations and policies, price volatility, and technological complexity among others. Gazali (2018) points out that in terms of online trading, future adopters are financial risk-lovers, meaning that the higher is the risk-tolerance score, the greater preference is for risk assets while rejecting the ownership of any risk-free assets. As a result, the more risk tolerance people are, the more they intend to invest in cryptocurrencies. Demographic factors can also impact the level of financial risk tolerance and risk-taking behavior just as Steinmetz (2021) has shown in his study.

Finally, the perceived benefits, divided into direct advantages ("the immediate and tangible benefits" : lower fees, faster speed) and indirect advantages ("the benefits that are less tangible and difficult to measure" : transacting 24/7, anywhere in the world). There is evidence showing that monetary benefits are just as significant as nonmonetary benefits in consumers' minds. As a result, the higher benefits a cryptocurrency provides, the greater intention consumers have to get involved in the cryptocurrency market.

#### 2.2.6 Cryptocurrency's future

Cryptocurrencies are more and more taking over the financial market, with the increase in types of cryptocurrencies, transactions, market share... No doubt anyone wonders what the future of a cryptocurrency is. Even though cryptocurrencies do not replace traditional fiat currency yet, they could change the way markets interact with each other by eliminating barriers related to national currencies and exchange rates and creating revolutionary trading without fees. As today's internet-based world market is very entangled, one market's shift can easily drag the others with it.

We can mention here the involvement of cryptocurrencies in the corporate world. “Elon Musk and his company Tesla are the best examples” by investing \$1.5 million in Bitcoin (BPM Team, 2021) and accepting people to purchase cars with Bitcoin (BBC, 2021), even though it was only for a short period of time, considering environmental issues (Kolodny, 2021). However, even though cryptocurrencies reach a larger audience, it is difficult to predict whether cryptocurrencies will ever find a true mainstream presence (DeVries, 2016). Nevertheless, Bitcoin, although existing for more than a decade, has never stopped innovating, with its recent launch of Bitcoin ETF (the first US Bitcoin futures exchange-traded fund) on the 19th of October (Dore, 2021). This would allow people to make agreements “to buy or sell the asset later for an agreed-upon price rather than Bitcoin itself” and expand its use to a wider audience.

### 2.2.7 Legalization

It is quite obvious to mention legality when it comes to talking about cryptocurrencies. Although a blockchain technology is allowed to be widely used, cryptocurrencies on the other hand point out some issues concerning regulations and policies. While some countries have legalized cryptocurrencies as a tender, such as El Salvador (Hernandez, 2021), other countries such as China have declared all cryptocurrency transactions illegal (BBC, 2021). While the US is more concerned about jurisdiction by classifying cryptocurrencies as a functional equivalent to traditional currency allowing them to apply today’s regulatory framework in cryptocurrencies, China asserts direct control. They do not want their existing regulatory efficiency to be undermined. Besides, given China’s capital control policy, they would have “burdened” themselves with “a technologically impossible mission of tracking and imposing limitations upon each encrypted, anonymous cryptocurrency transaction from every Chinese user”. China is cynical about market risks and does not want to loosen control, whereas the US is more indulgent regarding technological risk, believing that these technologies

would allow innovations that could be helpful and beneficial to society (Xie, 2019). However, with respect to currency, their position is worth watching carefully.

One of the main objectives of using cryptocurrencies is to avoid using US dollars, which have a limited scope of use. The US taking a favorable position regarding cryptocurrencies can lead to economic sanctions since the use of cryptocurrency is now considered an instrument of monitoring and targeted sanctions against individuals worldwide. Each US dollar transaction is processed in Washington, DC, giving the US Treasury such power as an instrument of US foreign policy. As a result, it also gives countries like China and Russia a strong incentive to develop an alternative global reserve currency, while still boosting the development and use of cryptocurrencies. In fact, China, while refusing to legalize cryptocurrencies notably because of its liberalizing properties and its potential use for criminal purposes, has the ambitions to digitalize its own official currency, the Yuan digital in order to reduce dependency on the US dollar. The context makes their attitude towards cryptocurrencies changing and confusing. So, it is wise to be aware of the potential risk of significant change to US policy regarding cryptocurrencies.

#### 2.2.8 Some criticisms

Cryptocurrencies, while becoming more and more popular, still carry out a number of uncertainties. Besides its questionable definition, there are other concerns that are worth mentioning.

First of all, the usability of cryptocurrencies. Commodities are usually traded by investors with a “buy low, sell high” mentality (DeVries, 2016). While some people consider cryptocurrencies as an investment, others actually use them in their day-to-day life. The use of cryptocurrencies is then questioned since every single trade can impact greatly those who use cryptocurrencies for currency. As DeVries mentioned, someone who wants to buy a large amount of Bitcoin would not be unable to do so without affecting its price. Cryptocurrencies are not mature enough to be considered as a currency in the current market, future growth in

capacity and adoption would be needed. Therefore, this puts in doubt the acceptance of cryptocurrencies as a replacement for traditional fiat money. Besides, understanding the diversities of investment decisions is also problematic. Fauzi et al. (2020) claimed that “a cryptocurrency is said to be a weak form of commodities because investors are not able to predict the future prospect because there is no available information from the past”. This uncertain environment is likely to make user acceptance even more difficult.

Besides, another essential point is maintaining the standards. According to Fauzi et al. (2020), for the interest of the public, governments should make proper policies and regulations that can safeguard the public interest as well as the main players in the economic market. “All this depends on how the government acts on the current cryptocurrency market, either favoring or diminishing its existence once and for all”. Any action taken by the authorities could lead to huge consequences worldwide, considering the scope of the cryptocurrencies market. A recent example is China’s ban on crypto machines. While bans on a blockchain technology are unlikely, bans on crypto machines, tools essential for the good functioning of the cryptocurrency ecosystem, are possible. In May 2021, China has decided to ban cryptocurrency mining (the process of reviewing, verifying, recording, and executing transactions on the blockchain system (Hossain, 2021)). This decision has made “14 of the biggest crypto mining companies in the world” move more than 2 million machines out of China (Muir, 2021).

Another puzzle is more or less similar to the previous notion, regarding how states react to facing cryptocurrencies. In fact, it comes as no surprise that “international views of a cryptocurrency vary by country” (DeVries, 2016). While the European Court of Justice recognized Bitcoin as a legitimate means of payment and exempted it from value-added tax, other countries still miss legislation regarding cryptocurrencies. Any legislation could negatively affect how cryptocurrencies are processed, and even worse, how the global market works. As a matter of fact, cryptocurrencies have changed the way businesses operate with each other as

payments and many other financial-related processes have been made possible if not more convenient by cryptocurrencies. Regulations, legalizations, and bans on crypto-related products and procedures could restrain global trades and thus, provoke economic consequences.

Finally, the controversial reputation of a cryptocurrency in regard to criminality. Fauzi et al. (2020) claimed that a cryptocurrency is more likely to be used by criminals in engaging in frauds such as money laundering and drug trafficking, which is complementary to DeVries's opinion. DeVries (2016) quoted the example of Silk Road, an online marketplace for the darknet where drug dealers and customers make illegal deals with Bitcoin, due to the lack of tracking and semi-anonymity. This is one of the recent events that influence the image of Bitcoin and digital currency in general. It is said that positive marketing toward normal users is needed, otherwise, the general user will think that cryptocurrencies are only used by criminals. Again, this could prevent consumers from considering adopting cryptocurrencies.

Last but not least, the environmental issue. It surely does not come to mind at first glance when talking about a blockchain or a cryptocurrency. But actually, its impact is huger than one could imagine. In fact, Fauzi et al. (2020) stated that the consumption of electricity from mining cryptocurrencies ranges from 10MW – equivalent to a small power plant to 3-6 gigawatt – equivalent to the consumption of small to medium size countries such as Bangladesh and Denmark. The question of the impact of a cryptocurrency on the environment will only make people think of the system as the villain contributing to the emission of carbon dioxide that destroys the earth through global warming.

We have experienced an enormous rise in the area of cryptocurrencies, whether it consists of the number of cryptocurrencies circulating, the market capital, the number of users, or the number of transactions. However, this system is still full of uncertainties, which holds it back. The purpose of this study was inspired by



this gap, between the early adopters who are already involved in cryptocurrencies during the last decade and those who still hesitate if not avoid the uses of these innovative currencies. Before getting into too much detail, the following sections will give you some further insights regarding the different uses of cryptocurrencies in the decentralized financial system.

## 2.3 Decentralized finance

The arrival of cryptocurrencies and blockchains has created a new era in the financial world. Different major business models in decentralized finance have appeared, including using decentralized currencies, decentralized payment services, decentralized fundraising, and decentralized contracting, which is day by day affecting consumers' attitudes in regard to the uses of cryptocurrencies.

### 2.3.1 Decentralized payment service

Payments are part of our daily life allowing us to buy, sell, and transact. The centralized payment networks as most of us use today such as Visa or PayPal, admittedly, facilitate online and offline commerce. However, one of the major problems comes from the services fees they charge, which are relatively high, even more, when it comes to global transactions. Besides, a third party is needed to process and clear transactions, which makes the operations slower and longer. What is more, the success depends hugely on the honesty of the third party, leading to potential fraud issues. Decentralized payment networks, on the other hand, provide the solution to the problems associated with traditional payment services by offering "low-cost, instant, and global payments" (Chen Y. and Bellavitis C., 2020). Transactions take place directly between parties allowing global transactions to be processed at the same speed as local transactions (Kaushal, 2016). Additionally, small size casual transactions can now be done thanks to the reduction of the transaction cost. Although these payment systems

are not linked to any central institution or authority, they still ensure confidentiality, integrity, and security.

Some examples of decentralized payment services are Diem and Bitcoin Lightning Network. Not only can businesses lower their costs associated with the transactions fees and improve their profitability, but also relies on a secure and irreversible service since it relies on a blockchain technology. With this financially advantageous feature, new business models that are not viable today may become possible (e.g., micropayments), leading us to a new era full of innovations and opportunities. For example, in terms of businesses that either have a cryptocurrency ATM (a terminal that allows people to buy cryptocurrencies using a bank card or cash (Thorne, 2020)) or offer cryptocurrencies as an in-store payment method, there are about 6 000 in the United States only (Best, 2021).

While many advantageous are related to using decentralized payment systems, there are still some considerations that need to be addressed especially when using cryptocurrencies as payments such as buyer protection or the virtual nature of cryptocurrencies. In fact, in the case where a consumer uses any cryptocurrency to buy a good and the seller does not provide the good in question, there is no way to do anything since the transactions are not reversible. In the same way, cryptocurrencies do not have any physical form. Even though they can be converted to traditional money, they cannot be used in every physical store. As a journalist said, “we might be able to buy virtual clothes in the metaverse, but we still need real ones — and to eat real food and sleep in real beds. We need real money to pay for all that.” (Kelly, 2021).

### 2.3.2 Decentralized contracting

When it comes to talking about finance, contracts are nevertheless as common as payments. A contract is something that could be a puzzle, though essential as they secure collaborations and transactions. Not only does it “clarify the responsibilities and obligations of both parties to the transaction”, but also

“protects the vital interests of both parties” (Yang Q. et al., 2019). However, contracts are most of the time complicated and costly including the cost associated with negotiations, draft, enforcement, renegotiations, etc. When it comes to talking about finance, due to adverse selection and moral hazards, transaction costs are high while transaction possibilities are rather low. That is why financial actors often rely on an intermediary in order to establish trust and reduce costs.

The blockchain technology is a solution to this situation. It facilitates contracting by substituting intermediaries with smart contracts, leading to peer-to-peer contracting. Not only does it reduce the complexity, delay, and cost of contracting, but also provides “transparency, immutability, automaticity, and programmability” (Chen Y. and Bellavitis C., 2020). In fact, the execution of these contracts is programmed in form of code that requires “triggering conditions” (external messages or transactions). The contract executes a specific code and modifies the information based on those conditions (Yang Q. et al., 2019). The process is automated. Smart contracts make the process of contracting easier and smoother while expanding the possible scope and facilitating innovations and transactions.

There are some decentralized platforms (MakerDAO, Compound, and Dharma) that use smart contracts to create decentralized protocols such as lending and borrowing. In this study, there will be a focus on three areas, including loans. The traditional lending system is restrained by loan interest rate, limits of the borrowed amount, and the third-party platform, which is by the way, not always reliable (Yang Q. et al., 2019). Not only do smart contracts simplify and improve the lending system, but also allow direct control of the transaction assets as well as their transfer. In fact, borrowers and lenders just have to agree on the basic details such as the amount and the interest rate and smart contracts take care of the rest by “governing the terms of the loan and the pledged collateral” (Schueffel, 2021).

Just as the traditional system, the decentralized lending system allows, on the one hand, the lenders, those who deposit assets on the platform, to gain interest while lending their cryptocurrencies (a process called yield farming) and on the other hand, the borrowers to raise funds. However, the interest rate might be more interesting in the decentralized one. Besides, “banking regulations are rigid and well regulated”, it is not always easy to borrow money, especially for small businesses that have “little or poor credit history”. In addition, nowadays, requesting a loan takes time, peer-to-peer lending “reduces delays, makes quick approvals, eliminates the need for middlemen and brings transparency” (Manda V. K. and Yamijala S. P., 2019).

It is noticeable that some decentralized lending platforms have already cumulated a huge pool of assets. For example, AAVE, an open-source decentralized finance protocol, hosts a total of \$21 billion as of 01/30/2022 (AAVE, 2022) just as Compound has a total of \$10 billion (Compound, 2022).

### 2.3.3 Decentralized fundraising

While decentralized fundraising is not the core of the study, it is worth mentioning it in order to give some more context to the decentralized financial system. In the traditional fundraising process, there is often friction regarding venture financing, as investors rely on trust and strong network ties. A blockchain reshapes the process by offering a new form of crowdfunding: initial coin offering (ICO). This new process involves a project creating a “project-specific token on a public blockchain” and selling “the token to potential investors to raise funds for early-stage developments”. This innovative mechanism has enabled entrepreneurs and innovators to collect huge amounts of dollars from investors around the globe. Not only does an ICO have the power to raise funds for a project but also creates network effects thanks to the blockchain technology. By relying on distributed trust, transparency, smart contracts, and open-source code, ICO reduces the friction in fundraising and allows easy access to capital which in turn

promotes entrepreneurship and innovation. In addition, there is a new variant of decentralized fundraising, called initial exchange offerings (IEOs). IEOs, on the other hand, rely on cryptocurrency exchanges to ensure the trustworthiness of the projects and to connect projects to investors. In IEOs, potential projects are examined, detailed information is provided, and high-quality projects are endorsed (Chen Y. and Bellavitis C., 2020).

There are numerous other decentralized finance examples : accounts/wallets (software that provides the “necessary functionality to receive, hold, and send digital assets” (Schueffel, 2021)), exchanges, derivatives of financial assets, or wealth & asset management among others. However, there will be a focus on reviewing the basic concepts that surround cryptocurrencies.

## 2.4 Link to the research question

As mentioned above, there are different areas where cryptocurrencies are very useful besides having so much potential (payments, contracts, fundraising, etc). While their environment is confusing and unclear because of their innovative nature, their future is worth studying, especially with the emergence of decentralized finance. What future is reserved for them? Will they ever find the true mainstream? As mentioned before, our study is meant to evaluate consumers’ perceptions regarding the use of cryptocurrencies. Nevertheless, it will be mainly focused on three specific areas of use of cryptocurrencies : payments, loans, and investments/savings. The following chapter will provide further details regarding our research methods.

### **3 Methodology**

#### **3.1 Choice of research method**

As mentioned earlier, in this paper, consumers' perception of the use of cryptocurrencies in three specific areas is investigated: payments, loans, investments/savings, and more specifically, the degree of interest people have regarding the use of cryptocurrency in these areas.

For this, first of all, existing literature was analyzed in order to understand the current situation and knowledge, and what has been discovered so far. The literature review has allowed us to identify and refine our research area. As a complement to this review, conducting an online survey is appropriate.

As a matter of fact, when looking for identifying consumers' trends, behaviors, perceptions, or attitudes, having a significant number of respondents is essential so that the results would be more objective. Besides, generalization is also an important goal to achieve. Even though qualitative research methods allow a deeper understanding, they are generally too subjective. Furthermore, it is harder to attain a great number of respondents. Quantitative methods on the other hand lead to a wider scope while being less biased (Oflazoglu, 2017).

In addition, by using different types of questions in the survey, respondents' interest/perception can be measured quantitatively (rating scale questions) as well as qualitatively (open-ended questions), which gives us even more insights. On the one hand, quantitative questions lead to statistical findings that help us conclude for example whether respondents are more favorable or unfavorable regarding the use of cryptocurrencies in payments, loans, and investments/savings respectively. On the other hand, qualitative questions lead to frequent keywords identification that helps us observe what the main motivations and barriers are regarding the use of cryptocurrencies.

For all these reasons among others, an online survey is decided to be the best way to collect data needed to answer our research question, despite its inconveniences.

### 3.2 Research design and process

As mentioned above, besides the literature review, an online survey was conducted in order to collect primary data. This survey was created using Google Drive (see Appendix 1). It was shared on different social media platforms including LinkedIn, Instagram, and Facebook, and it was available online for approximately one month, from the 3rd of February 2022 to the 1st of March 2022. There were no restrictions on participants' profiles.

The online survey consisted of 15 questions, including 8 closed-ended questions, 2 open-ended questions, 2 multiple-choice questions, and 3 rating scale questions followed by basic demographic questions. With the objective of collecting as much data as possible, the survey did not include any personal questions that could make the participants uncomfortable.

The survey was structured in this way :

- 1) Current situation-related questions (e.g., Do you or have you had any traditional loans? Are you interested in an alternative to the current financial products?)
- 2) Cryptocurrencies-related questions (e.g., How much do you know about cryptocurrencies? Do you own cryptocurrencies?)
- 3) Interest-related questions (e.g., Please rate your level of interest regarding the use of cryptocurrencies for investments or savings., What reasons motivate you to use cryptocurrencies?)

4) Demographic questions (e.g., Age, Gender, Geographic area, Occupation)

The answers to these questions first help us understand the current habits of the participants regarding traditional financial products and their current involvement in the cryptocurrency market as well as their knowledge. Besides, the answers also allow us to identify the participants' level of interest regarding the use of cryptocurrencies in payments, loans, and investments/savings respectively, and the reasons that motivate and/or stop them from using cryptocurrencies. Finally, the answers also let us find a link between demographic factors to the level of interest/involvement of the participants.

After acquiring enough data, different analyses using Excel were conducted with the aim of obtaining interesting results. While the survey helps in identifying consumers' perception of the use of cryptocurrencies in three areas, the results may provide a better understanding of consumers' needs in terms of financial products (traditional or cryptocurrency-related).



## 4 Results

There were 125 participants who responded to the online survey. In this section, the results collected from the closed-ended questions, multiple-choice questions as well as rating scale questions are listed. The results observed in the open-ended questions are then discussed on the basis of the most frequently quoted keywords. After collecting the answers to the survey, some basic characteristics among the participants can be observed.

### 4.1 Profile

The profiles of the participants are summarized as followed. 59% of the participants are males, while 40% are females, with 1% responded the category “other”. 88% of the participants live in Europe, and 12% live in Asia. As shown in figure 2, 71% of the participants are aged between 18 and 24, 16% between 25 and 34, 6% over 54, 3% between 35 and 44, another 3% between 45 and 54, and only 1% under 18. 55% of the participants are students, 31% are employees, 6% are self-employed, 3% are unemployed, 2% are retired, and the remaining 4% exercise other professions.

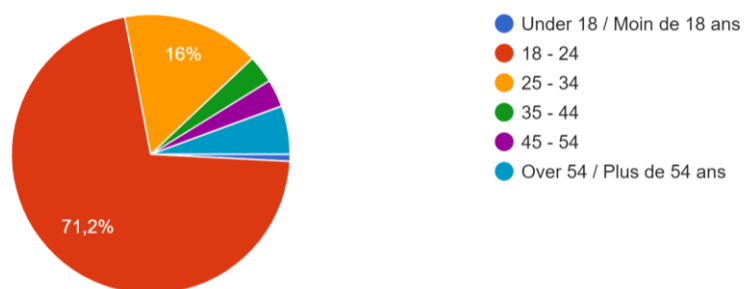


Figure 2. Distribution of participants' age represented in a pie chart

## 4.2 Current situation

Regarding the current situation, with traditional financial services and currencies, 71% of the participants have already done any kind of traditional investment or saving including bonds, stocks, and savings accounts among others, the other 29% have not. 46% of the participants have had traditional loans, while the other 54% have not. 64% of the participants have paid with traditional currencies online, the remaining 36% have not. Mostly, figure 3 demonstrates that 58% of the participants are interested in an alternative to the current financial products, and 42% are not interested.

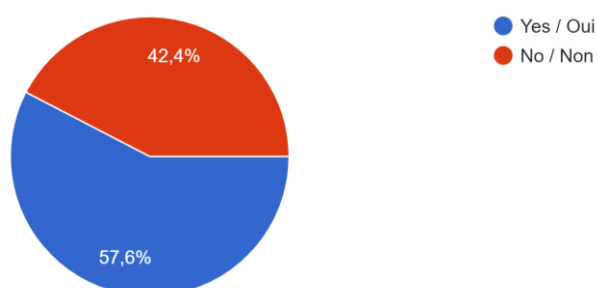


Figure 3. Distribution of participants' interest in alternative financial products represented in a pie chart

## 4.3 Cryptocurrencies-related situations

When it comes to cryptocurrencies-related situations, 42% of the participants have heard about cryptocurrencies, 35% have some basic knowledge, 11% have no clue and only 12% know it well (figure 4). 82% of the participants know that they can invest or save in cryptocurrencies, 18% do not. 38% of the participants know that they can borrow in cryptocurrencies, 62% do not. 79% of the participants know that they can pay with cryptocurrencies, 21% do not. Finally, only 23% of the participants own cryptocurrencies, and 77% do not. These owners use cryptocurrencies essentially for investments or savings purposes

(26%), some for payments (8%), very few use them for loans (1%), “for technology” (1%), “for leisure” (1%), and “to destroy banks” (1%).

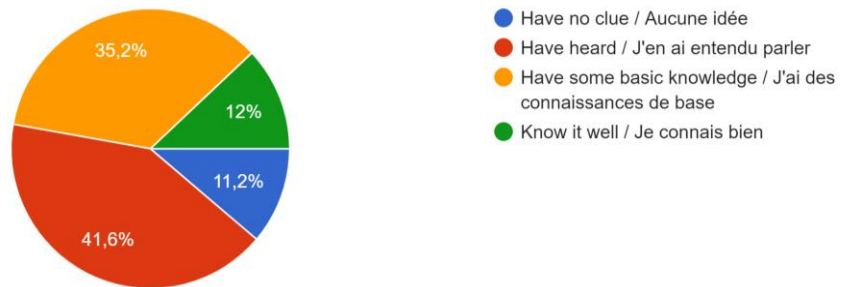


Figure 4. Distribution of participants' degree of knowledge regarding cryptocurrencies represented in a pie chart

#### 4.4 Interest

In terms of the level of interest participants have regarding cryptocurrencies-related products, figures 5 to 7 summarize the results from the rating scale questions. Rates scale from 1 to 5, 1 being not interested, 3 being the medium score, and 5 being very interested.

3 is the mean score obtained for the level of interest related to the use of cryptocurrencies in investments or savings, 2 for loans, and 3 for payments. In addition to that, 47% of the respondents are not interested in using cryptocurrencies for investments or savings (score 1 and 2) while 38% are interested (score 4 and 5). Respectively, 60% and 38% of respondents are not interested in using cryptocurrencies for loans and payments, versus 14% and 39%.

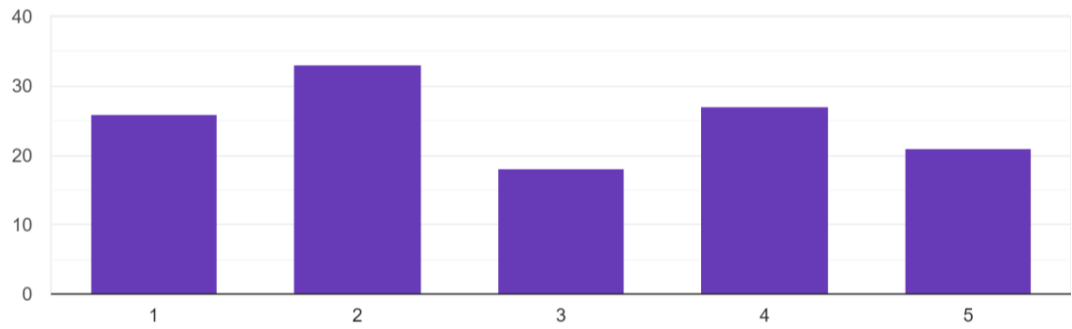


Figure 5. Distribution of participants' level of interest regarding the use of cryptocurrencies for investments or savings

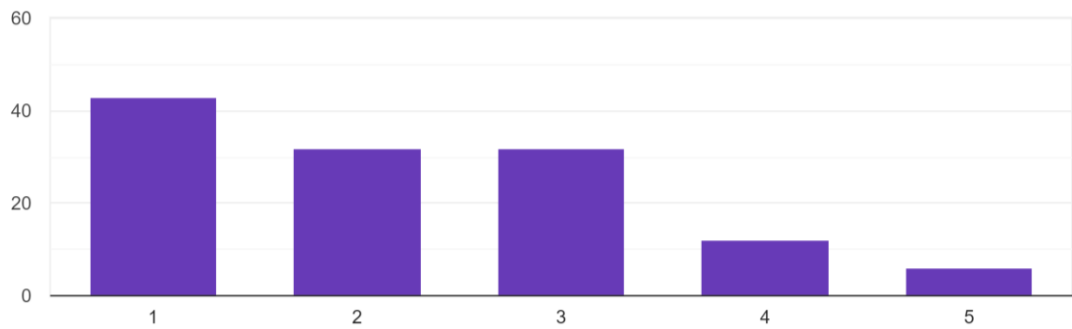


Figure 6. Distribution of participants' level of interest regarding the use of cryptocurrencies for loans

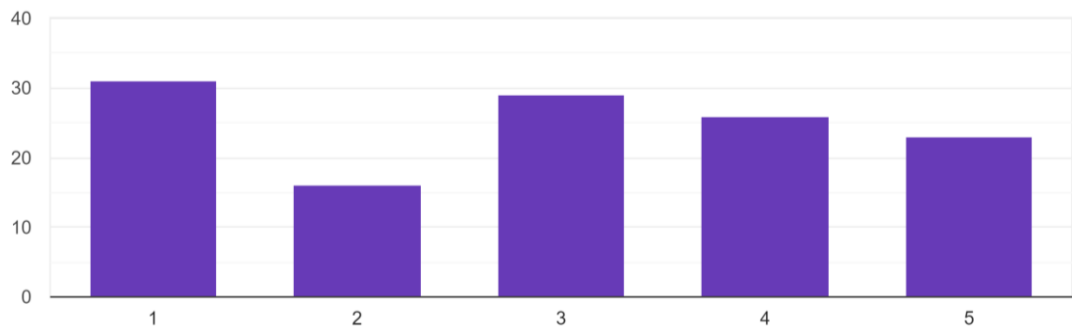


Figure 7. Distribution of participants' level of interest regarding the use of cryptocurrencies for payments

## 4.5 Open-ended questions

Regarding the answers observed in the open-ended questions, the most frequently quoted keywords were selected in the participants' responses to each question.

The first question is : What reasons motivate you to use cryptocurrencies? Most of the participants mentioned the system of cryptocurrencies itself as a motivating factor (being decentralized, as an alternative to traditional banking, a revolution of the financial system...), the financial gain from investments (profitability, short-time return...), the possibility to pay, the convenience, safety and security, privacy and anonymousness among others.

The second question is : What reasons stop you from using cryptocurrencies? Most of the participants mentioned a lack of knowledge about the topic (and complexity, lack of information...), insecurity (risk associated, uncertainty, hacks, reliability...), lack of interest and lack of time to get informed about the topic, volatility (unstable market and values fluctuation...), limited use, expensive among others.

Finally, the survey finished by welcoming any comments regarding the topic. Some critical responses are :

- *“I find that the communication around this topic is very dangerous because people are made to believe that everything is much easier to do with this type of currency, that everyone can manage it. However, it seems to me that it is essential to get precise information on how it works and to be helped by competent people in the field and not to follow the ads/influencers that promote it.”,*
- *“We should talk more about it at school or in everyday life, in general, to inform the public since it is something recent”,*

- *“Cryptocurrencies are a good alternative to banks, although too unpredictable but do not necessarily enrich banks and big bosses. On the other hand, they are subject to abuse since they are a means of payment for illegal products among others (firearms, drugs)”*,
- *“From my point of view, cryptocurrencies are mostly speculative. But I have great hopes that they can open up more opportunities in the future, especially in the creation and innovation of the metaverse.”*.

## 5 Discussions

The results above indicate that most participants are males, live in Europe, are aged between 18 and 34, and are students. In addition, most participants have made traditional investments or savings and payments online with traditional currencies but have not had traditional loans. Most participants are also interested in alternative financial products. The majority has only heard about cryptocurrencies but knows about investments/savings and payments with cryptocurrencies. Meanwhile, most of them do not know about loans in cryptocurrencies and do not own any of those either. The mean level of interest related to the use of cryptocurrencies in investments of savings, loans, and payments respectively is 3, 2, and 3. There are more respondents interested in using cryptocurrencies for payments but there are also more of them not interested in using cryptocurrencies for investments/savings and loans.

The results are consistent with earlier observations that men are more likely to relate to cryptocurrencies than women just as young people (under 30) are more likely to be aware of them than the elder ones (Steinmetz F. et al., 2021).

One of the main objectives of the study is to investigate the perception of consumers on the use of cryptocurrencies and to verify the hypothesis that knowledge and demographics can affect consumers' perceptions. As observed based on the mean score of level of interest, participants are more interested in using cryptocurrencies for investments/savings and payments than loans. In fact, at least 50% of the participants have responded with a score of 3 for investments/savings and payments and 2 for loans. Based on this observation, participants have a better perception of using cryptocurrencies for investments/savings and payments than loans. This is coherent with the proportion of respondents interested in using cryptocurrencies. 38% and 39% of them have responded with a score of 4 or 5 in regard to investments/savings and payments, against only 14% for loans. Additionally, most of the respondents say

that the financial gain from investments and the possibility to pay are their main motivations for using cryptocurrencies, which validates the observation. Finally, the total mean based on the average score per participant is 2,69. Assuming 3 is the “medium score”, participants are quite neutral if not unfavorable to the use of cryptocurrencies. This can be related to the fact that there are more participants not interested in using cryptocurrencies than the ones who are.

Moreover, an analysis was also made on the influence of the participant’s current situation, knowledge, and profile on their perception. As figure 8 shows that the participants’ current habits affect their perception of the use of cryptocurrencies in a given area. The participants that have made traditional investments/savings are more interested in investing/saving in cryptocurrencies than the ones who have not made any traditional investments/savings. This analogy applies to the payments except for loans that have the same median score. The results are not surprising. As explained in the extended version of the theory of reasoned action, an attitude is one of the main factors that influence consumers’ intentions. Having experience in a specific domain can positively impact consumers’ attitudes towards this domain since they know how to proceed and have insights from the past. The perceived risk is also lower.

Some participants are interested in alternative financial products as well. This seems to also impact how they perceive the use of cryptocurrencies. The perception is different, more positive than those who are not interested in alternatives which do not come as a surprise since cryptocurrencies and their related products/services are considered an alternative to the current financial system.

\*Median level of interest in using cryptocurrencies for the three categories combined



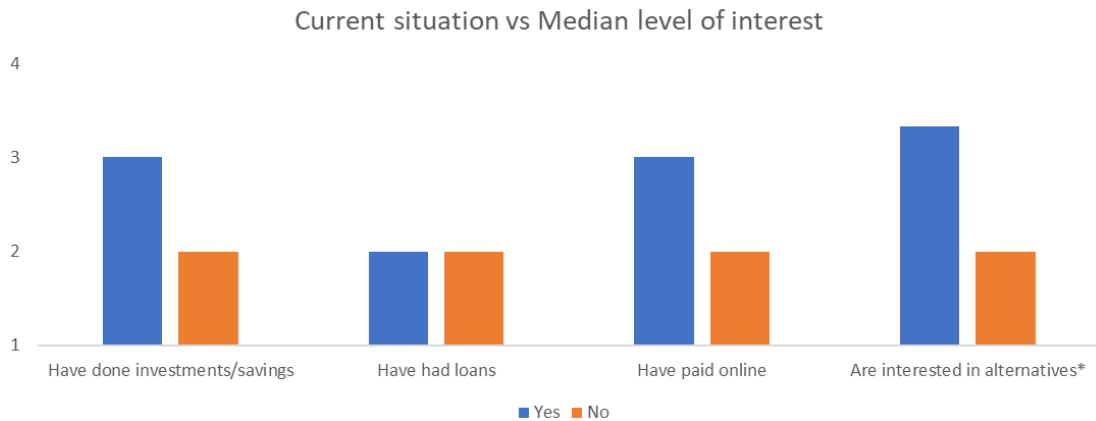


Figure 8. Distribution of participants' current situation in the traditional system vs the median level of interest in using cryptocurrencies

In addition, figure 9 illustrates that the degree of knowledge has also an effect on the perception : the greater the knowledge, the higher the level of interest. The results are logical, lack of knowledge leads to a higher perceived risk which tends to prevent consumers from taking any actions to purchase or invest. What is more, a cryptocurrency is a complex subject that requires expertise. As the degree of knowledge increases, so does the level of interest, assuming the perceived risk decreases and thus enhances the perceived benefits. This is consistent with the comments, most of the respondents say the lack of knowledge is a major factor that stops them from using a cryptocurrency.

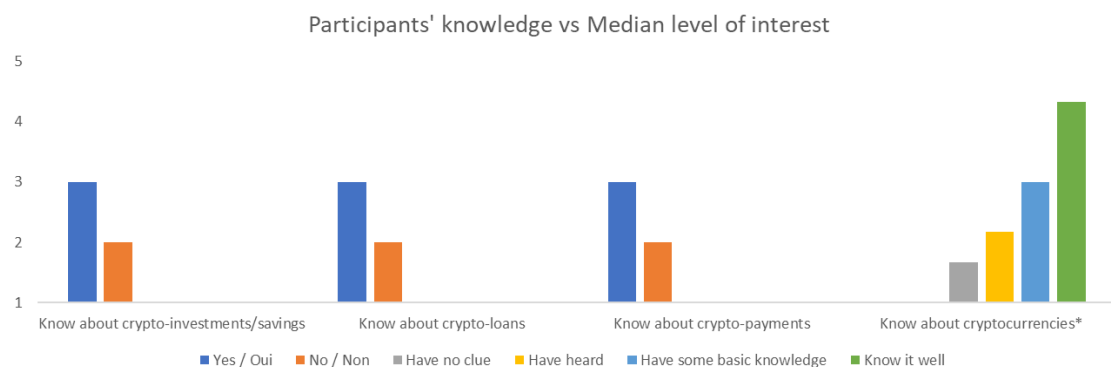


Figure 9. Distribution of participants' knowledge vs the median level of interest in using cryptocurrencies

Finally, as shown in figures 10 to 12, it can be concluded that demographic factors can also influence the level of interest. In fact, males tend to be more interested in using cryptocurrencies than females. Besides, younger people tend to be more attracted by cryptocurrencies than older ones. However, there is an exception for the range 35-44 which is higher than the range 25-34. Similarly, students are more intrigued by cryptocurrencies than retirees. Nevertheless, assumptions regarding employees, self-employed people, and unemployed ones are more difficult to make since the profiles are less explicit than the category of students and retirees. The results are coherent. Young people tend to be more risk-tolerant than older people just as they are more at ease with new technologies. A cryptocurrency is fully virtual. Any action involving cryptocurrencies is digitalized, hence, it requires a certain level of mastery of technological devices.

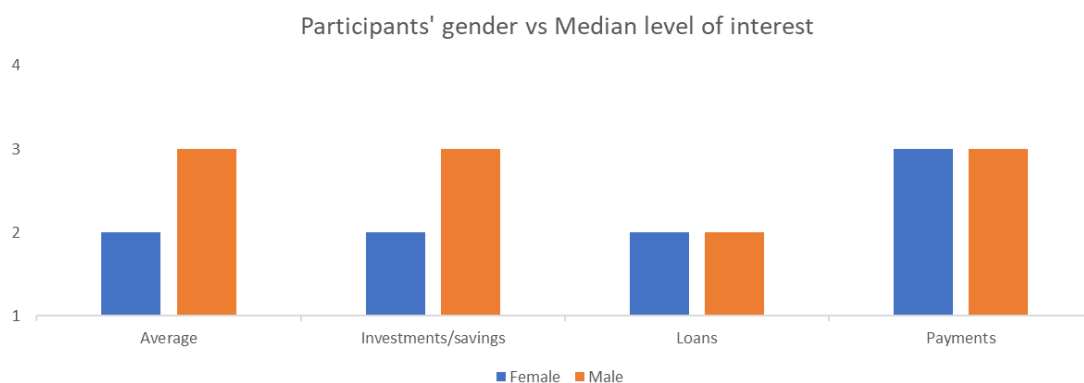


Figure 10. Distribution of participants' gender vs the median level of interest in using cryptocurrencies

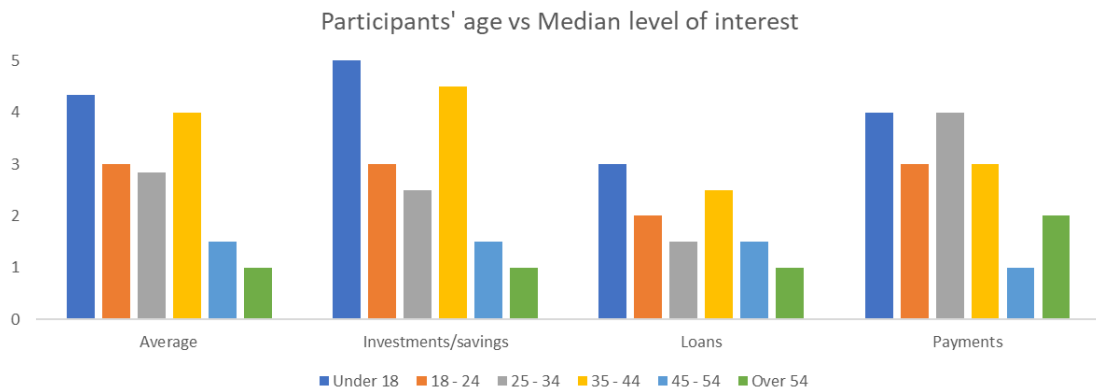


Figure 11. Distribution of participants' age vs the median level of interest in using cryptocurrencies

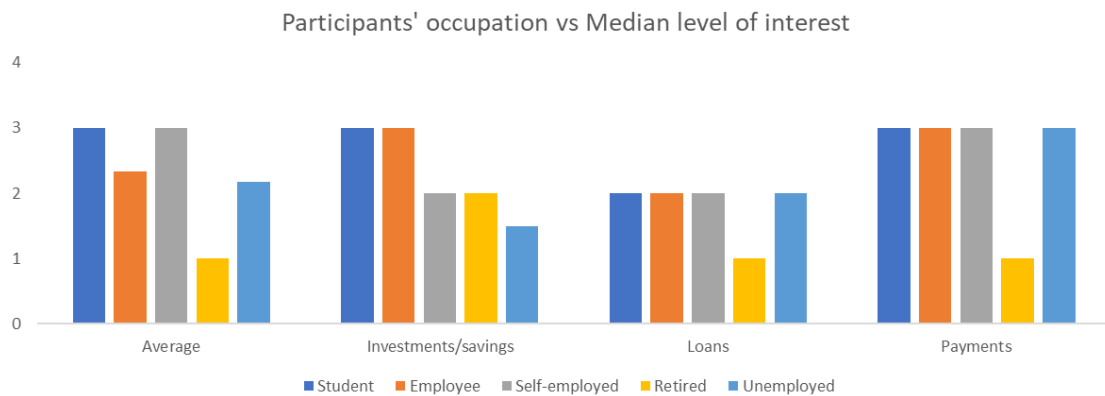


Figure 12. Distribution of participants' occupation vs the median level of interest in using cryptocurrencies

The results above indicate that generally speaking, participants are either neutral or unfavorable in terms of using cryptocurrencies (general median score inferior or equal to 3), but factors such as the degree of knowledge, age, or current habits can influence their perception (higher or lower score).

## 6 Conclusion

Cryptocurrencies, blockchains, and decentralized finances among other rather new terminologies become more and more common in everyday life. While they provide lots of advantages such as improved efficiency, seamlessness, and practicality, they also have drawbacks, such as complexity, criminality, and the need and the use of technological devices. Even though cryptocurrencies are used by an increasing number of people like you and me, they are usually perceived as tools for experts.

This paper aimed to evaluate consumers' perceptions of the use of cryptocurrencies and particularly, for investments/savings, payments, and loans. In addition, the study aimed to verify the hypothesis formulated : knowledge and demographic factors impact the perception of consumers on the use of cryptocurrencies.

After having conducted an online survey, the data were analyzed in order to respond to the research question. It was found out that in general, participants are not quite favorable regarding the use of cryptocurrencies, if not "neutral", despite the fact that most respondents are interested in alternative financial products. However, they seem to have a better perception of investments/savings and payments with cryptocurrencies than loans. Besides, the study also verified that the hypothesis holds. The degree of knowledge does have an impact on participants' perception (the greater the degree of knowledge, the greater the level of interest). Similarly, gender and age have also an influence on their perception (men and young people tend to be more interested).

Nevertheless, this survey is limited in terms of the geographical area (mostly respondents in Europe) and demographic factors (mostly students and people between 18 and 24). Besides, the survey is also restricted to the use of cryptocurrencies in three specific areas. It will be worthy to analyze consumers'

perceptions in a deeper way by investigating factors that push or stop them from using cryptocurrencies and focusing on a target group in order to get a more profound understanding.

Finally, while the main factors that motivate consumers to use cryptocurrencies are well-known, basically all the advantages provided, the ones that stop them are more subtle, the number one obstacle being the lack of knowledge. Even though this paper is also meant to increase readers' knowledge regarding this topic, it is worth mentioning that communication related to this topic is not efficient, if there is any. Further studies could include investigation to find better ways to inform the public with accurate information and proper intention.

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## Appendices

### Survey

[https://docs.google.com/forms/d/e/1FAIpQLSeqIfIskT2DztWx\\_yJR\\_yDC-iJPX3aYWB5j0cablcYliffzw/viewform](https://docs.google.com/forms/d/e/1FAIpQLSeqIfIskT2DztWx_yJR_yDC-iJPX3aYWB5j0cablcYliffzw/viewform)

#### Consumers' perception of the use of cryptocurrencies / Perception des consommateurs sur l'utilisation des crypto-monnaies

My name is Clarisse Achard, a third year student at Rennes School of Business, Bachelor in Management. I am currently doing a bachelor thesis on the topic of "The use of cryptocurrencies", especially, consumers' perception of it. The findings would help me analyze and provide some insights regarding consumers' attitudes towards cryptocurrencies. This survey is done anonymously and will take no more than 5 minutes. Thank you in advance for responding to this survey.

Je m'appelle Clarisse Achard, étudiante en troisième année à Rennes School of Business, Bachelor en Management. Je réalise actuellement un mémoire de bachelor sur le thème de "L'utilisation des crypto-monnaies", et plus particulièrement, la perception des consommateurs. Les résultats me permettraient d'analyser et d'apporter un éclairage sur l'attitude des consommateurs vis-à-vis des crypto-monnaies. Cette enquête se réalise de manière anonyme et prendra environ 5 minutes. Je vous remercie par avance.

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\*Obligatoire

Current situation / Situation actuelle

1. Do you or have you done any traditional investment or saving (bonds, stocks, savings accounts..) ? / Faites-vous ou avez-vous fait des placements ou de l'épargne traditionnels (obligations, actions, comptes d'épargne...) ?

*Une seule réponse possible.*

Yes / Oui

No / Non

2. Do you or have you had any traditional loans ? / Avez-vous ou avez-vous eu des prêts traditionnels ?

*Une seule réponse possible.*

Yes / Oui

No / Non

3. Do you or have you paid with traditional currencies online ? / Payez-vous ou avez-vous payé avec des devises traditionnelles en ligne ?

*Une seule réponse possible.*

- Yes / Oui  
 No / Non

4. Are you interested in an alternative to the current financial products ? / Etes-vous intéressé par une alternative aux produits financiers actuels ?

*Une seule réponse possible.*

- Yes / Oui  
 No / Non

#### Cryptocurrencies / Crypto-monnaies

5. How much do you know about cryptocurrencies ? / Que savez-vous des crypto-monnaies ?

*Une seule réponse possible.*

- Have no clue / Aucune idée  
 Have heard / J'en ai entendu parler  
 Have some basic knowledge / J'ai des connaissances de base  
 Know it well / Je connais bien

6. Do you know that you can invest or save in cryptocurrencies ? / Savez-vous que vous pouvez investir ou épargner en crypto-monnaies ?

*Une seule réponse possible.*

- Yes / Oui  
 No / Non

7. Do you know that you can borrow in cryptocurrencies ? / Savez-vous que vous pouvez emprunter en crypto-monnaies ?

*Une seule réponse possible.*

Yes / Oui

No / Non

8. Do you know that you can pay with cryptocurrencies ? / Savez-vous que vous pouvez payer avec des crypto-monnaies ?

*Une seule réponse possible.*

Yes / Oui

No / Non

9. Do you own cryptocurrencies ? / Possédez-vous des crypto-monnaies ?

*Une seule réponse possible.*

Yes / Oui

No / Non

10. For what purpose(s) do you use cryptocurrencies ? / Dans quel(s) but(s) utilisez-vous les crypto-monnaies ?

*Plusieurs réponses possibles.*

Loans / Prêts

Savings or Investments / Épargne ou investissements

Payments / Paiements

I don't use cryptocurrencies / Je n'utilise pas de crypto-monnaies

Autre :  \_\_\_\_\_

Interest / Intérêt

11. Please rate your level of interest regarding the use of cryptocurrencies for investments or savings. / Évaluez votre niveau d'intérêt concernant l'utilisation des crypto-monnaies en tant qu'investissement ou épargne.

*Une seule réponse possible.*

	1	2	3	4	5	
Not interested / Pas intéressé	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very interested / Très intéressé

12. Please rate your level of interest regarding the use of cryptocurrencies for loans. / Veuillez évaluer votre niveau d'intérêt concernant l'utilisation des crypto-monnaies en tant que prêt.

*Une seule réponse possible.*

	1	2	3	4	5	
Not interested / Pas intéressé	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very interested / Très intéressé

13. Please rate your level of interest regarding the use of cryptocurrencies for payments. / Veuillez évaluer votre niveau d'intérêt concernant l'utilisation des crypto-monnaies en tant que moyen de paiement.

*Une seule réponse possible.*

	1	2	3	4	5	
Not interested / Pas intéressé	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very interested / Très intéressé

14. What reasons motivate you to use cryptocurrencies ? / Quelles sont les raisons qui vous motivent à utiliser les crypto-monnaies ? \*

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15. What reasons stop you from using cryptocurrencies ? / Quelles sont les raisons qui vous empêchent d'utiliser les crypto-monnaies ? \*

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Demographic questions / Questions démographiques

16. Gender / Genre

*Une seule réponse possible.*

- Male / Homme  
 Female / Femme  
 Other / Autre

17. Where do you live ? / Où habitez-vous ?

*Une seule réponse possible.*

- Africa / Afrique  
 America / Amérique  
 Asia / Asie  
 Europe  
 Oceania / Océanie

## 18. Age / Âge

*Une seule réponse possible.*

- Under 18 / Moin de 18 ans
- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- Over 54 / Plus de 54 ans

## 19. Occupation

*Une seule réponse possible.*

- Student / Etudiant
- Employee / Employé
- Self-employed / auto-entrepreneur
- Retired / Retraité
- Unemployed / Sans emploi
- Autre : \_\_\_\_\_

## 20. Any comments regarding your views on cryptocurrencies ? / Un commentaire concernant votre point de vue sur les crypto-monnaies ?

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Thanks for your participation ! / Merci pour votre participation !