



INSTITUTO
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**Discussing the advantages and disadvantages of Cryptocurrency as
an instrument of payment and a tool for transactions**

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Master in International Management

Supervisor:

PhD Professor Jose Campino

ISCTE Business School

October 2022



BUSINESS
SCHOOL

Department of Marketing, Strategy and Operations

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Acknowledgement

I would like to sincerely send my appreciation to my professor, Jose Campino for patient guidance and prompt support all the time. It was quite challenging as I was pursuing a second masters' degree and right after I was working full time. However, Professor Campino was always there to support me. He always provided timely feedback and constant motivation, so I would be free of anxiety and could do my best.

I would also like to thank my parents who always loved me and supported me throughout my life.

To my friends and classmates, thank you for sharing your experience with me, which allows me to work on the right path and save some time.

Resumo

Diferentes métodos de pagamento estão evoluindo para melhor conveniência, as criptomoedas não são diferentes em princípio. Esta dissertação tem como objetivo descobrir se a população em geral está disposta a adotar criptomoedas como forma de pagamento por meio de uma pesquisa descritiva direcionada tanto a usuários atuais de criptomoedas quanto a não usuários de criptomoedas. Os resultados revelam que a maioria dos usuários de criptomoedas usam criptomoedas apenas para fins de investimento e tendem a escolher a moeda de acordo com sua popularidade em vez de outros aspectos intrínsecos. O pagamento por e-commerce é a atividade mais atrativa seguida pelas transações internacionais ao usar criptomoeda como forma de pagamento. Alta volatilidade e falta de facilidade de uso têm sido as dificuldades mais comuns no uso. Enquanto muitas pessoas não perceberam dificuldades ao mesmo tempo.

Por ser um método de pagamento controverso, é difícil definir teoricamente seu potencial desenvolvimento futuro. Assim, o autor optou por analisá-lo na perspectiva dos usuários, que deram feedback com base em sua experiência real. A atitude geral em relação à criptomoeda é bastante positiva em termos da astúcia dos usuários que não são de criptomoeda para saber mais sobre criptomoeda e adotá-la e a astúcia dos atuais usuários de criptomoeda para continuar usando e recomendá-la a outros.

Palavras-chave: Forma de pagamento, Criptomoeda, Adoção, E-commerce, Transação internacional.
classificação JEL: E42, E52, G00

Abstract

Different payment methods have been evolving for better convenience, cryptocurrencies are no different in principle. This dissertation aims to find out if the general population is willing to adopt cryptocurrencies as a payment method through a descriptive survey targeting both current cryptocurrency users and non-cryptocurrency users. The results reveal that most cryptocurrency users use cryptocurrency for just investment purposes and tend to choose the coin according to its popularity instead of other intrinsic aspects. E-commerce payment is the most attractive activity followed by international transactions when using cryptocurrency as a payment method. High volatility and lack of ease of use have been the most common difficulties in usage. While many people have perceived no difficulties at the same time.

As being a controversial payment method, it's hard to define its potential future development theoretically. Thus, the author chose to analyse it from the users' perspective, who gave feedback based on their real experience. The general attitude towards cryptocurrency is quite positive in terms of the wiliness of non-cryptocurrency users to know more about cryptocurrency and adopt it and the wiliness of the current cryptocurrency users to continue using and recommend it to others.

Keywords: Payment method, Cryptocurrency, Adoption, E-commerce, International transaction.

JEL Classifications : E42, E52, G00

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1 Introduction

In ancient society, people exchanged goods and commodities, also called the barter system, to make a transaction with others. However, the limited trading circle and limited types of commodities were not able to fulfil people's demands and needs as there is no common unit of account. Therefore, about 5000 years ago, to scale up and offer more flexibility, an intermediary, that is, the "neutral commodity" which is also regarded as money was invented (Arvidsson, 2019). With the invention of money, it was possible to sell goods to obtain money and use the money to trade for other types of goods. Therefore, it enabled the exchange between multiple items. Initially, rare items such as shells, special stones, etc. were used as a means of payment (Bhatt, 2014).

With the further expansion and deepening of social activities, the forms of money are also constantly changing and improving to make more people believe in their credit value and trust its usage feasibility.

With the development of money, gold and other precious metals have become the most trusted and known currency as the intermediary (Arvidsson, 2019). To offset the complexity of identifying, weighing, measuring, and dividing objects before they can be traded during the circulation, the states began to make measurable coins to increase efficiency and accuracy.

However, the major problem with metals as a currency was weight, especially for large amounts and long-distance transactions. The concerns of heavy labour work in transporting the metals and insecure environments (weather, robbery, landscape, etc.) made it hard to conduct cross-regional trading. As a result, a "prototype bank" emerged where people could deposit their metal currencies and get proof of a deposit in paper in return, which can be regarded as the prototype of notes (Davies, 2002). Therefore, the payment of the transactions could be done by giving a paper receipt instead of physical metal currencies. The sellers also could collect the currencies from the prototype banks with the deposit receipt whenever they wanted. With the expansion of the transaction scope and transaction frequency, paper receipts gradually replaced physical metal currency as a general equivalent.

With the development of the business and increasing demand in the market, banks had also expanded their service to storing and lending with interest, transferring the titles with costs, etc. which also led to the advent of cheques and promissory notes. Since then, the bank started playing a major role in the financial system and generating economic activities. However, the initial money in a note was issued by the banking institutions and endorsed by the banking institution's credit, which wasn't recognized as official tender. After the involvement of the government, some metal currencies were confiscated, and paper money was brought up on the stage of history. Coins and banknotes issued by the authorities of the states have become the standard monetary objects in all countries, so as to collectively be called 'cash' or 'currency'. (Geva, 2019)

Compared to the commodities and metal currency, paper currency is relatively lighter and more convenient. However, when it comes to millions and billions, it's still quite hard to transport all the

notes of cash from one spot to another, especially to far-off destinations. Therefore, with the evolution and development of technology, to overcome these barriers, in addition to bank transfers, digital payment and digital currencies such as cryptocurrencies, have been introduced.

Nowadays, people have been using comparatively less cash than before. For example in China, many people haven't used cash for a very long time, thanks to the prevalence of digital payment methods by phone (Wu, 2016). As well as in many other countries, people prefer paying by bank cards and other digital payments. As they could avoid carrying cash and getting change. Besides, people can make payments online. More importantly, this payment process can be done within seconds anywhere and anytime with just one click (Wu, 2016). The efficiency of payment has made a huge leap. We have lots of available payment methods, such as cash, bank accounts, and some other third-party payment methods. For example, Alipay, WeChat, PayPal, Paytm, and Google pay, etc. the third-party payment is just a form of electronic cash and is no different from bank notes. It is still centralized and endorsed by the national credit just transformed into an online digital version (Tang et al., 2019) It greatly removes the physical limitations of cash and made the payment method shift from offline to online, from physical to virtual which makes the payment efficiency increase rapidly.

Although the electronic cash payment methods have become more convenient and efficient, with globalization and increasing demand for overseas payment, there are still some limitations in terms of regional policy, currency differences, inconsistency of the banking system. In 1947 there were 76 countries. Today there are 206, along with the growth, the number of currencies in circulation has also increased sharply. (Alesina & Barro, 2002).

With concern about those limitations and the financial crisis of 2008, an algorithmically formulated decentralized electronic cash system was initially brought up by the creation of the first cryptocurrency, Bitcoin in 2008 by Satoshi Nakamoto (Barber et al., 2012; Weber, 2016)

Since the invention of bitcoin, it gained astonishing popularity in recent years as a number of countries have started accepting and regulating cryptocurrency (Sukumaran et al., 2022), progressively more cryptocurrencies were created afterward which could act as a better substitute for bitcoin by considering its technology and transaction efficiency, etc.

The underlying technology of Bitcoin and other cryptocurrencies is blockchain technology. One of the most important characteristics of blockchain technology is the ability to maintain the logging of secure, encrypted, and distributed digital transactions. (Turk & Klinc, 2017). Other traits are being decentralized, running 24/7 enabling fast transaction settlement, transparent transaction data, no disclosure of users' information, no fees for intermediary, non-reversible and non-changeable transactions and so on. From this technology, blockchain could help people build reliable trust between the people who conduct transactions, as well as allow them to share the data and conduct peer-to-peer value exchange without another intermediary and a third party being involved (Shao et al., 2018).

That's to say, with blockchain technology, the traders can make transactions without restrictions of timing, physical distance, currency exchange and intermediary confirmation.

With the fast development of E-commerce, Cryptocurrency is considered to have a potential to play an important role in the transaction and payment system. (Polasik et al., 2015).

However, this technology and adopting cryptocurrency as a transaction tool are still controversial. While bringing some convenience to our lives, it also provides a perfect platform for criminal activities. The huge amount of electricity and energy consumption is also a major concern in many countries. (Niranjanamurthy et al., 2019)

Considering all the currencies, payment, and transaction methods, the whole evolution aimed to overcome the challenges imposed by previous payment methods to make transactions easier, faster, more secure, and cheaper. Although there are improvements after each stage of evolution, there still are some drawbacks and risks brought by the evolution of payment methods.

In this article, the author will be focusing on cryptocurrency using as a payment method and transaction tool and discuss its pros and cons as well as make comparisons with other traditional payment methods in order to understand the difficulties of using cryptocurrency for payments in our daily life. Furthermore, to explore people's attitude toward it, and the potential adoption in the future.

To achieve the goals, an in-depth analysis of a survey aimed at both cryptocurrency users and non-cryptocurrency users was conducted. The author chose to analyse it from the users' perspective, who gave feedback based on their real experience.

To support the survey and to confirm the answers provided by the people, existing literature and internet articles were extensively used. This paper will prove useful for developers of cryptocurrencies, regulators, its current users and potential individual or business users.

2 Literature Review

Cryptocurrency since its invention has grown exponentially with a lot of criticism surrounding it because of anonymity and decentralization. However, it has still had its spotlight and is being used by many people and corporations. For faster and hassle-free payment, a lot of people have switched to paying by non-cash payment like bank cards, third-party payment like WeChat (Wu, 2016), Apple Pay, and digital cash equivalents such as cryptocurrency. Everyone may have different preferences for payment methods when they conduct different purchasing or transferring activities. In this literature review, the author will analyse research papers, journals, books, published data, and articles that have been written concerning this topic or relevant to some of the concepts.

2.1 Structure and objectives

This literature review will start with the general concept of the mechanism of traditional digital payment and cryptocurrency payment and transactions. During this part, the process details, technology, and different roles during the whole transaction will be clarified. Followed by the comparisons between these two kinds of payment methods from the perspectives of transaction speed, cost, currency selection and exchange and value stability. After this, the author will conclude the strengths and weaknesses of cryptocurrency as a payment tool. In the end, the general risks of cryptocurrencies and customers' behaviour and acceptance towards Fintech will be discussed based on a few studies derived from the Unified Theory of Acceptance and Use of Technology.

There are two main objectives of this literature review. The first one is to find out the differences and similarities between the two methods in order to discuss the pros and cons of cryptocurrency transactions which will be derived from the comparison of traditional and cryptocurrency payment methods, and furthermore, to discover its strengths and weaknesses. Another objective is to understand and discuss the aspects that affect cryptocurrency adoption from the scope of customer acceptance behaviour.

2.2 Mechanism of traditional payment and cryptocurrency payment methods.

The traditional payment method here means bank payment or other third-party payments like WeChat. So, how do transactions work through this method? Initially and simply when buying apples from a vendor on the street, we will give the vendor cash, and the vendor will give us the apple face to face. However, if you want to give money to someone who is from a far distance, then in this scenario, the bank will play a role as an intermediary. If the sender and receiver have their accounts in different banks, the arrival time of the fund will be determined by how long the interbank fund delivery will take. In this case, transactions won't always be completed real-time; bank working hours and delivery frequency

will define the whole process. Additionally, different banks may have different standards and system interfaces, which can also slow down cross-bank transaction services. (Lu et al., 2011)

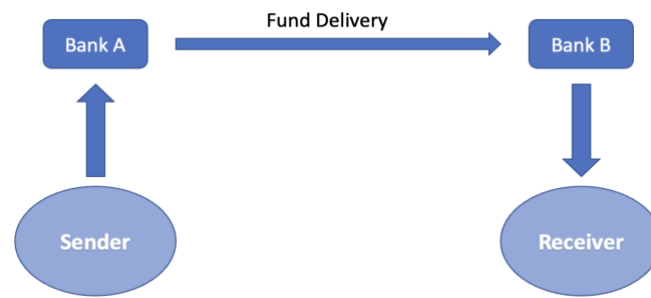


Figure 2-1: Bank transfer process

Since the beginning of the 21st century, E-commerce has developed very rapidly. It has gradually changed the way of daily consumption. Instead of going to shopping malls or markets to purchase goods or services, people can order things and complete the payment online. As mentioned before, since everyone will likely have different bank accounts, bank remittance might be time-consuming. At the beginning of E-commerce, the trust issue was a big challenge for online shopping. Buyers and sellers are strangers, and either side is afraid to pay first or deliver the goods first. Therefore, it has led to the emergence of third-party payment which plays the role of an intermediary which manages and secures the transactions between the seller and buyer. For example, if a person decides to purchase a shirt that they like on a website, and they choose to pay using their credit card, the information of the transaction will be approved by the bank that has issued the card and the fund will arrive or be credited to the third-party, only after the confirmation of success from the buyer, the third party would release the payment to the seller.

Additionally, third-party payment usually offers a wide range of networks and bank accounts (Lu et al., 2011). In order to provide a more convenient service, third-party payment institutions are directly connected with many banks, which guarantee users, regardless of which bank account they use. The online payment all can be done on the third-party platform. On the other hand, third-party payment usually provides an easier procedure by reducing the effort, such as entering the beneficiary's name, account, address, and description. Instead, users can create their accounts with unique information like ID numbers and phone numbers.

Apart from being an online transactions intermediary, third-party payment also enables face-to-face payment to be conducted on a real-time basis if the sender and receiver have the same third-party account by entering the username of another party or scanning its QR code (unique identity). Face-to-face payment requires very fast processing. The reason why the third party could provide this service is that the third party processes its transaction within its own system. Although the payer's bank has not completed all the payment process, due to the cooperative relationship between the third party and multiple banks, the third party will advance the funds to the payee first within its network, so that the entire transaction can be done in real-time for both payer and payee.

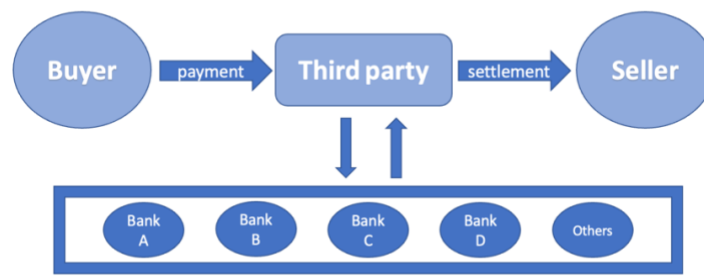


Figure 2-2: Third-party transfer process

No matter bank transactions or third-party transactions, an intermediary – a bank or other financial institution is always involved directly or indirectly, which plays an essential role in verifying the transactions. In this case, transactions are considered centralized through a third party. (Hazari & Mahmoud, 2019)

Cryptocurrency is a relatively new method of payment; it has only existed for over a decade. However, in recent years, it has caught the eye of a lot of individuals and corporations around the world. The reason for the explosion in popularity of this new digital currency is because of its nature of being decentralized, being different from the centralized conventional payment methods. Popularity is usually affected by their market price and the activeness of users on social media (Setyono et al., 2022). Decentralized means that apart from the payer and payee, no other party is involved as proof of payment. Cryptocurrency, on the other hand, avoids this intermediary and involves transferring money from one person to another without involving a third party. All the transactions go through and are recorded on a blockchain. A blockchain could be both permissioned and permissionless. A permissioned blockchain has a group of people validating the blockchain as it is being developed, which can be delegated to a group of people or an organization. The permissionless blockchain doesn't require validators. A blockchain has all the records of all the transactions that were made while keeping the information of the users anonymous (Hazari & Mahmoud, 2019).

Apart from functioning as currencies, cryptocurrencies are also popular as a financial asset. It's being traded on exchange platforms by individuals and institutions for making profits, playing a similar role as stocks, securities, other tradable commodities, and foreign currencies. It has also been stored by investors for future potential value appreciation (Sukumaran et al., 2022).

2.3 Comparison of traditional payment and cryptocurrency payment methods

2.3.1 Transaction speed and capacity.

Let's take VisaNet (visa credit card payment network), one of the largest electronic payment networks in the world. As an example, according to its official report in 2013 VisaNet was able to process 150

million transactions per day, approximately 1,700 transactions per day. From “Catalyst for commerce” (a report by VisaNet). Alipay, China’s biggest third-party payment platform, during one big online shopping festival in 2015 on its platform, supported a peak transaction value of 85,000 transactions per second.

For cryptocurrency, transaction speed varies for different cryptocurrencies due to their respective chain protocols.

Table 2-1: Transaction speed of different cryptocurrencies

Cryptocurrency	Transactions per second	Average transaction confirmation time
Bitcoin	3-7	25 min
Ethereum	15-20	2 min
Ripple	1500	4 sec
Bitcoin Cash	61	60 min
Cardano	5-7	3-5 min
Litecoin	26	30 min
Monero	4	30 min
Neo	1000	15-20 sec
Dash	48	2-10 min

(Source:(Hazari & Mahmoud, 2019))

As observed from this table, most cryptocurrencies undergo the problem of low capacity and processing speed. Bitcoin, the pioneer and the most dominant one so far, on average experiences around 25 minutes to complete the confirmation of one transaction and conducts 3-7 transactions per second. Nevertheless, there are some other cryptocurrencies like ripple and Neo which have improved the blockchain technology and, is able to conduct more than a thousand transactions per second, which is still not comparable to the conventional payment methods.

However, from another perspective, whenever there is a third party involved, there will be one more step for confirmation. That’s to say, if there is any kind of disapproval from any third party, the transaction won’t be successful. In cryptocurrency payment, this kind of disapproval will be avoided, it will only depend on the payer and payee. On another hand, the possibility of disapproval and third-party confirmation offers the payer the chance to revert the transactions to avoid loss in some cases before the fund arrives at the payee’s account. However, cryptocurrency doesn’t support this function, as its nature of being decentralized will not allow revertible transactions.

2.3.2 Transaction cost

Transaction fees for traditional payments are usually defined by the card issuer/bank, the card network, or the payment processor. Let’s look at Barclays bank's (one of the biggest banks in the UK) fees standard in the 2022 tariff report for personal customers.

6 Charges for other services, and cut-off times for payments

We can change these at any time. We'll tell you the current charges when you request the service.

Service	Fee
Sending a same-day transfer of money to another bank in the UK (CHAPS)	
CHAPS payments made via branch or telephone banking	£25
CHAPS payment made via online banking	£0
Cancelling a CHAPS payment	£20
Sending money outside of the UK, or payments into the UK involving a currency conversion	
SEPA Credit Transfers made via all payment channels	£0***
Barclays International Payments made via the Barclays app or online banking	£0****
Barclays International Payments made via branch or telephone banking	£25****
USD Cover Charge	£3*
Cancelling an international payment order (other than cheque)	£20
Tracing*, recalling, cancelling or changing a payment	£20
Receiving International Payments	
Receiving a SEPA Credit Transfer, or a euro payment from the EEA	£0
Receiving an international payment <£100.00 or equal to	£0
Receiving an international payment >£100.01 or equal to	£6^^
Other	
Banker's draft	£15
Cancel (or stop) a cheque	£12.50**

Figure 2-3: Barclays bank's 2022 tariff report for personal customers

The basic online banking transactions of sending money both domestic and internationally are shown free of charge. The fees for receiving funds from SEPA (the Single Euro Payment Area) and Euro payment from EEA (The European Economic Area) is 0 pounds. Other international transactions higher than 100 pounds will be charged 6 pounds for receiving. However, when it comes to currency exchange, hidden fees may occur to purchase the currency (bank offered currency prices vary from the market price)

For cryptocurrency transaction fees, the shown data is obtained from the official website of Binance (One of the biggest cryptocurrency exchanges) wallet (where users could store their cryptocurrencies and conduct transactions). The 10 highest capital market coins are listed below with the fees specified on Date 27/10/2022

Table 2-2: Cryptocurrencies' transaction fees

Cryptocurrency	Transaction fees (may subject to change)	Values equal in US dollars on the date (27/10/2022)
Bitcoin (BTC)	0.0002 BTC	4
Ethereum (ETH)	0.0016 ETH	2
USD coin (USDC)	10 USDC	10
BNB	0.0005 BNB	0.14
Cardano (ADA)	1 ADA	0.4
Ripple (XRP)	0.25 XRP	0.1
Binance USD (BUSD)	0.5 BUSD	0.5
Solana (SOL)	0.01 SOL	0.3
Dogecoin (DOGE)	5 DOGE	0.4

The fees above are all applied to the default network of each cryptocurrency on the date of 27/10/2022. As mentioned, the transaction fees for different cryptocurrencies may be subject to change, as, for some cryptocurrencies, transaction fees differ according to the market transaction demands. There is also an alternative network to make the transactions with even cheaper or more expensive costs.

In conclusion, among the top 10 market capital coins, more than half of them realized the relatively cheap transaction fees of under 1 dollar, especially for big amount transactions. The transaction fees of the rest are also under 10 dollars.

2.3.3 Currency selections and exchange

Many countries have their own single type of currency. Domestic purchases and payments are usually relatively easy to be conducted without the need of changing currency. Considering most of the things people purchase are priced with local currency, in this case, people do not need to hold different currencies for daily activities. When it comes to cross-border payments or transactions, especially when more than 1 currency is involved, it's necessary to purchase another currency to complete the payment. Technically people can choose to have any currency, however, the availability will be defined by banks and financial institutions. As traditional payment always has a third party involved, therefore, to exchange currency will need permission from all the relevant parties to succeed. Furthermore, some countries also have regulations on the limit of foreign currency exchange amount, or it's necessary to provide valid reasons to make an international transaction. In this case, currency options are not free for users to own and international transactions also have many potential obstacles. Besides the availability of foreign currency in the banks, there is also another problem with bank networks, due to different state regulations, an international transaction for certain banks may not be supported or allowed.

Cryptocurrency, on the other hand, eliminates the permissions and procedures required by the centralized system. Cryptocurrencies are relatively easy to purchase, a person can buy cryptocurrencies from cryptocurrency exchanges (Cocco et al., 2017) or can buy them directly from a wallet. A person who wants to buy a cryptocurrency can go to an exchange, deposit fiat currency, and then purchase an equivalent amount of a cryptocurrency of their choice. For example, if a coin is priced at \$1 per coin, and the person has \$50, the person can purchase 50 coins of that cryptocurrency (Cocco et al., 2017).

However, on the other hand, if a person has one coin and wants to exchange it for another coin, it can be a little challenging as the exchange must have that feature and those sets of cryptocurrencies as direct swaps of each other. Otherwise, the person must change the coin to fiat currency and then switch to the desired coin. However, the availability of that coin also depends on the cryptocurrency exchange, if the cryptocurrency exchange doesn't have the desired coin, it could further complicate things for the user (Miraz & Donald, 2019).

Each exchange has a unique wallet for the user and all cryptocurrency transactions require a wallet to be executed. The wallet address is made public, and all the transactions recorded on that wallet are made public as well on a blockchain. However, the wallet address doesn't require any personal information from the user (Baur et al., 2015).

Cryptocurrencies can also be deposited or withdrawn from special cryptocurrency ATMs directly. This kind of service has gradually spread all over the world. For example, a person, X, located in Portugal wants to send money to his wife, Y, in the USA, if X goes through the centralized system, it'll mean going through the banks and converting the local currency Euro to United States Dollar and then wait for a couple of days or hours depending on the service hours of the bank and Y will receive the

money according to the working hours or system of the bank in the USA (Chen et al., 2017). However, if X decides to send the same amount of money with a cryptocurrency, let's assume bitcoin (BTC), Y can simply go to a cryptocurrency ATM, if available in the region, withdraw the equivalent amount of money in the local currency, and will be able to receive this money (Baur et al., 2015). There are approximately 38000 cryptocurrency ATMs around the world, and they all offer deposits, some offer the withdrawal of major cryptocurrencies, such as Bitcoin, Ethereum, Dash, etc.



(source: <https://coinatmradar.com>)

Figure 2-4: Distribution of cryptocurrency ATMs around the world

Above it's the map of cryptocurrency ATM distribution from its website. Although it spreads fast, there are still some countries and regions that have not been covered yet. For example, Mainland China, Korea, Japan, Malaysia, Singapore, and many other countries have 0 cryptocurrency ATMs so far. The reasons for its absence could be state regulation and market demands. According to (Sivicka, 2018).

China has made it clear:

that the central bank has full control over cryptocurrencies and electronic fund transfers. With a research team set up in 2014 to develop digital fiat money, the People's Bank of China believes "conditions are ripe" for it to embrace the technology. But at the same time, the authorities are cracking down on bitcoin mining and cryptocurrency trading.

South Korea stated:

Authorities in South Korea have focused on protecting consumers and preventing cryptocurrencies from being used as a tool for crime. Cryptocurrencies are far from becoming legal tender, and as such regulations to protect consumers and prevent illegal trading are necessary. A task force within the Bank of Korea has been conducting studies on cryptocurrencies.

Therefore, cryptocurrency can realize international transactions without the process of converting currencies and going through intermediaries for support or approval. Nevertheless, due to incomplete regulations, cryptocurrency has not been accepted in many countries as a legal tender, which limits its usage and makes it only possible to conduct international transactions between countries that have available services.

2.3.4 Currency value stability

When conducting cross-borderer transfers, in addition to the currency selection and conversion, the stability of currency value is also a very important factor that users will consider. According to the research regarding euro stability in eurozone countries conducted by (Bekkour et al., 2015), both vulnerable countries (with fragile economic conditions and healthy countries with stable economic conditions) have an impact on the stability of the Euro in the way that higher levels of volatility are accompanied by lower levels of the exchange rate, and in turn, a weaker Euro (Bekkour et al., 2015). In another word, avoiding volatility can keep the strength of a currency. Therefore, many countries would like to keep the currency stable for better development, especially in import and export activities.

Although ideally many countries would like to keep their currency stable and strong, however, due to constant changes in the international environment, political, trading policies, and other aspects, it's impossible to keep it stable all the time. Buying and trading foreign currency is also a financial investment strategy for many people.

Cryptocurrency is no exception when it comes to changes in price. Compared to a fiat currency, let's assume the US dollar, the value of cryptocurrency changes every second. If we take the example of Bitcoin (BTC), it has mostly been used as a financial investment as opposed to its purpose of serving as currency (Katsiampa, 2017). The primary reason for this can be assumed that the cryptocurrency market operates 24 hours a day, every day, and is highly volatile in comparison to fiat currencies (Dwyer, 2015). The following charts show the price of a bitcoin, a cryptocurrency, to the US dollar and Euro to the US dollar since 2018:



Fig # Eur/USD price has only moved between 1.26 to 1.04 since 2018

Figure 2-5: Price of a Euro to the US dollar since 2018



Fig # BTC/USD price has ranged from less than \$5000 to almost \$70000 since 2018

Figure 2-6: Price of a bitcoin to the US dollar since 2018

Hence, the volatility can be both good or bad for vendors or people who accept cryptocurrency payments. It can lead to huge losses for businesses if there is a sudden decrease in the price of a cryptocurrency that they accept payments in. Volatility is a factor that can't be ignored when it comes to cryptocurrencies (Dwyer, 2015).

Another recent example can be taken from the cryptocurrency Terra coin (LUNA) invented by terraform labs. The price of LUNA soared to an all-time high of \$120 on the 2nd of April 2022, but just a month later, on the 5th of May 2022, the price of LUNA went into a downward spiral falling from \$88 to \$0.0001 on 7th of May 2022. Within a matter of 2 days, a cryptocurrency that was ranked #6 on the market collapsed completely. The chart below shows this sharp fall in the value of LUNA:



Fig # LUNA/USD chart displaying the collapse of LUNA

Figure 2-7: Price of Terra coin (Luna) to Tether US (USDT) since 02/2022

If a vendor were to accept the payment in this cryptocurrency on the 5th of May 2022 when the value of LUNA was \$88 per coin and cashed it just a day later, they would've lost all the money as it practically collapsed to 0. Hence, the volatility of these cryptocurrencies may hinder their wide adoption.

From what have discussed above about traditional payment and cryptocurrency payment. The conclusion about cryptocurrency's strengths and weaknesses are summarized below

Strengths

- Simple operations (skip the intermediary, faster international payment)
- Transparency (transaction records)
- Low cost (low transaction fees)
- More availability and more options (no limit for purchasing and holding cryptocurrencies)
- No need for currency exchange (even for cross-border transactions)
- High volatility (potential gain in terms of the value of the cryptocurrency)
- Anonymous (without being tracked)

Weakness

- Low capacity and low processing speed (currently not ideal for face-to-face payment)
- Non-reversible (unable to withdraw false transactions)
- Limited availability and access (some regions don't have cryptocurrency service)
- Lack of regulations (funds and transactions are not being supervised)
- High volatility (potential loss in terms of the value of the cryptocurrency)
- False cryptocurrencies (some cryptocurrency projects are not reliable)
- Anonymous (unable to track payee and payers)

2.4 General risks of cryptocurrency

Cryptocurrency is renowned for their extreme volatilities(Naeem et al., 2022), it has ten times higher volatility than conventional assets (Bariviera & Merediz-Solà, 2020) . Many users adopted cryptocurrency after taking into consideration of the risk of volatility or were attracted by it. Therefore, volatility is not a hidden or unforeseeable risk. However, there are many unpredicted risks that people should pay attention to avoid unnecessary loss.

- A crypto owner may lose the keys to their wallets, especially when there it's not on exchange platform, it may be hard or nearly impossible to retrieve them (Rezaeighaleh & Zou, 2019)
- Cybercrime including hacking(Volety et al., 2019), phishing scams and malicious software could make users lose their holdings. Although the public key cryptography and blockchain consensus mechanism of cryptocurrency are hard to be broken by the criminals(Li et al., 2020). Apart from it, many phishing sites were duplicated almost identical to the real websites of

exchange platform which are indistinguishable for newer users who are more likely to be vulnerable and lack experience.

- False propaganda can lead people to blindly follow, which can be abused by malicious people subject to price manipulation which is common in the cryptocurrency markets (Gandal et al., 2018). fraudulent actions of a trader or a group of traders can cause substantial disturbance to the market (Fratrič et al., 2022), including deliberated price bubbles (Cheah & Fry, 2015) which generates an immediate need for improved regulation (Viglione, 2015).
- Gambling psychology: Its high volatility and 24/7 active market nature of cryptocurrency allows traders to engage in speculative trading patterns closely resembling gambling (Johnson et al., 2023). In addition to potential financial loss and addictive trading behaviours can severely damage the traders' mental health.

2.5 Customers' acceptance

Apart from the capabilities, advantages and disadvantages of innovation and technology itself, people's attitude and acceptance towards it are also very essential to define its success and feasibility for future adoption. In this sector, the author will be discussing the theory of customer behaviour towards fintech and innovative technology in order to help understand and foresee the development of cryptocurrency better as a payment method. At present, the phenomenon that is happening is the use of financial technology, in particular concerning digital payments. (Sukaris et al., 2021)

Digitalization is a trend in many financial services. It has gained more attention from the users, especially during the epidemic of covid-19. Over the past decade, banks and FinTech companies have invested heavily in digitizing their banking services, leading consumers to use them instead of traditional banking services such as ATMs and bank branches, according to (Daragmeh et al., 2021). In addition to the investment in technology from financial institutions, understanding the level of acceptance of the users is also significant to contribute to the development of digitalization. One theory that is widely used to see the level of acceptance and use of technology is the Unified Theory of Acceptance and Use of Technology. (Sukaris et al., 2021). This theory was brought up and developed by (Venkatesh et al., 2003). There are 6 main parameters that influence the acceptance and behaviour of using a technology, and we could apply them in using cryptocurrency.

- Performance expectancy: users expect the adoption of cryptocurrency will help them in fulfilling objectives at work. As innovation adoption often involves behavioural change, there must be perceived benefits to justify adoption (Chan, Troshani, Rao Hill, et al., 2022). Unless working in the industries related to cryptocurrency or in the finance segment, adopting cryptocurrency won't have a significant impact at work.
- Effort expectancy: the degree of ease associated with system use. It helps explain which payment method will be more or less likely to be adopted. Considering the current regulations

for cryptocurrency and less availability. People might not consider adopting it out of the worry of complexity.

- Social influence: It defines the degree of influence that society has on their decision to use certain thing. This might play a significant role in cryptocurrency adoption as popularity has been a big driver for cryptocurrencies to grow (Phillips & Gorse, 2017)
- Facilitating conditions: it defines the level of confidence that individual has on the availability of the organizational and technical infrastructure to support the use. There are many platforms that have emerged for providing trading and deposit cryptocurrencies. According to this theory, people tend to choose the best facilitated.
- Hedonic motivation: a level of pleasure that the users obtain from using technology. Cryptocurrencies to some extent, provide the pleasure of gambling (Johnson et al., 2023).
- Trust: is the extent to which one party is willing to depend on another with a feeling of relative security (Chan, Troshani, Rao Hill, et al., 2022)

A test about the Unified Theory of Acceptance and Use of Technology regarding e-wallet adoption is done by (Sukaris et al., 2021), the result concluded:

- There is an effect of performance expectancy, social influence, facilitating conditions, hedonic motivation, and trust in behavioural intention.
- There is no effect of effort expectancy on behavioural intention.
- Social influence has the most significant influence on behavioural intention e-wallet; followed by facilitating conditions, performance expectancy, hedonic motivation, and trust.

Another study about Fintech adoption in terms of bank openings done by (Chan, Troshani, Rao, et al., 2022), their model extends the Unified Theory of Acceptance and Use of Technology by integrating perceived risk, initial trust and financial literacy into an overarching conceptual model. The result from their study is that performance expectancy, effort expectancy, social influence and perceived risk are direct antecedents of consumers' usage of intention of Open Banking, as well as financial literacy that lowers initial trust.

We could refer to the result obtained regarding the behaviour of e-wallet adoption and bank opening to expect the aspects that would also affect cryptocurrency adoption. According to the Unified Theory of Acceptance and Use of Technology and the results from the tests done by (Sukaris et al., 2021) and (Chan, Troshani, Rao Hill, et al., 2022). We can expect the perspectives of social influence, facilitating conditions, perceived risk, and trust to understand the feasibility and potential adoption of cryptocurrency payment.

3 Methodology

3.1 Research questions

As mentioned at the beginning of the paper, the whole evolution of currency is aiming to make payment more convenient and more feasible, and it was pushed forward according to the demand of the public users and their daily activities. So how can we define if a payment tool has become or will become more convenient and feasible? Apart from the intrinsic features and functions of the payment method itself. People's attitude towards it and what people perceive and observe also plays an important role in making a general evaluation of it. Therefore, this thesis aims to find out

- The strengths and weaknesses of cryptocurrency as a payment tool from the user's perspective.
- People's opinion on its current situation and future development
- People's willingness to adopt cryptocurrency and in continuing using cryptocurrency.

3.2 Research strategy

As we have compared previously in the literature review, the traditional payment methods and cryptocurrency payment methods in terms of transaction speed, transaction cost, availability and volatility. However, all the material is obtained from official websites, exchange offices and published papers. There is always a difference between the information being given and the information being received. Therefore, the author will conduct a survey in order to analyse from the users' perspective through the primary data collected.

This survey is designed to understand how respondents comment on their experience with different payment methods and their opinions on cryptocurrency as a payment method and its future development. In the end, to attain the degree of their willingness to adopt cryptocurrency.

The research was conducted by a descriptive survey with both closed and open questions. The purpose of closed questions is to define the target groups and find out the features of cryptocurrency that respondents think are advantages and disadvantages. According to (Hutter & Hennink, n.d.), to understand better the reasons or motivation behind some phenomena, qualitative research should be adopted in order to achieve it. Therefore, the purpose of the open questions is to find out respondents' opinions in a non-framed way on the current status and future potential development of cryptocurrency and its market, as well as the in-depth reasons for their behaviour towards cryptocurrency. Additionally, it can also help the author to understand more deeply the cryptocurrency's functions and its pros and cons that maybe not have been seen from the recourse of the literature review.

3.3 Data collection method

The survey was collected during the period from June to August of 2022 and the dissemination of the survey is conducted completely through online platforms, mainly from social networks and specific

forums. The target group is the general population. However, the first question will help to filter the population who has never heard about cryptocurrency. Therefore, we could obtain data from the population that has knowledge of cryptocurrencies. After the filter is done with the first question, the rest of the respondents will be divided into 2 groups respectively.

- group 1: The respondents who have already used cryptocurrency for transactions or payments.
- group 2: The respondents who have knowledge about cryptocurrency but have never conducted any transaction with cryptocurrency.

By dividing them into 2 groups, the author can conduct an analysis from 2 levels. From group 1, it will help to understand from their experience during cryptocurrency usage, what are the positive and negative aspects of cryptocurrency payment methods compared to traditional payment methods, as well as the improvement they believe cryptocurrency needs. Group 2 will help to understand the reasons why they don't use cryptocurrency, their willingness to adopt cryptocurrency and their worries and concerns.

In order to get a proper number and good quality answers for group 1, the survey was also intentionally sent to some cryptocurrency-related social media forums and groups, where there is a higher chance of finding respondents who have experience of using cryptocurrency payments.

4 Data analysis

Overall, 380 answers to the survey were collected. The confidentiality and anomaly of the answers are ensured and well protected. Out of 380 answers, 17 respondents chose the answer “No” to the question “Do you know what cryptocurrencies are?”. Hence, these answers will not be considered by data analysis to not diminish the data quality. 363 (95.5%) chose the answer “yes”. Therefore, the analysis of this research will be mainly based on the 363 answers.

Of the valid 363 answers, it was divided into two groups, group 1 (the respondents who have already used cryptocurrency for transactions or payments), which consists of 154 (42.3%) respondents, and group 2 (The respondents who have knowledge about cryptocurrency but have never conducted a transaction with cryptocurrency), which consists of 209 (57.7%) respondents.

To simplify the process of analysis, and not mix the data, the analysis has been conducted separately for group 1 and 2.

4.1 Group 1 Analysis

Group 1 consists of the respondents who have knowledge about cryptocurrency but have never conducted any transaction with cryptocurrency.

4.1.1 Sample characteristics

In order to better understand the background of the respondents, the author asked questions to identify the characteristics of the sample. Furthermore, the characteristics can help to analyse the impact of regional policy and social life on cryptocurrency usage experience. To achieve that, the questions included country of residence, age, gender, educational level, and monthly gross income.

1. country of residence.

Table 4-1: The residence of respondents in Group 1

What's your country of residence?	Number
Australia	1
Canada	4
Croatia	2
Czech Republic	1
Denmark	1
France	1
Germany	1
India	3
Ireland	1
Israel	1
Malaysia	1
Mexico	1
New Zealand	1
Nigeria	1
Prefernottosay	1
Romania	1
Senegal	1
South Africa	1
Switzerland	1
united kingdom	4
USA	125
Grand Total	154

The majority of the respondents reside in the USA, which accounts for 81.1% to the number of 125. Canada, the UK, India and Croatia contribute 2.6% (4), 2.6% (4), 1.9% (3) and 1.3% (2) respectively. Besides these countries, there are also Australia, the Czech Republic, Denmark, France, Germany, Ireland, Israel, Malaysia, Mexico, New Zealand, Nigeria, Romania, Senegal, South Africa and Switzerland, which all have 1 respondent each. It is diverse in terms of regions which can help the author expand the scope of analysing the data. However, most of the answers and comments will be mainly based on the respondents from the USA, as they comprise of the majority. It can be assumed that the main reason for this distribution may be because there are more active users from the USA on social media platforms (e.g., Facebook, Reddit), and forums (e.g., trading view, finance forum) where the author posted the survey.

2. Age and gender

Table 4-2: The age of the respondents in Group 1

What's your age?	Number
18-25	32
25-35	57
35-45	42
45-55	13
over 55	5
Prefer not to say	2
under 18	3
Grand Total	154

Most of the respondents are aged between 18-45. The most common age group is between 25-35, which accounts for 37% (57), then the age group between 35-45 accounts for 27.3% (42), and the age group of 18-25 accounts for 20.1% (32).

Table 4-3: Answers for the question "what's your gender" for Group 1

What's your gender?	Number
Female	17
Male	132
Prefer not to say	5
Grand Total	154

Within the sample, most of the respondents are male, amounting to 132 (85.7%), whereas female respondents number to just 17 (11%). 5 respondents preferred not to disclose their gender.

3. Education level and gross monthly income

Table 4-4: Answers for the question "what's your education level" for Group 1

Education level	Number
Bachelor	76
High School	19
Masters	45
Middle School	1
PhD	8
Prefer not to say	5
Grand Total	154

Regarding the education level, 83.8% (129) of Group 1 responded that they have at least one university degree.

Table 4-5: Answers of the question "What's your monthly gross income level?" for Group 1

Gross monthly income	Number
1000-3000 USD	23
3000-5000 USD	26
above 5000 USD	80
No income	7
Prefer not to say	7
under 1000 USD	11
Grand Total	154

As shown in the table above regarding the gross monthly income, 51.9% (80) of the respondents in Group 1 make more than 5000 dollars a month, and 16.9 % (26) make between 3000-5000 dollars a month. From the feedback received from the respondents and considering the finance-related forums where the author posted the survey where there has a large number of users who are working in the field of finance, their monthly income is usually above 5000 dollars. Differently, there are 7 (4.6%) respondents currently with no income.

In general, we can summarise that the sample Group 1 mainly consists of people who are male, residing in the USA, between the age of 18 to 45, have received university degrees or above, and have a monthly income of over 3000 dollars.

4.1.2 Findings

After getting to know the general characteristics of the sample, the author aimed to understand their perspective towards different payment methods and, furthermore, to explore their cryptocurrency usage experience, attitude and comments on it.

Firstly, to have a general idea about different payment methods. The question asked was, how often the respondents use the following payment methods?

Table 4-6: Answers of the question "How often do you usually use the following payment method?" for Group 1

payment method	Third-party payment	Crypto	Credit/debit Card	Cheques	Cash
Always	13	2	63		2
Never	33	75	3	85	11
Occasionally	43	13	21	11	50
Often	36	1	66	2	26
Rarely	29	63	1	56	65
Grand Total	154	154	154	154	154

The most commonly used payment method is a credit/debit card. There are 129 (83.8%) respondents who use it very frequently. However, there are 4 people (2.6%) in the sample who seldom or never used it. Cheque is the least used payment method, for which there are only 2 (1.3%) respondents who often use it for payment, and more than half of the sample (55.2%) have never used cheques. With the fast

development of digital payment, cash has been used much less than before (Wu, 2016) with data showing that only 28(18.2%) respondents in Group 1 use cash often and 50 (32.5%) people use it occasionally. Notably, almost half of the sample (49.4%) rarely or never used cash. Third-party payments (Apple pay, Google pay, WeChat etc.) are frequently used by 49 (31.8%) respondents, yet 33 (21.4%) have never used them. Cryptocurrency is still not considered as a well-known payment method. It has just 3 (1.9%) regular users among the sample of Group 1 and 13 (8.4%) respondents use it occasionally, notably 75 (48.7%) respondents have never used it thus far.

As mentioned before, one of the main features of cryptocurrency is removing some obstacles when conducting an international transaction. In order to know the current situation of different transaction tools for international transactions. The author started with a closed question “how often do you make international transactions?” and a question about the frequency of 3 kinds of transaction tools that respondents use for international transactions. The 3 options were bank transfers, cryptocurrencies and third-party tools (Western Union, MoneyGram). Following the data shows the frequency of the respondents’ international transaction activities.

Table 4-7: Answers for the question “How often do you make international transactions?” for Group 1

Frequency	Number
Almost every day	1
Almost every month	11
Almost every week	2
Few times a year	60
Never	80
Grand Total	154

The data shows that in general, an international transaction is not considered as a common activity among all the respondents. 51.9% of the sample never make any international transactions. 9% conduct international transactions regularly. And 38.9% occasionally transfer money internationally.

And what kind of transaction tool or network do the respondents use to fulfil their international transactions? The following table shows the frequency of 3 given tools being adopted for international transactions.

Table 4-8: Answers for the question “How do you usually transfer/receive money internationally?” for Group 1

Tools	Bank	Cryptocurrency	Third-party payment
Always	26	2	6
Never	63	110	108
Occasionally	23	13	15
Often	22	2	7
Rarely	20	27	18
Grand Total	154	154	154

Results are similar to the outcome of payment methods; Banks are the most used method for international transactions. There are only 4 people who frequently use cryptocurrency for international transactions and 13 people often use the third-party payment method. Therefore, we can assume, although the sample of group 1 have all adopted cryptocurrency, they are utilising it mainly for financial investment or as a trading instrument.

In order to know the reasons for the respondents’ preferences for using different payment methods, the author included an open question “why do you use this/these methods the most”. The features that the respondents care about the most are convenience, reliability (trust, safety), accessibility(common), simplicity and low cost. From the data collected, in addition to these main common characteristics that most of the respondents would consider, there are also unique points for each different payment method that can benefit a certain group of people. For example, from the answers of the survey, a credit card can provide prepaid service, as well as reward and discount programs. Third-party methods allow users to link multiple bank cards. However, respondents also have different opinions on the payment methods derived from their own user experience. One of the samples commented that banks are more accepted, and cryptocurrency is easier. Considering he has more than 5 years of experience of using cryptocurrency, maybe the practice has made cryptocurrency easier for him.

As the whole sample of Group 1 has adopted cryptocurrency, the author would like to know their experiences and comments regarding the usage of cryptocurrency. Firstly, have a look at their background.

Table 4-9: Answers for the question “How long have you been using cryptocurrency?” for Group 1

Time	Number
2-5 years	48
5 years +	31
6 months -2 years	67
Less than 6 months	8
Grand Total	154

The table shows the time period that the respondents have used cryptocurrency. 74.7% of them are users with 6 months to 5 years of experience. 20% have more than 5 years of experience. 8 people (5.2%) are new to cryptocurrency with less than 6 months of experience.

The next table will show how often they use cryptocurrency.

Table 4-10: Answers for the question “How often do you use cryptocurrency to make a transfer/payment?” for Group 1

Frequency	Number
Almost every day	1
Almost every month	11
Almost every week	2
Few times a year	60
Never	80
Grand Total	154

Similar to what we have summarised above, the majority of the sample uses cryptocurrency primarily for investment or trading activities. There are 57 users (37%) who utilise cryptocurrency as a payment or transaction tool. 43 of them use it a few times a year and 14 use it on a regular basis. Therefore, we can tell that currently, cryptocurrency is being adopted mainly for investment purposes rather than a payment method.

Next, we will find out the average amount of transactions with cryptocurrency and what kind of activities the users usually use cryptocurrency for.

Table 4-11: Answers for the question “What’s the average amount you usually make transactions/transfers for, with cryptocurrency?” for Group 1

Amount	Number
≤ 500 USD	109
≥10,000 USD	2
2,000-10,000 USD	6
500-2,000 USD	37
Grand Total	154

70.8% (109 users) use cryptocurrency for transactions under 500USD, 24% (37) use it for transactions between 500-2000USD. Overall, transactions above 2000 USD with cryptocurrency are not very common within the sample. We can assume that the respondents either don’t have to make big amount transactions over 2000 or they prefer other methods to conducting big amount transactions.

The following graph shows the activities which the sample uses cryptocurrency for. This question allows respondents to have *multiple choices*. Therefore, the total percentage exceeds 100%. Among group 1, 79.2% trade or invest in cryptocurrencies, 24% shop online with cryptocurrency, and 5.8% use cryptocurrency for face-to-face payments. 9.1% of the respondents use cryptocurrency to make international transactions. As recently, virtual gaming is developing rapidly and has gained a lot of popularity, especially, some of the games are developed on the blockchain technology. Thus game transactions with cryptocurrency have become very common or even essential for certain games (Scholten et al., 2019). Within the sample, 6.5% of the respondents have already used cryptocurrencies to play virtual games. Apart from these activities from the given choices, some respondents also added other transactions that they used cryptocurrencies for. For example, drugs, sports gambling, transferring

votes, utility for networks and the black market on the deep web and some of these activities may not be legal in the respective regions.

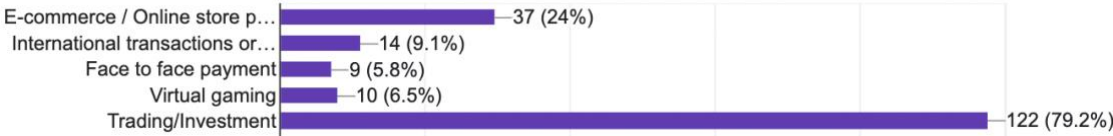


Figure 4-1: Answer for question “What kind of activities have you used cryptocurrency for?” for Group 1

With the expansion of blockchain technology, new coins keep on emerging in the market. Therefore, there are a lot of options among cryptocurrencies for the users to choose from. The respondents were asked which cryptocurrency exchanges they use and what coins they usually buy and why do they choose them? We will find out in the following paragraph.

The platforms that the respondents usually use are mainly Coinbase, Binance, Robinhood, Gemini, crypto.com and Kucoin. From the answers given by all respondents, there are more than 30 platforms that they are using. We can tell that the business derived from cryptocurrencies has greatly expanded. Users have many options on coins and exchange platforms for them to make transactions and trading activities. The following table shows the most common coins that the respondents use. This question allows respondents to choose *more than one* option.

Table 4-12: Answers for the question “What is the coin that you use the most often?” for Group 1

Coins	Number
Bitcoin (BTC)	108
Cardano (ADA)	4
Dogecoin (DOGE)	21
Ethereum (ETH)	79
Monero (XMR)	4
Others	24
Ripple (XRP)	7
Shiba Inu (SHIB)	3
Solana (SOL)	8
Grand Total	258

The most used one is Bitcoin (BTC). 70.1% of the sample have used it. The second is Ethereum, which is used by 51.3% of the sample and thirdly it’s Dogecoin (DOGE), which has been used by 20% of the sample. And the other, less common, coins are Solana (SOL), Ripple (XRP), Monero (XMR), Cardano (ADA) and others.

For the question “what are the reasons that you use these coins often”, the answers are presented mostly in the following graph. This question allows respondents to have *multiple choices*. Popularity is the most important factor for the user when they select a cryptocurrency to use. There could be a few main reasons why a lot of people care about popularity.

- Popularity can help some users save efforts to do research by just following the crowd.

- Popularity can also indicate high liquidity, which would be ideal for some trading activities.
- Popularity can make it easier for people to use or make payments, as there would be a higher chance that the other party is also familiar with the same coin, considering there are too many coins in the market and some of them may not be known by many people.

The second most important feature for the respondents is stability and thirdly is network. Good stability implies less risk in price (investment), and a trustworthy network guarantees the user good use experience. Cost and speed are also important for many users; low cost can save users' money and high speed helps users to make payments fast, especially for face-to-face payments. Apart from the given choices, there are also other reasons in the answers, like potentiality for investment, security, being decentralised, used for mining, and attracted by high market cap.

What are the reasons you use this coins often? (network, price, speed, cost...)

154 responses

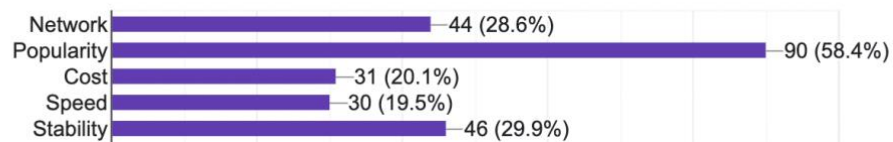


Figure 4-2: Answers for the question “What are the reasons you use these coins often? (network, price, speed, cost...)?” for Group 1

After getting to understand the background of respondents in terms of using cryptocurrency. The author will analyse the data that are considered more subjective from the respondents in the following paragraphs.

The first step is to find out what attracted people to start adopting cryptocurrencies. The results can help us analyse what characteristics of cryptocurrency are attractive to a new user, which would be helpful for some people who would like to develop and market their cryptocurrency program to attract users. This question allows respondents to have *multiple choices*.

Table 4-13: Answers for the question “What attracted you to adopt cryptocurrency initially?” for Group 1

Reasons	Number
Decentralized concept	53
Internet influence	30
Make a profit by trading (buy and sell)	104
Others	28
Recommendation from others	22
Revolutionary technology	48
Grand Total	285

The most chosen answer is “make a profit by trading”, 67.5% of Group 1 chose it. However, in order to make a profit, except for the trading strategies, the intrinsic value of cryptocurrencies is also significant. The second most (34.4%) chosen answer is “Decentralised concept”. The first cryptocurrency Bitcoin was invented for the purpose of decentralisation. However, after that, there are

also many centralised cryptocurrencies that were developed. 31.2% of the sample chose “revolutionary technology”, that’s to say innovative technology or concept can also attract many new users. 19.5% said they adopted cryptocurrency because of the internet's influence, in other words, advertisements and influencers can help to attract new users. 14.3% were recommended by other people. Some of the other answers are limited faith in traditional finance, vendors giving it for free, making a purchase that requires cryptocurrency.

In summary, from the perspective of the cryptocurrency developer/program operator, to attract users or expand your market, besides solid skills, focusing on improving the potentiality of appreciation of the coin, the creative concept and technology can possibly help to stand out. Additionally, from external resources, investing in advertising or cooperating with influencers could also attract more users.

After understanding what points can attract new users, we will look at what points made users start using them. This question allows respondents to have *multiple choices*. As always, coin appreciation is the most common factor among all users, as most users only use them for investment. Apart from this, anonymity is the second most common reason and is followed by avoiding intermediaries, avoiding currency exchange, high security and low cost.

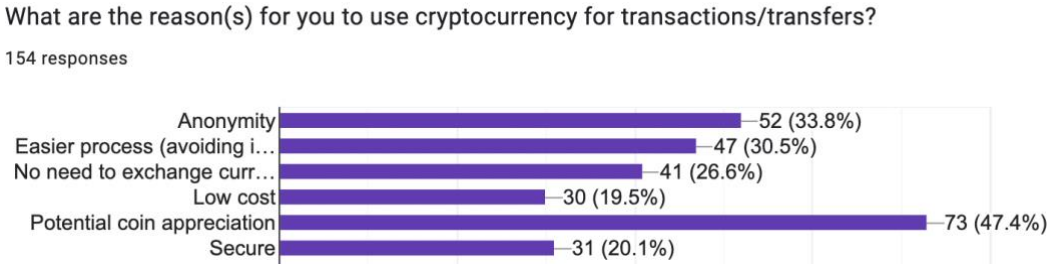


Figure 4-3: Answers for the question " what are the reasons for you to use cryptocurrency for transactions/transfer

The following graph shows the general evaluation of the respondents. 29.9% (46) liked the experience of using cryptocurrencies, 22.7% disliked it and 47.4% were neutral towards it.

Table 4-14: Answers for the question "Do you like the experience of making transactions/transfers with cryptocurrency?" for Group 1

Attitude	Number
Neutral	73
No	35
Yes	46
Grand Total	154

The next table also shows the general evaluation of experience in terms of simplicity when using cryptocurrencies.

Table 4-15: Answers for the question "How easy is it to conduct transactions/transfers with cryptocurrency?" for Group 1

Scale	Number
1 (difficult)	7
2	36
3	56
4	33
5 (easy)	22
Grand Total	154

Overall, 43 (7+36) respondents find it rather hard to use cryptocurrencies for transactions. 56 respondents were neutral about the process and 55 respondents find it relatively easy to use cryptocurrencies. It also depends on the practices and which coins (network) they use. Therefore, it's hard to simply define if it's easy or not to use cryptocurrencies. However, we can find out in detail what kind of difficulties people face during usage and what kind of advantages and disadvantages from the comparison with traditional payment methods from people's experience.

Regarding the difficulties in using cryptocurrency. The most faced are (in order): the transfer process, how to purchase and sell, exchange cryptocurrencies, government restrictions and Blockchain disruptions. Other difficulties are high volatility, learning to read its price curves, hard to spend it, poor support system from some crypto exchanges etc. However, 25.3% (39) of the sample Group 1 can use cryptocurrency without any difficulties.

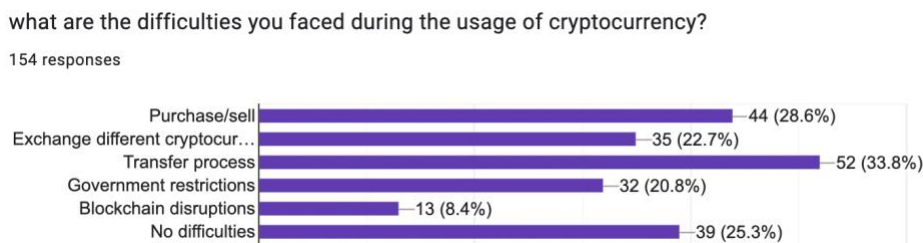


Figure 4-4: Answers for the question "what are the difficulties you faced during the usage of cryptocurrency" in Group 1

Regarding the needed improvements, the most common answers are (in order): Price stability, procedures to buy/sell, regulation, transaction cost, transaction speed, and availability (region and business/industry). We can understand most of the people want to seek stable valued and easy to be used coins.

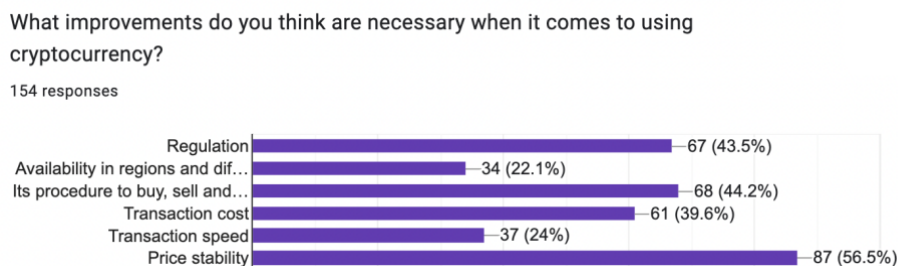


Figure 4-5: Answers for the question "what improvements do you think are necessary when it comes to using cryptocurrency" in group 1

Making comparisons between using cryptocurrency and traditional payment methods and understanding the challenges can be helpful for a long-term development of cryptocurrency. The answers regarding the advantages and disadvantages of cryptocurrencies compared to traditional payment methods have been analysed as below. Anonymity is one of its most prominent advantages, followed by less restrictions, and transparent records. Instability is one of its worst problems followed by non-reversible transactions and less availability.

In relation to the speed and cost, 31.2% of the respondents think cryptocurrencies have a faster speed, yet 21.4% think they have a slower speed compared to traditional coins. Same situation for the cost, 22.7% think cryptocurrencies have lower cost in transactions however, 32.5% think they have higher cost. These 2 points are controversial, since global users may use different banks, third parties and cryptocurrencies thus, the cost and speed vary. In order to find out the cheapest cost and fastest speed, the users have to try all options to have a comprehensive view. Therefore, we can't conclude which method is better in terms of cost and speed.

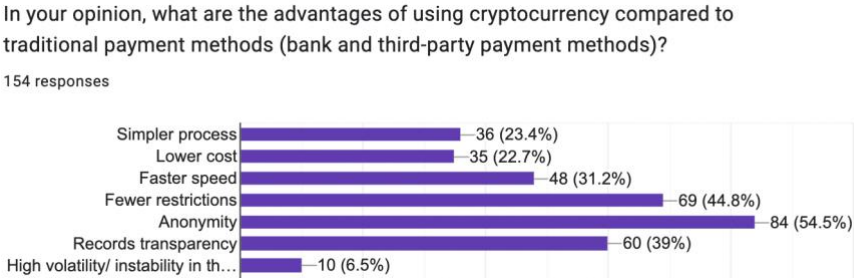


Figure 4-6: Answers for the question “In your opinion, what are the advantages of using cryptocurrency compared to traditional payment methods (bank and third-party payment methods)?” for Group 1

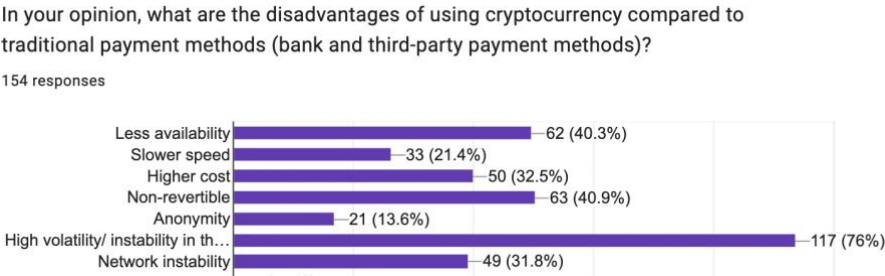


Figure 4-7: Answers for the question “In your opinion, what are the disadvantages of using cryptocurrency compared to traditional payment methods (bank and third-party payment methods)?” for Group 1

In order to have a general idea of the retention rate of cryptocurrency, the author has included the following questions.

Table 4-16: Answers for the question “Will you continue using cryptocurrencies?” for Group 1

Answer	Number
Maybe	52
No	19
Yes	83
Grand Total	154

Table 4-17: Answers for the question “Will you recommend cryptocurrency payment to others?” for Group 1

Answer	Number
Maybe	40
No	65
Yes	49
Grand Total	154

From the first graph above, more than half (53.9) of the sample will continue using cryptocurrencies in the future, 12.3% will not, and 33.8% respondents are not sure about that.

From the second graph above, 31.8% of the sample will recommend cryptocurrencies to others, 26% might and 42.2% will not recommend them to others. In general, the results seem positive for the future adoption of cryptocurrencies as the percentage of users who hold opposing views is not high.

As discussed above, the majority of the sample have a positive attitude towards cryptocurrencies. The following shows the anticipation from the respondents about cryptocurrencies’ future development. Most of them believe cryptocurrencies will become more popular and will be adopted in more industries, as well as be more regulated which may be a key factor to be a legal tender (Hairudin et al., 2022). There are also 22 (14.3%) respondents who believe it will be used more for illegal activities in the future. And 58 (37.7%) people believe there are possibilities for cryptocurrencies to collapse.

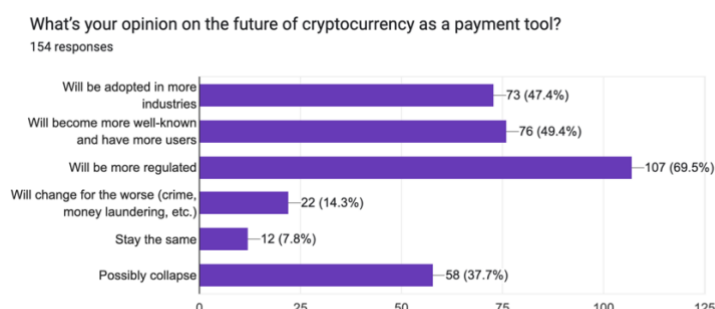


Figure 4-8: Answers for the question “What’s your opinion on the future of cryptocurrency as a payment tool?” for Group 1

As mentioned in the literature review, crypto ATMs have been put in use in recent years. And it maybe can be considered as a fundamental trial for exchange with other currencies and as a transaction tool to deposit and withdraw. Therefore, it will be interesting to hear some opinions from the respondents. So, the following questions were included in the questionnaire.

Table 4-18: Answers for the question “Have you ever heard about Bitcoin ATM?” for Group 1

Answer	Number
No	33
Yes	121
Grand Total	154

Table 4-19: Answers for the question “What do you think of the concept of Bitcoin ATMs (deposit/withdraw local currency into/from a wallet at an ATM)?” for Group 1

Attitude	Number
Negative attitude	59
Neutral	7
Others	14
Positive attitude	74
Grand Total	154

Table 4-20: Answers for the question “Would like to use Bitcoin ATMs in the future?” for Group 1

Answer	Number
Maybe	43
No	74
Yes	37
Grand Total	154

78.6% of the sample have heard about Bitcoin ATM. However, so far, it hasn’t gained too much recognition from cryptocurrency users. 48.1% of the sample have a positive attitude towards the concept and 38.3% don’t feel optimistic about it.

When it comes to the willingness to the adoption of Bitcoin ATM, 48.1% (74) of the sample don’t want to use it, 24% would like to use it and 27.9% maybe will use it in the future. In general, the potential adoption of Bitcoin ATM among the current cryptocurrencies users is not considered very high. The main reasons could be that the Bitcoin ATM has not provided too many attractive functions that could persuade users to choose them over other methods. Some of the respondents have also mentioned that the price instability has made it unreliable to make a transaction on the ATM, as the volatility made the exchange rates vary and change often.

4.1.3 Sentiment analysis

Above are all the descriptive analyses among all the respondents who have used cryptocurrencies. As the author has included many open questions and partially open questions which made it hard to present and conclude all the answers collected. Therefore, some sentiment analyses were conducted by automation via computer coding using the software R-studio. Its concept is based on the embedded Lexicon to analyse a piece of text and identify if the attitude towards the subject matter is positive, negative or neutral. 3 Lexicons are available within the system, which are AFFIN, NRC and Bing. They have different numbers of words and definitions to identify the words to be negative or positive. The sentiment analysis will be based on the following questions.

The sentiment analysis will be done by identifying positive and negative words. The answers for each of the 11 above-mentioned questions were analysed individually. The result for each question is shown in the following graphs. A certain number of words are being grouped and analysed together. The bar shows the overall positive and negative sentiment of each group by using the number of positive words minus the number of negative words. Bars going above the zero axis indicate more positive words in the specified group of words which is represented in green; bars going below the zero axis indicate more negative words which is represented in red. The taller the bars, and the stronger the sentiment is.

- Q1: What are the reasons you use these coins often? (Network, price, speed, cost...)

For Q1, all the bars presented in green, meaning the sentiment for answers for Q1 is generally positive. Most users will choose to use a certain coin for some good points or advantages about it.

- Q3: What attracted you to adopt cryptocurrency initially?

For Q3, all bars are presented in green. Overall, the sentiment from the answers for this question is considered very positive. Therefore, we can tell the respondents were mostly attracted by the positive features or functions of cryptocurrency.

- Q4: What are the reason(s) for you to use cryptocurrency for transactions/transfers?

Similar to Q1 and Q3, the respondents mostly gave relatively positive words when answering this question. As other digital payments provided by banks and third parties have already made transactions very convenient, these crypto users are still willing to adopt and use cryptocurrency, from which we can assume that to some extent the respondents find some of the features of cryptocurrencies are more beneficial to them.

- Q5: what are the difficulties you faced during the usage of cryptocurrency?

As this question is about difficulties, the collected words generally express negative sentiments. Hence, the graph shows the bars all in red.

- Q6: What improvements do you think are necessary when it comes to using cryptocurrency?

This question has provided options for respondents to choose, as well as allow them to write freely if they have other opinions. Considering they gave a better proposal regarding the problems that they think needed to be improved. Therefore, the answers were mostly detected as positive words. Thus, the graph shows all green bars.

- Q7: In your opinion, what are the advantages of using cryptocurrency compared to traditional payment methods (bank and third-party payment methods)?

For Q7, both green bars and red bars appeared, indicating a mixture of positive, negative and neutral sentiments. The reason for this situation is firstly, because some users regard some of the negative points, for example, high volatility/instability as an advantage for cryptocurrency, possibly it helps them benefit in trading activities. The second reason is that some users just

don't think cryptocurrencies have an advantage over traditional payment methods. Therefore, they just gave the drawbacks of cryptocurrencies or a neutral comment instead.

- Q8: In your opinion, what are the disadvantages of using cryptocurrency compared to traditional payment methods (bank and third-party payment methods)?

As analysed before, most of the users think cryptocurrencies need improvements in many ways. Thus, there are still many disadvantages and drawbacks. Disadvantages are usually expressed with negative words. Therefore, the graph shows a very negative sentiment.

- Q9: What's your opinion on the future of cryptocurrency as a payment tool?

For Q9, this question is neutral, the given choices included both positive and negative possibilities. From the results shown in the graph, overall, the negative sentiment is stronger than the positive sentiment. We can assume that many people think cryptocurrencies might be abused and the development can possibly go to an incorrect direction.

- Q10: Would you like to use Bitcoin ATMs in the future? Why?

For Q10, some users are interested in or like the concept of Bitcoin ATM, and some users think they are not attractive or will have more potential scams etc. The answers are mixed with both negative and positive sentiments. However, we can observe that the green bars are slightly higher than the red ones when compared closely.

- Q11: What's your opinion on the future of the cryptocurrency market? (Valuation, as legal tender, etc...)

This question doesn't have options and gives open access for the respondents to comment, and the results are bilateral. Positive and negative sentiments almost take the same proportion. The majority thinks cryptocurrencies still have drawbacks and need improvement for better development.

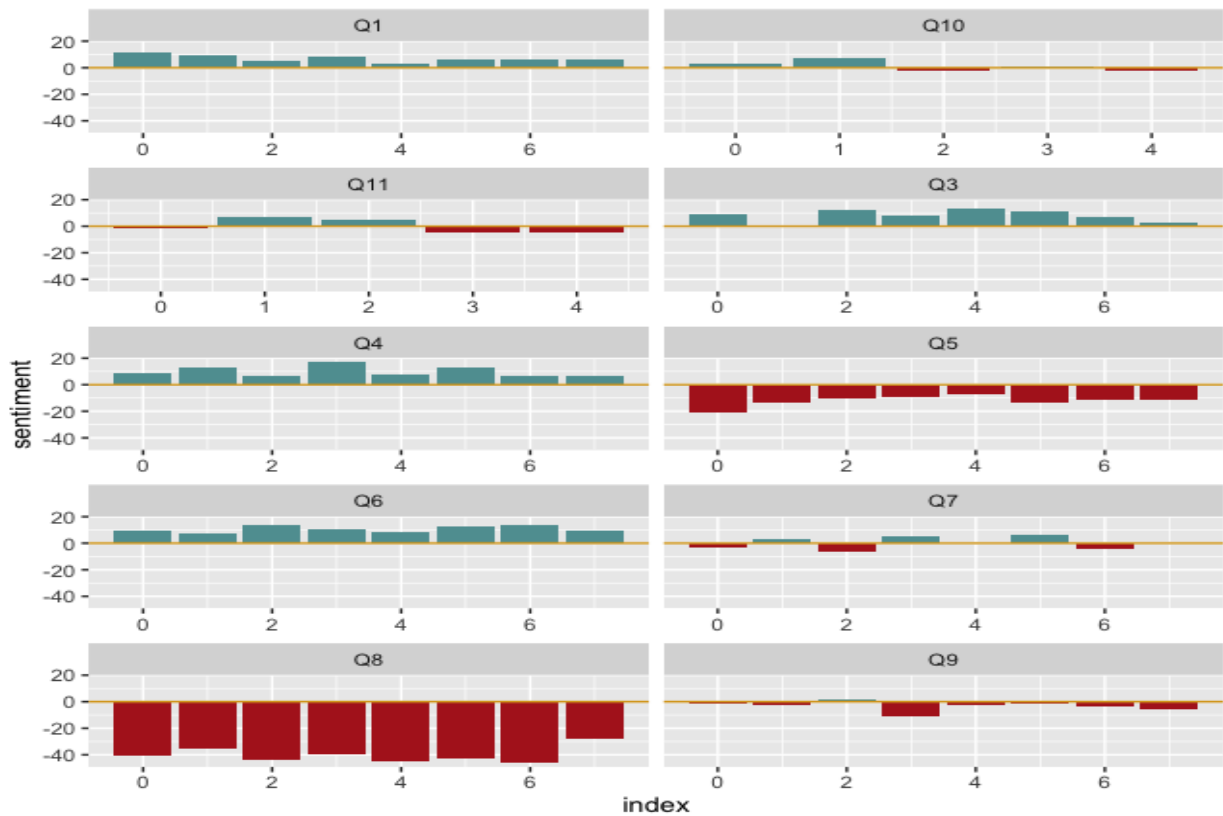


Figure 4-10: The sentiment analysis for the answers of the 10 questions

As previously mentioned, there are 3 Lexicons (AFFIN, NRC and Bing) available to do the sentiment analysis. These 3 Lexicons incorporate different numbers and definitions of positive and negative words, which resulted in different scores. In order to have a more persuasive result. Here shows a comparison of the results of the analysis done by these 3 Lexicons regarding the 11 questions.

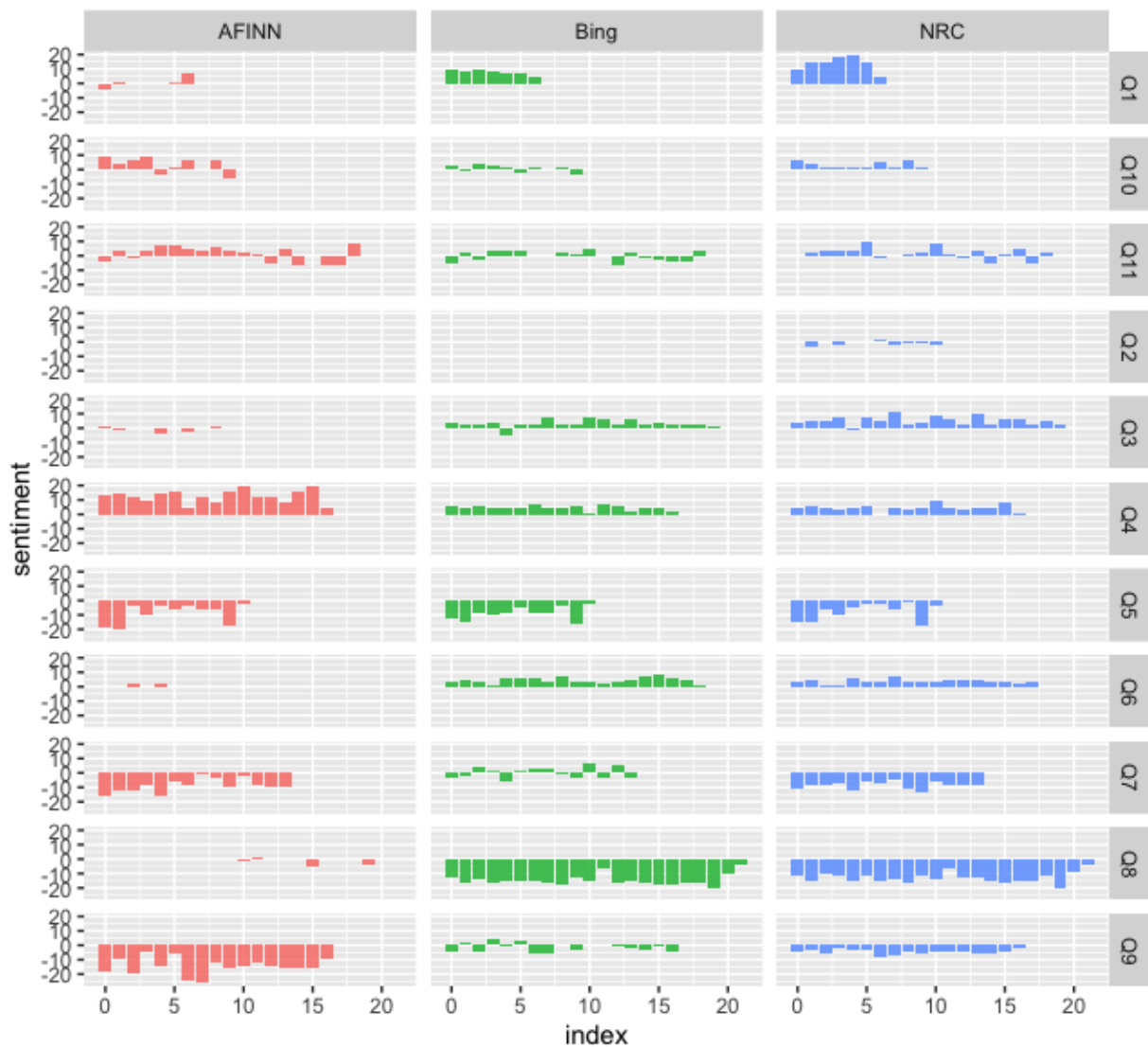


Figure 4-11: The sentiment analysis from AFFIN, NRC and Bing dictionaries

We can make a general conclusion here that the attitudes of the answers from the respondents towards Q1, Q3, Q4, Q6, and Q10 are positive; towards Q5, Q7, Q8, and Q9 are negative. The results obtained from the 3 dictionaries don't have much inconsistency. The general sentiment showed is basically the same, however, height of the bars varies mainly because of the different capacities of words of the 3 different dictionaries.

Apart from getting a general image of all the respondents' attitudes. The sentiment analysis can also detect frequently used words. The following shows the most used positive and negative words by analysing with Bing dictionary.

Frequency of the most used positive and negative words

Number of times a word is referred and the sentiment associated with it

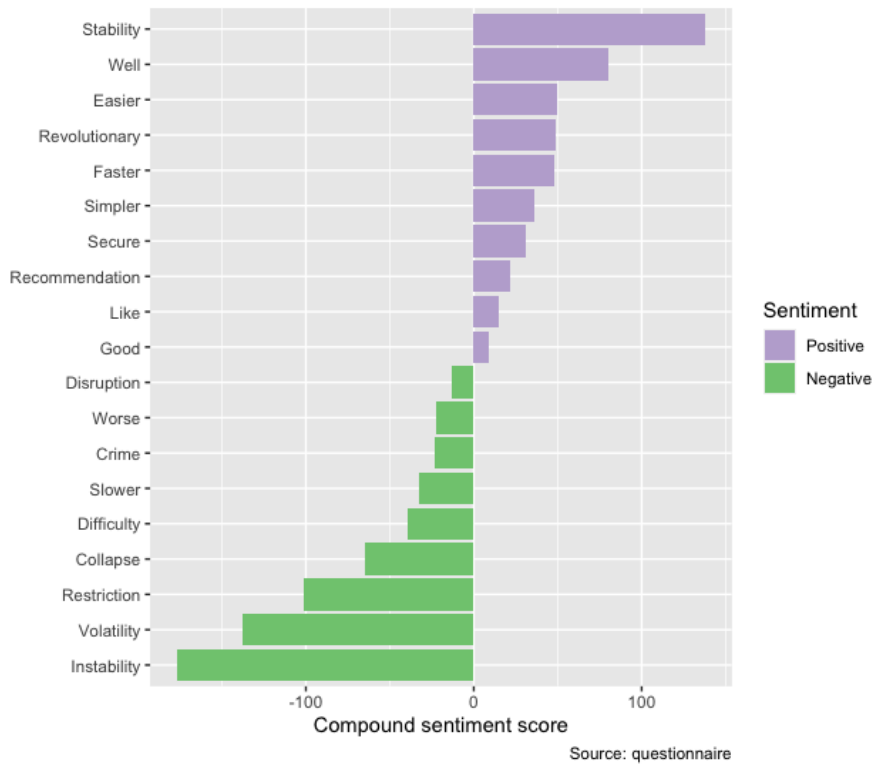


Figure 4-12: Frequency of the most used positive and negative word in sentiment analysis

We can say the strong comments on cryptocurrency's drawbacks are about its instability and volatility and then its restrictions and difficulty to use. Nevertheless, the strongest sentiment on cryptocurrency's merits is about its stability and revolutionary technology, and then it's about the faster and simpler process. Stability of cryptocurrencies is always a big concern for a lot of users, although few users consider instability as an advantage.

Additionally, this sentiment analysis can also detect the sentiment of the words and the following graph shows the detection of the frequency of certain sentiments which is conducted by the NRC dictionary.

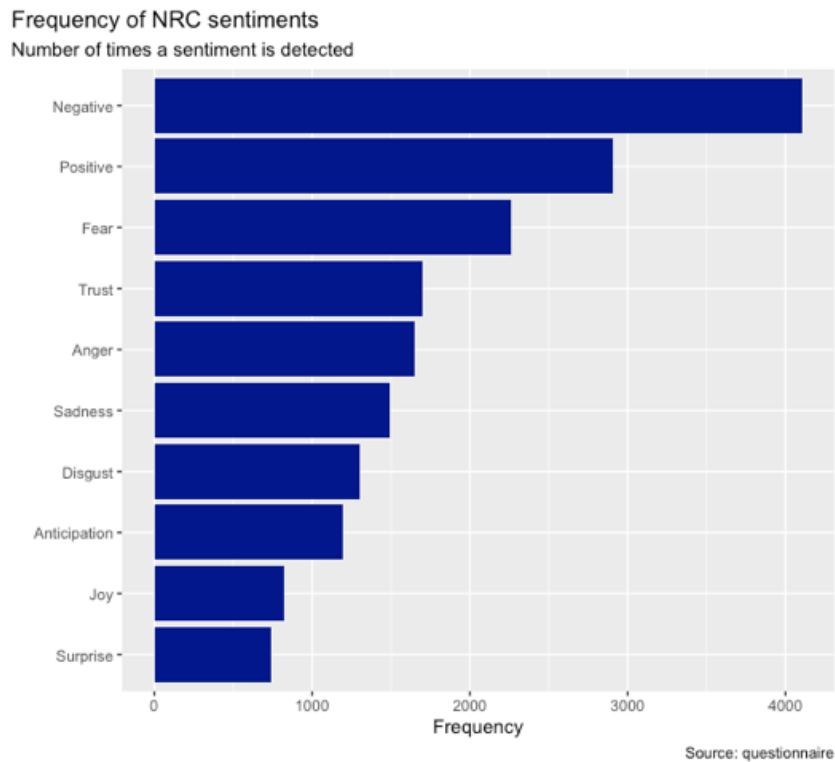


Figure 4-13: Frequency of NRC sentiments

Among all the pieces of texts, except positive and negative sentiments, fear, trust, anger, sadness, disgust and anticipation are all common sentiments for some crypto users. Combine what we have analysed before, we can assume the fear is for frauds and price instability, trust is for record transparency and anonymity, anger sadness and disgust could be about less availability, restrictions and complexity in using etc.

4.2 Group 2 analysis

4.2.1 Samples characteristics

Group 2 consists of 209 respondents who have knowledge about cryptocurrencies yet haven't adopted them. The sample characteristics share similar attributes as group 1. Most of the respondents in Group 2 are also male residing in the USA, between the age of 18-45, who received a university education and make more than 3000 dollars per month. They use credit/debit cards the most for payments, rarely use cheques, use cash occasionally and used third-party payment often. Most of them have never made international transactions, for those who have transferred money abroad mostly conduct international transactions a few times a year through banks and some of them use third-party payment.

Although Group 2 have never used cryptocurrency but many of them have good knowledge about cryptocurrency and know where to get them, yet the majority don't know how the transaction works with cryptocurrencies.

4.2.2 Findings

The main reasons that Group 2 don't want to adopt cryptocurrencies are because of fear of the high volatility of cryptocurrencies, no need to use them, fear of potential scams and don't know how to use them. This question allows respondents to have *multiple options*.

What are the reason(s) that you don't use cryptocurrency?

209 responses

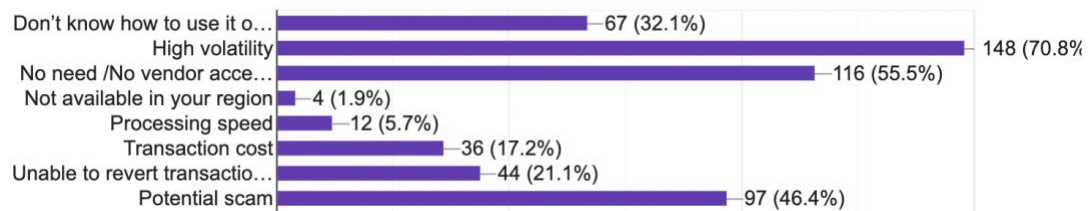


Figure 4-14: Answers for the question "What are the reason(s) that you don't use cryptocurrency?" for Group 2

The features that may attract them to adopt cryptocurrency are simplicity for international transactions, security, low transaction fees and anonymity. Therefore, improving the cryptocurrencies from these aspects can possibly help the developer get more users.

The respondents in Group 2 generally think cryptocurrencies need to improve their price stability, regulation, procedures in using and trading, and their availabilities in different regions and industries.

Regarding the advantages and disadvantages of cryptocurrencies compared to traditional payment methods (Bank and third-party payment), most respondents think the advantages are in term of providing anonymity, fewer restrictions, and transparency. some people also think cryptocurrencies have faster speed, lower cost and simpler process. And for disadvantages, almost 80% of group 2 all consider high volatility as its disadvantage, other disadvantages are less availability and non-revertible transactions. Some also think cryptocurrencies have an unstable network, slower speed and higher cost. It is worth noting that some people regard anonymity as an advantage of cryptocurrency, however some regard it as a drawback. This point has been controversial as anonymity could provide convenience for illegal activities. And this could be one of the reasons why many people think cryptocurrencies will be abused more in the future and lead to a wrong direction for its development.

If the respondents in group 2 adopt cryptocurrency, they would like to use for e-commerce and investment the most, followed by international transactions, face-to-face payment and then virtual gaming. Results shows below.

Table 4-22: Answers for the question “If you were to adopt cryptocurrencies, what kind of activities would you like to use them for?” for Group 2

Activities	Number
E-commerce / Online store payment	122
Face to face payment	51
International transactions or transfers	76
Others	17
Trading/Investment	93
Virtual gaming	36
Grand Total	395

Table 4-23: Answers for the question “Do you think cryptocurrency payment can be more popular, in the coming future?” for Group 2

Answer	Number
Maybe	78
No	47
Yes	84
Grand Total	209

Table 4-24: Answers for the question “Are you willing to know more about using cryptocurrency? (Technology or usage)” for Group 2

Answer	Number
Maybe	42
No	47
Yes	120
Grand Total	209

From the result of the above 3 questions, we can tell only 22.5% of Group 2 assertively believe cryptocurrencies won’t become bigger and they also don’t want to know more about cryptocurrencies. Yet 40.2% believe it will be more popular and 57.4% are willing to know more about cryptos. Therefore, in general, people aren’t resistant to getting to know more about cryptos.

In relation to the potential situation for cryptocurrencies in the future, 62.7% believe they can be more regulated, and some people think the market will be expanded by the increase of users and being applied in more industries. However, 53.6 % think there is a possibility for it to collapse and 25.4% expect it will be used more for illegal activities.

Regarding Bitcoin ATM, since these respondents have not adopted cryptocurrency yet, therefore the need to use Bitcoin ATM will be very low, almost 60% have heard about Bitcoin ATM, however, only 12% would like to try it.

5 Conclusion

The main purpose of this study is to understand the current cryptocurrency users' experience and people's attitude towards cryptocurrency under the current situation, as well as for its future development. To achieve these goals, we will need to explore the problems of cryptocurrency and highlight its advantages, which can be done and be meaningful through comparison with traditional payment methods from the perspectives of both cryptocurrency users and non-cryptocurrency users. To reach a conclusion, I will refer to the existing literature and the results from the survey.

People tend to use credit/debit cards more often for their daily payments because of convenience, ease, and familiarity. Cheques is the least used method. Cryptocurrencies although don't have a lot of regular users, many people have started accepting it as a payment method. On the contrary, cash has stopped being used by many users.

Less than half of the sample makes international transactions. Bank is the most preferred method for these people, cryptocurrencies, and third-party international transaction tools (West Union, MoneyGram) are used by other users, almost in an even proportion. The functions of international transactions of cryptocurrencies are being utilised. When we look at the results of the survey, there is a high possibility that cryptocurrency payments can be used more than third-party transfer tools in the long run. However, banks far overweigh cryptocurrency's popularity in terms of international transactions. As concluded from the survey, cryptocurrencies currently work more like financial instruments than currencies.

Approximately half of users have used cryptocurrencies for more than 2 years. We can assume that they are experienced regarding usage, The majority proportion of the rest of users have at least 6 months' experience. The comments and attitudes of them on cryptocurrencies can reflect the real experience. Popularity is the most important factor when a person opts for the cryptocurrency coin. Considering the popularity factor, Bitcoin (BTC) and Ethereum (ETH) are the most used cryptocurrencies. Among all the cryptocurrency users, the majority adopted it initially for making a profit, and are using it for investment/trading purposes. This can explain why some people lay emphasis on popularity, which indicates a phenomenon that some users tend to ignore other intrinsic aspects in terms of background, cost, speed, and its backup technology. We can correlate this to the US Dollar for popularity index as it is the most traded currency in the world on the Forex Market (Galeshchuk & Mukherjee, 2017). This mentality can sometimes lead to elaborate scams where developers overhype the coin and eventually it turns out to be a Ponzi scheme. A similar situation has occurred in the past few months with the coin Terra (Luna) from 120\$ to almost 0\$ within a week (Briola et al., 2022).

Apart from trading, cryptocurrencies have mostly been used for E-commerce. Non-cryptocurrencies users, when asked about the adoption of cryptocurrencies, said that if they were to adopt cryptocurrencies, they would mostly anticipate using them in E-commerce and international

transactions. This showcases a huge potential for cryptocurrency to be adopted for both online shopping and international transactions.

Regarding the advantages and disadvantages of cryptocurrencies in comparison with traditional payment methods, apart from anonymity and transparency with its unique features, many people found that cryptocurrencies have fewer restrictions, faster speed, and lower cost. However, almost the same number of users think otherwise. As discussed in the literature review, the speed and cost vary with different coins. Therefore, we can't draw a conclusion, but apparently it is possible for users to find coins that have a cheaper and faster transaction speed.

One quarter of the cryptocurrency users found it relatively easy to use cryptocurrencies. However, there are still a lot of existing difficulties for the rest of users. Namely the procedure of transfer, to purchase and to sell, and government restrictions. We can observe that technical problems in the network rarely happen to users. Another severe problem is the high volatility. People strongly suggest cryptocurrencies need to improve their price stability, as well as the lack of regulations, which makes many users afraid to engage in long-term adoption. Regulation will play a key factor to guarantee stability. Therefore, improving simplicity of transactions and price stability are the most significant challenges to be overcome on the way of being adopted as a transaction tool.

Regarding the future of cryptocurrencies, although many users have shown concerns of a possible collapse and misuse of illegal activities, the majority still believe they will be more regulated and be adopted more. Current cryptocurrency users are willing to continue using them and many of them would like to recommend it to others. Non cryptocurrency users would like to learn more about cryptocurrencies and are willing to adopt them if the process of using them becomes simpler. Therefore, we can expect an increasing number of cryptocurrency users in the future.

While the popularity for cryptocurrency is growing, so are the risks. Apart from the potential financial loss attributable to the volatility of cryptocurrency. People should also pay attention to potential fraud and cybercrime through manipulation. Education of cryptocurrency is necessary, especially for new users, before adopting them. From the results of the survey, there are more than 30 cryptocurrency platforms and more than 10,000 coins available in the market (Setyono et al., 2022). It's important to identify reliable platforms and coins to avoid unnecessary loss. In addition, some people have shown their gambling psychology when asked the reasons for using cryptocurrencies. It is worth paying attention to mental health while using cryptocurrencies.

5.1 Practical implications

This study has found out the advantages and difficulties of using cryptocurrencies, and the activities that people are using and would like to use for in the future, as well as people's concerns and their expectations. The result can provide insight to the developer of cryptocurrencies to be aware of the current drawbacks of usage that can be improved to enhance the users' satisfaction and for better

development. It can provide education to the potential cryptocurrency users and alert them to the risks. It can also help corporate or businesspeople to notice the trend of cryptocurrency adoption and possible business opportunities, especially in E-commerce and face-to-face payment. Moreover, it can help the regulator in understanding the main worries from the users and their expectations, especially about price stability.

5.2 Limitation

There are 3 main limitations to this dissertation

Although there is a wide variety in terms of region in the sample, the demographic is not evenly distributed in geographic location, as 75% of the sample are residing in the USA. The results, therefore might be biased and can mostly represent the situation of cryptocurrency in the USA.

As the main purpose of this thesis is to find out people's attitude toward cryptocurrencies, qualitative analysis accounts for the most important place, thus a lot of questions concerning sentiment were asked. To avoid a wide variety of answers, many questions were given options in order to make the data analysis less complex. However, the author didn't consider certain possible options when designing the questionnaire and was also not able to include all the possible options. Additionally, the given options might affect the respondents' initial judgement.

During the sentiment analysis, the dictionaries don't include privatives and intensifiers won't have effects. For example, the answer "not stable" will be detected as positive because of the positive word "stable", "not" won't be detected and the relationship between "not" and "stable" won't be captured. Therefore, it has an impact on the numbers of positive and negative words, which further affects the score of the sentiment analysis.

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Appendix

Questions for the survey:

1. Do you know what cryptocurrencies are?
2. Have you ever used cryptocurrency to make a transaction or payment? (Including trading/investment)
3. What's your country of residence?
4. What's your age?
5. What's your gender?
6. What's your education level?
7. What's your monthly gross income level?
8. How often do you usually use the following payment method?
9. How do you usually transfer/receive money internationally?
10. Why do you use this/these methods the most?
11. How often do you make international transactions?
12. How long have you been using cryptocurrency?
13. How often do you use cryptocurrency to make a transfer/payment?
14. Which platform(s) do you usually use?
15. What is the coin that you use the most often?
16. What are the reasons you use these coins often? (Network, price, speed, cost...)
17. What's the average amount you usually make transactions/transfers for, with cryptocurrency?
18. What kind of activities have you used cryptocurrency for?
19. What attracted you to adopt cryptocurrency initially?
20. What are the reason(s) for you to use cryptocurrency for transactions/transfers?
21. Do you like the experience of making transactions/transfers with cryptocurrency?
22. How easy is it to conduct transactions/transfers with cryptocurrency?
23. What are the difficulties you faced during the usage of cryptocurrency?
24. What improvements do you think are necessary when it comes to using cryptocurrency?
25. In your opinion, what are the advantages of using cryptocurrency compared to traditional payment methods (bank and third-party payment methods)?
26. In your opinion, what are the disadvantages of using cryptocurrency compared to traditional payment methods (bank and third-party payment methods)?
27. What's your opinion on the future of cryptocurrency as a payment tool?
28. Will you continue using cryptocurrencies? And why?
29. Will you recommend cryptocurrency payment to others?
30. Have you ever heard about Bitcoin ATM?

31. What do you think of the concept of Bitcoin ATMs (deposit/withdraw local currency into/from a wallet at an ATM)? And why?
32. What's your opinion on the future of cryptocurrency market? (Valuation, as legal tender, etc...)
33. How well do you know about the concept and technology of cryptocurrency?
34. Do you know how/where to get cryptocurrency?
35. How well do you know to use cryptocurrency to make transactions/transfer?
36. What are the reason(s) that you don't use cryptocurrency?
37. Which of the following features will be attractive for you to use cryptocurrency?
38. What improvements do you think are necessary when it comes to using cryptocurrency?
39. From your knowledge, what are the advantages of using cryptocurrency compared to traditional payment methods (bank and third-party payment methods)?
40. From your knowledge, what are the disadvantages of using cryptocurrency compared to traditional payment methods (bank and third-party payment methods)?
41. If you were to adopt cryptocurrencies, what kind of activities would you like to use them for?
42. Do you think cryptocurrency payment can be more popular, in the coming future?
43. Are you willing to know more about using cryptocurrency? (Technology or usage)
44. Would you like to try to use cryptocurrency for transactions/transfers in the future? And why?
45. Would like to use Bitcoin ATMs in the future? And why?