INVESTOR ATTITUDES TOWARDS CRYPTOCURRENCIES

Riku Antikainen

International Business
Bachelor's Thesis
Supervisor: Can Inci
Date of Approval:

Aalto University
School of Business
Bachelor’s Program in International Business
Mikkeli Campus
INVESTOR ATTITUDES TOWARDS CRYPTOCURRENCIES

Riku Antikainen

International Business
Bachelor's Thesis
Supervisor: Can Inci
Date of Approval:

Aalto University
School of Business
Bachelor’s Program in International Business
Mikkeli Campus
### Objectives

The main objectives of this study were to identify investor attitudes towards cryptocurrencies and analyze their effect on how likely investors were likely to invest into cryptocurrencies and with what amount. Additionally, the effect of age and gender on investor attitudes towards cryptocurrencies was measured.

### Summary

Investor attitudes on cryptocurrencies was surveyed, with an aim to clarify the views of investors, to measure the views and analyze how they might affect their willingness to invest into cryptocurrencies.

### Conclusions

The research done shows that the investor’s perceived profitability, usefulness, and trustworthiness had the highest correlation with whether they had invested into cryptocurrencies and how much they had invested into them.

### Key words: 
Cryptocurrencies, Behavioural Finance, Blockchain, Fintech, Digital Currency

### Language: 
English

### Grade:
# OUTLINE

1. INTRODUCTION .................................................................................................................. 1
   1.1. Background .................................................................................................................. 1

2. LITERATURE REVIEW ........................................................................................................ 3
   2.1. Introduction .................................................................................................................. 3
   2.2. Market Size and Investing Prospects ................................................................. 4
   2.3. Attitudes and Attention ............................................................................................... 5
   2.4. Legislation .................................................................................................................... 6
   2.5. Popular Cryptocurrencies ......................................................................................... 7
      2.5.1. Bitcoin .................................................................................................................. 7
      2.5.2. Ethereum ............................................................................................................... 8
      2.5.3. Solana and Ripple ................................................................................................. 9
      2.5.4. Tether .................................................................................................................. 10
   2.6. Non-Fungible Tokens (NFTs) ..................................................................................... 10

3. METHODOLOGY ................................................................................................................ 11
   3.1. Sampling ...................................................................................................................... 12
   3.2. Data .............................................................................................................................. 13
      3.2.1. Gender Distribution of Survey’s Investors ......................................................... 14
      3.2.2. Age Distribution of Survey’s Investors ............................................................. 14
      3.2.3. Country of Residence Distribution of Survey’s Investors .............................. 15
      3.2.4. Self-rated Investing Knowledge of Survey’s Investors ..................................... 16
      3.2.5. Risk Tolerance of Survey’s Investors ................................................................. 17
4. FINDINGS & ANALYSIS .................................................................17
4.1. Perceived Profitability of Cryptocurrencies ..............................18
4.2. Perceived Usefulness of Cryptocurrencies ...............................19
4.3. Perceived Trustworthiness of Cryptocurrencies ..........................19
4.4. Perceived Risk to Reward Ratio of Cryptocurrencies ................20
4.5. Perceived Riskiness of Cryptocurrencies .................................22
4.6. Summary .............................................................................22
5. Conclusion .............................................................................23
5.1 Main Findings .......................................................................23
5.2. Implications for International Business .................................23
5.3. Suggestions for Further Research ...........................................24
REFERENCES ...........................................................................24
APPENDIX ...............................................................................28
1. INTRODUCTION

1.1. Background

Cryptocurrencies are a new global phenomenon, that might have the potential to someday affect the lives of everyone but mass adaptation like that is most likely going to need a very positive attitude towards the subject among individuals and organizations alike.

Investor attitudes also affect cryptocurrency prices and how the cryptocurrency market grows over time (Aggrawal et al., 2019), by October 2020 the market capitalization of cryptocurrencies had already reached over 400 billion dollars (Panos and Karkkainen, 2020) which tells us that large sums are at play. Being able to estimate market capitalization growth of cryptocurrencies by measuring investor attitudes could be a great asset to more technical investors.

1.2. Research Problem

The field of cryptocurrencies is very new and there is yet to be much research done. Given the adolescent and trendy status of the field, it is also one that evolves quickly so the research done is quickly outdated. Cryptocurrencies have introduced new phenomena into the field of finance, which have not been studied extensively. Their implications are also yet to be discovered.

Cryptocurrencies are widely discussed but investor attitudes towards them are yet to be widely studied. Investor attitudes may be a significant factor on how the price of a financial evolves over time and therefore it could be possible
that measuring investor attitudes could be used to estimate how the market capitalization of cryptocurrencies is going to evolve.

1.3. Research Questions

1. What variables affect the willingness to invest into cryptocurrencies?
2. How do cryptocurrency attitudes differ between investors of different gender or age groups?
3. Do investors in general have a positive or negative attitude towards cryptocurrencies?

1.4. Research Objectives

The main research objectives of this research are to:

1. Identify variables that affect the willingness to invest into cryptocurrencies
2. Measure if attitudes towards cryptocurrencies vary between investors of different gender or age groups
3. To investigate the general attitude of investors towards cryptocurrencies

1.5. Definitions

Cryptocurrency refers to a digital asset which has its transactions registered to a modern cryptography system called “Blockchain”.
Blockchain is a cryptography-based system that registers transactions into blocks that can communicate with each other. The blockchain is often fueled by a Proof-of-Work or a Proof-of-Stake validation method.

Proof-of-Work (PoW) was the first validation method available for blockchains. It requires a network of computers that use processing power to keep the blockchain running. PoW can run into scalability issues due to the processing power needed.

Proof-of-Stake (PoS) was the second major validation method available for blockchains. It may tackle some scalability issues that PoW has due to not relying entirely on processing power, but validator nodes containing cryptocurrency that owners have staked instead.

2. LITERATURE REVIEW

2.1. Introduction

The purpose of this literature review is to explore the potential of blockchain technology, with a focus on the field of finance. Due to the field of cryptocurrencies being new and rapidly evolving, more emphasis is put on studies that more recent so that the review can give a more accurate view on what the field is like now, not in the past. Notably the newness of the field some of its most fresh topics, such as NFTs have little literature written and therefore some of these topics cannot be reviewed in depth. This literature review follows the following order: firstly, we review literature on the state of the cryptocurrency market, followed by factors affecting it and lastly, we dissect the types of players the market consists of.
2.2. Market Size and Investing Prospects

The market capitalization and number of cryptocurrencies has experienced tremendous growth in the past few years. In October 2019, there were more than 2000 individual cryptocurrencies with the market capitalization totaling about 222 billion USD (Zhang and Gregoriou, 2020). By the beginning of 2020, more than 5100 individual cryptocurrencies existed, while the cryptocurrency market capitalization reached over 250 billion USD (Pravdiuk, 2021). In October 2020, the market capitalization had increased to over 400 billion USD (Panos and Karkkainen, 2020). This signifies that the industry is in a phase of rapid growth and that the market could be far from reaching maturity.

Researchers have found various variables that could affect the performance of the cryptocurrency market. According to a comprehensive study by Sovbetov (2018) consisting of 8 years of weekly data, the most significant market-related factors that affect the growth and price of cryptocurrencies are market beta, trading volume and market volatility in the short- and long-run. The attractiveness of cryptocurrencies seems to also matter, but only in the long run. One unit increase in weekly trading volume caused 0.14 increase in the price of Bitcoin in the long-run, one unit increase in market volatility caused 0.15 drop in the price of Bitcoin and one unit increase in the attractiveness of Bitcoin leads to a 1.27 increase in the price of Bitcoin (Sovbetov (2018). Unsurprisingly, the attractiveness, which contains various positively loaded variables, is the most influential variable out of the three that might affect the price of Bitcoin.

Aggrawal et al. (2019) has identified the factors that could influence the growth and price of cryptocurrencies. These are government regulations and personal perceptions. These factors partially support the results of the study conducted by Sovbetov (2018), which indicate that attractiveness of
cryptocurrencies could be a significant pointer on how the price of cryptocurrencies might evolve in the long run.

The attractiveness of cryptocurrencies, from a purely investment point of view, is further studied in a study with a sample period from August 2013 through January 2019, by Inci and Lagasse (2019). Their findings show that cryptocurrencies can be a great tool in improving one’s portfolio performance and that at least at the time of the study it was beneficial, in terms of risk to reward ratio, to include all the top five cryptocurrencies into one’s portfolio. Findings of the study also show that cryptocurrencies have rewarded higher returns in comparison to traditional asset classes, which further supports the claim that the cryptocurrency market is still in a phase of rapid growth and is yet to reach maturity.

2.3. Attitudes and Attention

As mentioned before, personal perceptions influence how the cryptocurrency market and its prices grow over time (Aggrawal et al., 2019). The study conducted by Aggrawal et al. (2018) also found that cryptocurrencies have gained significant attention from 2014 to 2018. Lin (2020) also noted the same phenomenon. Personal attitudes towards cryptocurrencies guide the way this attention culminates and how it ends up affecting the market. Interestingly, the most popular cryptocurrencies seem to have similar attention patterns, which implies that investor attention is divided and not targeted on just one cryptocurrency, such as Bitcoin (Lin, 2020).

Financially literate investors are less likely to be willing to invest into cryptocurrencies, while digitally literate investors are more likely to invest into cryptocurrencies (Panos and Karkkainen, 2020). Due to the high volatility and the perceived high financial risk involved, financially literate investors are
significantly less likely to intend becoming cryptocurrency owners or to already own cryptocurrencies in comparison to financially illiterate investors (Panos & Karkkainen, 2020; Sovbetov, 2018). An increase of one standard deviation in financial literacy score decreased the probability of owning cryptocurrencies by 3.71 percentage points, it increased the probability of having no intention of holding cryptocurrencies in the future by 22.7 percent and notably it also decreased the probability of never having head of cryptocurrencies by 18.8 percent (Panos and Karkkainen, 2020). It can be concluded that the financially literate are more likely to know about cryptocurrencies, but they are much more likely to have positive view about investing into them, which could be considered foolish when considering the findings of the study conducted by Inci and Lagasse (2019) which implies benefits in including cryptocurrencies into one’s portfolio.

2.4. Legislation

Currently the legislation of cryptocurrencies is vague, unharmonized and lacking in many regards. The cryptocurrency field needs a regulatory framework, which can promote optimal circulation for cryptocurrencies, promote the construction of forward-looking cryptocurrency businesses and to protect the financial system (Kołodziejczyk and Jarno, 2020; Pravdiuk, 2021; Schaupp and Festa, 2018). Well-crafted legislation could also prevent cryptocurrency-related fraud, price manipulation and improve the financial security of cryptocurrency developers and users alike. This could also aid in decreasing the volatility of the cryptocurrency market and through that, improve investor attitudes.

An example of the effect legislation can have on the field is when in September 2017 China banned buying and selling cryptocurrencies, setting prices for cryptocurrencies and converting legal tender into cryptocurrencies.
This caused significant decrease in the regularly abnormal returns in the 100 largest cryptocurrencies at the time, a decreased liquidity level and a dramatically decreased trading volume (Zhang and Gregirou, 2020). This example is support for government regulation being majorly influential in the growth and price of cryptocurrencies (Aggarwal et al., 2019). However, unpredictable government decisions can have negative impacts on the cryptocurrency market and decrease market potential.

The lack of regulation can also be a major motivator for many investors to buy cryptocurrencies, but for the benefit of a regular investor, the market is currently unable to self-regulate, which is why the protection of government regulation could be beneficial for the field. Furthermore, given the fact that cryptocurrencies are also used for money laundering, financing terrorists and tax evasion and that the legal essence and the legal content of cryptocurrencies is mostly unstudied in the field of legal science, the study of legal problems regarding regulation of cryptocurrencies is urgent (Pravdiuk, 2021). Providing a legal framework would promote the perspective that cryptocurrencies are viable investments, while also aiding in minimizing the criminal activity connected to the cryptocurrency market.

2.5. Popular Cryptocurrencies

2.5.1. Bitcoin

A paper by an unknown individual or organization, Nakamoto (2008), proposed a system for electronic transactions without relying on not trust, but market forces instead. This proposed system of electronic transactions is what we currently know as the original blockchain, and the currency built on top of it as Bitcoin. The blockchain on which Bitcoin operates is run by a Proof-of-Work (PoW) consensus mechanism that has received critique from both academics and media.
PoW requires miners to invest into advanced computer machines that consume energy constantly (Sovbetov, 2018). The computers are solving a difficult hashing algorithm, SHA-256, which is made harder to solve as more people are trying to solve it, which makes the system consume exponentially more energy, making growth of the system unsustainable by nature. This causes serious scalability issues to the system due to an even small improvement into the speed of the blockchain consensus mechanism function needing a considerably large amount of energy. The Bitcoin blockchain can process seven transactions per second (TPS), whereas payment systems like VISA have a processing power of up to 56,000 TPS (Bez, Fornari and Vardanega, 2019; Chauhan et al., 2018). This scalability issue makes Bitcoin much less usable as a currency since with the low TPS and high demand can result in transactions taking upwards of 20 minutes to process (Dumas et al., 2021).

Truby et al. (2022) pointed out a more dire critique of Bitcoin at its outdated processing consensus, according to their study Bitcoin is 10 times more polluting than Ethereum, which in quantitative terms means a single transaction on its consensus protocol causes 842.51 kg of CO2 emissions, whereas Ethereum’s protocol causes 85.47 kg. It is estimated that due to this inefficiency Bitcoin is responsible for 18,818 unnecessary future deaths every year as of October 2021.

2.5.2. Ethereum

Ethereum is a community-driven, open-source software project founded by Vitalik Buterin in 2013. According to Buterin (2013), Ethereum protocol was built with the intention of becoming an advanced version of cryptocurrency. Some advanced features Ethereum was able to provide are smart contracts, blockchain escrow and withdrawal limits. Like Bitcoin, Ethereum has major issues with scalability because it suffers from a flaw that every transaction
needs to be processed by every node in the network. Ethereum needs an even higher TPS capability than Bitcoin, due to the applications built on top of it also consuming TPS.

Ethereum is capable of 15 TPS and due to this Ethereum is far from offering a viable solution for a platform that is supposed to host all transaction-based systems. The lack of scalability is what is hindering mass-adaptation of Blockchain systems and Ethereum in particular (Fornari and Vardanega, 2019). Thankfully the developers of Ethereum have also understood this fact; Ethereum is currently in the process of upgrading its consensus protocol to include sharding and Proof-of-Stake (PoS) capabilities, which is intended to increase the power of Ethereum blockchain from 10 TPS to all the way up to 100,000 TPS (Ethereum.org, n.d.). PoS allows the blockchain to be upkept by people staking their coins, meaning that as opposed to PoW, which uses speciality hardware like GPUs, PoS only requires a monetary investment into a staking pool (Fornari and Vardanega, 2019).

2.5.3. Solana and Ripple

Solana and Ripple are cryptocurrencies that have been built with the capability of high TPS in mind. As of July 2019, Ripple has been consistently capable of processing 1,500 TPS, with scalability all the way up to 65,000+ TPS (Schwartz, Youngs and Britto, 2018). Considering the date, this is a respectable achievement. The Solana mainnet beta and its whitepaper were released in the beginning of 2020 and in the mid-way of 2019 respectively. The whitepaper of Solana proposes a new blockchain consensus mechanism, which is based on Proof of History (PoH) that uses timestamps to verify order and passage of time between events. With the assistance of PoH and modern hardware, the Solana blockchain was able to reach a TPS of 710,000 (Yakovenko, n.d.). Due these achievements Solana and Ripple are great examples of how quickly the blockchain technology can evolve remarkable leaps.
2.5.4. Tether

Tether is the first stablecoin and it was released in 2014 (Kołodziejczyk and Jarno, 2020). Tether is also the largest stablecoin by volume and market capitalization (Coinmarketcap, 2022). According to Kołodziejczyk and Jarno (2020) stablecoins are cryptocurrencies, that are backed by other, comparably stable assets. Stablecoins regularly strive to maintain a stable exchange rate.

According to the Tether whitepaper (Tether, n.d.), Tether does not face any market risk, its cryptocurrency supply is pegged to USD with a ratio of one to one. However, there has been several periodical reports of Tether having severely insufficient dollar reserves to cover the peg at a ratio of one dollar for one Tether, which could explain why the exchange rate of Tether often trends downwards from the peg they have chosen (Kołodziejczyk and Jarno, 2020). Considering just the above, the price of Tether should not be worth nearly a dollar, but thanks to its technology and comparably pleasant stability Tether does provide some extra benefits that increase its appeal and thus demand. Tether is often used as a tool to convert between cryptocurrencies, to “lock in” profits after selling more volatile cryptocurrencies or as a stable “tax haven” given that cryptocurrencies are somewhat out of sight of authorities (Kołodziejczyk and Jarno, 2020).

2.6. Non-Fungible Tokens (NFTs)

NFTs are currently one of the biggest trends on the cryptocurrency market right now. Its popularity has rapidly risen since 2020 and it has also become a very popular application in the Fintech world. As of November 2021, the top five NFT art collections had already had sales of around 940 million USD (Bao and Roubaud, 2021). According to Truby et al. (2022) the volume and value of
NFT transactions had grown to 10.7 billion USD by Q3 2021, which further indicates and could somewhat explain the hype behind the NFT market.

The popularity of NFTs has also increased attention of the art market but at a cost, the proof-of-work blockchain consensus that many NFT transactions are verified by is a considerable contributor of CO2 emissions (Truby et al., 2022). It has been estimated that the CO2 emissions caused just by the proof-of-work mechanism of Bitcoin will be responsible of around 19,000 future deaths, notably this could be prevented but many popular types of blockchain have been hesitant to decrease their environmental impact (Truby et al., 2022). Due to this phenomenon, it could be argued that a completely decentralized cryptocurrency is not always the best, for a decentralized currency to change its structure it would require a majority vote of at least 51% to change the system; it can be challenging to convince the majority of people who profit from the currency to admit that the system is bad and needs to change.

According to a coherence analysis by Pinto-Gutiérrez et al. (2022), the returns of Bitcoin and Ethereum are significant factors affecting how much attention NFTs get the following week. This result indicates that the prices of major cryptocurrencies and the NFT market could be connected and a positive correlation between their performance could be found.

2.7. Conceptual Framework
This conceptual framework is mainly influenced by the findings of Pinto-Gutiérrez et al. (2022), Aggrawal et al. (2019) and Sovbetov (2018), when analyzing their findings, it can be concluded that there might be a significant connection between cryptocurrency attention, attitudes, media coverage, performance, and market size, they may all be connected, and their behaviors affect how the market size of cryptocurrencies evolves.

3. METHODOLOGY

3.1. Sampling

An unbiased sample of investors was attempted to be collected. Lack of bias is defined by a neutral attitude towards cryptocurrencies, as well as an average technical literacy. Panos and Karkkainen (2020) suggested that technical literacy is one of the key factors affecting likelihood to invest in cryptocurrencies. Due to technical literacy being a possible bias it was also important to try to get answers from as many age groups as possible,
because it could be a variable that correlates with one’s technical literacy skills. Having these factors in mind, I sent out the survey to investing groups that were likely to contain traditional investors, such as Facebook groups that had basic investing as their main topic. The total sample size used was 96.

3.2. Data

This section of the thesis discusses the data used to stem findings from and we analyze what kind of characteristics the respondents possessed. The total number of survey responses was 102. 96 of the respondents answered that they had invested before (see figure 2.), due to this thesis being an analysis of investor attitudes I have excluded the remaining 6 non-investors from the analysis. From this point forward I will be regarding the 96 investors as “survey’s investors” to make this thesis easier to comprehend.

![What Survey Respondents had Invested Into](image)

Figure 2. What asset classes survey respondents had invested into. This is the only chart that contains all 102 respondents.

Ideally the number of respondents would have been higher but due to time restraints a larger number of respondents was not able to be reached. Albeit
the number of respondents was not optimal, statistical significance at significance level of 0.05 or better was able to be reached in almost all the correlation analysis that was conducted.

3.2.1. Gender Distribution of Survey’s Investors

![Gender Distribution](image)

Figure 3. Gender distribution of survey’s investors.

The distribution of genders (see figure 3.) among the investors was somewhat healthy, 72% were male, 26% female and 2% other. The amount of both males and females allowed conclusions to be done but the amount of other was too low to derive any further analysis on their part.

3.2.2. Age Distribution of Survey’s Investors
I divided the investors to three different groups by age: below 30, between 30 and 49, and above 50 (see figure 4.). Ideally all age groups would have had more representatives and the representative distribution between the three age groups would have been even more equal than it is currently. The average age of survey’s investors was 34.05, median age 30 and standard deviation 13.48.

3.2.3. Country of Residence Distribution of Survey’s Investors
As figure 5 depicts, vast majority of survey’s investors reported Finland as their country of residence, due to this I was not able to facilitate any comparison on investor attitudes between investors living in different countries. The reason the country of origin for respondents was Finland was due the survey reaching mostly only the audiences of Finnish Facebook investor groups.

3.2.4. Self-rated Investing Knowledge of Survey’s Investors

I asked the investors if beginner, intermediate or advanced describes their investing knowledge the best. From the answers given I was able to see what the self-rated investing knowledge of the investors was (see figure 6.).

Self-rated investing knowledge had a positive correlation of 0.328 with investor age. Correlation coefficient is significant at 0.001 significance level. Older investors were more likely to report a higher level of investing knowledge.
3.2.5. Risk Tolerance of Survey’s Investors

![Pie chart showing risk tolerance distribution of survey's investors.]

Risk tolerance had a positive correlation of 0.281 with investor gender. Correlation coefficient is significant at 0.001 significance level. Male investors were more likely to report a higher level of risk tolerance. See figure 7. for a distribution on investor risk tolerances.

4. FINDINGS & ANALYSIS

In this section, the findings of the survey are outlined, the attitudes of investors are analyzed, and the results of the analysis are discussed. I asked the investors to rate the following attributes of cryptocurrencies on a scale from 1 to 5: profitability, usefulness, trustworthiness, risk to reward ratio, and riskiness.
4.1. Perceived Profitability of Cryptocurrencies

Perceived profitability of cryptocurrencies had a moderate positive correlation (0.546) with the investor having invested into cryptocurrencies and with the amount invested into cryptocurrencies (0.544). Both correlation coefficients were significant at 0.001 significance level. See figure 8. for distribution on perceived profitability ratings.

Additionally perceived profitability of cryptocurrencies had a negative correlation of -0.237 with investor age. Correlation coefficient is significant at 0.001 significance level. Younger investors were more likely to perceive cryptocurrencies as more profitable.
4.2. Perceived Usefulness of Cryptocurrencies

Perceived usefulness of cryptocurrencies had a moderate positive correlation (0.473) with the investor having invested into cryptocurrencies and with the amount invested into cryptocurrencies (0.467). Both correlation coefficients were significant at 0.001 significance level. See figure 9. for distribution on perceived usefulness ratings.

Additionally perceived usefulness of cryptocurrencies had a negative correlation of -0.306 with investor age. Correlation coefficient is significant at 0.001 significance level. Younger investors were more likely to see cryptocurrencies as useful.

4.3. Perceived Trustworthiness of Cryptocurrencies
Perceived trustworthiness of cryptocurrencies had a moderate positive correlation (0.505) with the investor having invested into cryptocurrencies and with the amount invested into cryptocurrencies (0.515). Both correlation coefficients were significant at 0.001 significance level. See figure 10. for distribution on perceived trustworthiness ratings.

In addition, perceived trustworthiness of cryptocurrencies had a negative correlation of -0.279 with investor age. Correlation coefficient is significant at 0.001 significance level. Younger investors were more likely to perceive cryptocurrencies as more trustworthy.

### 4.4. Perceived Risk to Reward Ratio of Cryptocurrencies
Perceived risk to reward of cryptocurrencies had a low positive correlation (0.371) with the investor having invested into cryptocurrencies and with the amount invested into cryptocurrencies (0.410). Both correlation coefficients were significant at 0.001 significance level. See figure 11. for distribution on perceived risk to reward ratio ratings.

Neither age and perceived risk to reward ratio nor gender and perceived risk to reward ratio displayed significant correlation.
4.5. Perceived Riskiness of Cryptocurrencies

Perceived riskiness of cryptocurrencies had a low negative correlation (-0.338) with the investor having invested into cryptocurrencies and with the amount invested into cryptocurrencies (-0.316). Both correlation coefficients were significant at 0.001 significance level. See figure 12. for distribution on perceived riskiness ratings.

Neither age and perceived riskiness of cryptocurrencies nor gender and perceived riskiness of cryptocurrencies displayed significant correlation.

4.6. Summary

Overall younger people tended to have a more positive attitude towards cryptocurrencies, across several metrics. Younger people also tended to rate their investing knowledge lower. When considering both factors, it supports the findings of Panos and Karkkainen (2020) which suggested that financial literacy had a positive correlation with likelihood of having invested into cryptocurrencies or intending to. It could also be
hypothesized that age has a negative correlation with digital literacy skills, if proven true, it would further support the findings both this thesis and the study conducted by Panos and Karkkainen (2020).

5. Conclusion

5.1 Main Findings

From within the research conducted, the best indicators for both whether a person has invested into cryptocurrencies and how much they have invested were how they perceived the profitability and trustworthiness of cryptocurrencies. All five attributes that measured investor attitudes (profitability, trustworthiness, usefulness, risk to reward ratio and riskiness) had a statistically significant correlation with the investor having invested into cryptocurrencies and the amount they had invested.

5.2. Implications for International Business

A positive attitude towards cryptocurrencies is crucial for the field to succeed. Without a positive attitude among stakeholders, such as governments, central banks, commercial banks, investors, and businesses, it is hard for cryptocurrencies to integrate deep into the world of finance. Secondly, the attitude towards cryptocurrencies gives some insight into how retail investors view the new financial asset, which is important for the development of the cryptocurrency market. The financial market is an important factor in the world of international business and there might be a possibility that cryptocurrencies can change some of the fundamentals of it.
5.3. Suggestions for Further Research

As previously mentioned, the field of cryptocurrencies is new and trendy which makes it evolve at a fast pace. Due to the fast pace of evolving, the large amount of money at play and the importance of whole financial market it is crucial that research keeps up with both the positive and negative potential cryptocurrencies might have and what implications their involvement to the financial market might bring.

REFERENCES


**APPENDIX**
Cryptocurrency Attitudes

Welcome!

I am a student from Aalto University and I am conducting research on investor attitudes toward cryptocurrencies. The answers to this survey will be saved anonymously, answering is completely voluntary and you can stop answering if you wish to do so. The data will be used for educational purposes only.

Time estimation for answering the survey is 3-5 minutes.

1. Which of these asset classes have you invested into? Choose all that apply. *
   - [ ] Stocks
   - [ ] Cryptocurrencies
   - [ ] Bonds
   - [ ] Options
   - [ ] Futures
   - [ ] Real estate
   - [ ] Mutual Funds/ETFs
   - [ ] None of the above

2. How much in total do you currently have invested into the asset classes described above? *
   - [ ] 0€
   - [ ] Below 100€
   - [ ] 100-999€
   - [ ] 1000-4999€
   - [ ] 5000-9999€
   - [ ] 10 000-49 999€
   - [ ] 50 000-100 000€
   - [ ] Over 100 000€
   - [ ] Over 1 000 000€
3. How much do you currently have invested into cryptocurrencies? *
   - 0€
   - Below 100€
   - 100-999€
   - 1000-4999€
   - 5000-9999€
   - 10 000-49 999€
   - 50 000-100 000€
   - Over 100 000€
   - Over 1 000 000€

4. What is your risk tolerance when it comes to investing? *
   - Very low tolerance
   - Low tolerance
   - Neutral tolerance
   - High tolerance
   - Very high tolerance

5. Which of these options describes your investing knowledge the best? *
   - I have not invested before
   - Beginner
   - Intermediate
   - Advanced

On this page you will rate your attitude towards cryptocurrencies on a scale of 1-5, 1 being a low rank in terms of the trait and 5 being high.

6. On a scale from 1-5, how would you rate the usefulness of cryptocurrencies? *
   - 1
   - 2
   - 3
   - 4
   - 5
7. On a scale from 1-5, how would you rate the **profitability** of cryptocurrencies? *

○ 1
○ 2
○ 3
○ 4
○ 5

8. On a scale from 1-5, how would you rate the **riskiness** of cryptocurrencies? *

○ 1
○ 2
○ 3
○ 4
○ 5

9. On a scale from 1-5, how would you rate the **trustworthiness** of cryptocurrencies? *

○ 1
○ 2
○ 3
○ 4
○ 5

10. On a scale from 1-5, how would you rate the **risk/reward ratio** of cryptocurrencies? *

○ 1
○ 2
○ 3
○ 4
○ 5
11. What portion of your portfolio would you be willing to have in cryptocurrencies? *
- 0%
- Below 10%
- 10-30%
- 31-50%
- Over 50%
- Over 75%
- 100%

12. What portion of your portfolio would you be willing to have in one cryptocurrency? *
- 0%
- Below 10%
- 10-30%
- 31-50%
- Over 50%
- Over 75%
- 100%

13. Which of these cryptocurrencies have you invested into? Choose all that apply. *
- Bitcoin (BTC)
- Ethereum (ETH)
- Ripple (XRP)
- Cardano (ADA)
- Solana (SOL)
- Polkadot (DOT)
- Dogecoin (DOGE)
- Shiba Inu (SHIB)
- Cronos (CRO)
- Other
- I have not invested into cryptocurrencies
14. What is currently your favourite cryptocurrency? (OPTIONAL)


15. What makes the cryptocurrency your favourite? (OPTIONAL)


16. Which gender describes you the best? *

- Female
- Male
- Other

17. How old are you? *


18. Which country do you currently live in? *

