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# THE IMPACT OF MARKET SENTIMENT ON CRYPTOCURRENCY INVESTMENT

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**KEYWORDS**
Market sentiment, problems encountered by investors, Simpson's paradox, cryptocurrency investment.

**ABSTRACT**
Market sentiment refers to the overall feeling of investors and traders have about the state of the market or the price action of a particular asset. The descriptive study focused on the impact of market sentiment on cryptocurrency investment. Specifically, this study answered the following questions using the data collected in an online survey with 2014 respondents: (1) What is the current status of the market sentiment on cryptocurrency investment? (2) What are the common problems encountered by investors in the cryptocurrency market? (3) Is there a significant relationship between the current status of market sentiment on cryptocurrency investment and common problems encountered by investors? And; (4) What countermeasures can be proposed to the impact of market sentiment on cryptocurrency investment? Most of the respondents tended agreed about the current status of the market sentiment on cryptocurrency investment. Their responses tended to generally reflect their optimistic or "bullish" sentiment toward the market, that cryptocurrency holders are knowledgeable about the benefits of positive market outlook, and the market accurately predicted the volatility of cryptocurrency. The respondents were aware of the problems already reported in the literature, including cryptocurrency investment has become an avenue for illegal operations, the emergence of crypto scams, and the complexities of investing in cryptocurrencies. There was no significant correlation between market sentiment and problem encountered by investors. The respondents proposed some countermeasures to ameliorate some of the problems and challenges. The conclusions were confounded by Simpson's paradox. Further research is research to determine if the relationships between the current status of market sentiment on cryptocurrency investment vs. the common problems encountered by investors vary with respect to different mutually exclusive groups of investors.

## 1. Introduction

Cryptocurrency is a decentralized and encrypted medium of exchange based on blockchain technology. It is digital money that can buy regular goods and services. Along with this, blockchain technology is described by Buchi Okoro, CEO and co-founder of African cryptocurrency exchange Quidax as “Like a book where you write down everything you spend your money. Each page is similar to a block, and the entire book, a group of

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pages, is a blockchain." (Ashford, 2022). Cryptocurrency is designed to use over the internet. It makes it possible to transfer money online for a minimal cost without needing a middleman such as a bank. These transactions are secured by blockchain technology, similar to that of a bank's balance sheet or ledger (Coinbase.com, 2022).

The idea of cryptocurrency is already a talk in the 1980s. Digital cash was invented by American cryptographer David Chaum and is powered by cryptography to secure transactions. However, it was not fully developed. In October 2008, a mysterious man Satoshi Nakamoto launched a paper entitled: Bitcoin: A Peer-to-Peer Electronic Cash System, a system of digital currency which became the start of cryptocurrency revolution (Nigeria, 2021). The first official Bitcoin transaction with an actual company was made between Laszlo Hanyecz and Papa John's Pizthatn 2010, he called the pizza restaurant and spent 10, 000 Bitcoins (worth $40 back then) ordering himself two pizzas (Profit, 2021).

With regard to finance, market sentiment refers to the overall feeling of investors and traders have about the state of the market or the price action of a particular asset. It is derived from various sources such as fundamental analysis, technical analysis, and news and price history. For traders, it is an indication of potential price movements. It is termed "bullish" or optimistic sentiment, or "bearish" meaning, pessimistic sentiment (Ma, 2022). Market sentiment is the tone or feeling, in other terms, crowd psychology is shown by the price movement of the market. Rising of prices in an indication of bullish market sentiment whereas falling prices indicate bearish market sentiment. Traders rely on market sentiments as it affects price movements. For instance, if everyone is buying, a contrarian would sell (Smith, 2022).

For more than a decade, crypto and blockchain technology have profoundly changed people's lives. Cryptocurrency, as the most popular investment variety, has been accepted by more and more people, but most people are affected by market sentiment and make many wrong investment decisions, leading to investment failure and losses. Measuring the temperature of the market aids in acquiring investment judgment basis and improve the probability of investment success. In this light, this study will identify the impact of market sentiments on cryptocurrency investment, analyzing the data based on the following: (1) introduction to the investment theory by Warren Buffett, Howard Max et al; (2) judging the level of market sentiment; (3) measuring the temperature of the market; and (4) deriving the rationality of the fear and greed index based on the historical data test.

From the above review of related literature and studies, the following gaps were determined:

There were few studies that focused on the problems and challenges of the market sentiment on cryptocurrency investment. There were no studies that focused on the application of various theoretical bases, such as investment and behavior related concepts with regards to the market sentiment on cryptocurrency investment. Present studies regarding the market sentiment on cryptocurrency investment focused on the speculative property and volatility of cryptocurrencies, with few to no resources and research focusing on first-hand data regarding actual market sentiment. In view of the gaps identified, the study will focus on the impact of market sentiment on cryptocurrency investment.

**Methods**

This study's operational framework is based on Rogers' 1962 Diffusion of Innovation Theory. This theory explains how an innovation spreads through acceptance phases from innovators to laggards, influenced by factors that can either promote or hinder its diffusion. The process involves four key elements: innovation, communication, social system, and time. In this study, cryptocurrency represents the innovation, the fear and greed index serve as communication, the market's temperature and sentiment make up the social system, and time affects the innovation - diffusion process and categorizes adopters. The independent variable is the current status of market sentiment regarding cryptocurrency investment, while the dependent variable is the problems investors face in the cryptocurrency market. The researcher will then identify the relationship between these two variables.

Furthermore, the independent variable comprises the current status of the market sentiment on cryptocurrency investment. The dependent variable, on the other hand, is the problems encountered by investors in the cryptocurrency market. Thereafter, the researcher will identify the connection between the independent and dependent variables.

**Table 1: The operational model of the study**

| Independent Variable | → | Dependent Variable |
|---|---|---|
| Current Status of the Market Sentiment on Cryptocurrency Investment | → | Problems Encountered by Investors in the Cryptocurrency Market |

The null hypothesis was tested using the conventional .05 level of statistical significance:

**H0 -** There is no significant difference in the current status of market sentiment on cryptocurrency investment and the problems encountered by investors in the cryptocurrency market.

In order to present the view of the study the researcher proposes, it was assumed that:

1. Market sentiment has a significant impact in cryptocurrency investment.
2. Stockholders decide on cryptocurrency investment opportunities based on sentiment-driven analytics.

Cryptocurrency investment based on market sentiment has its own advantages and disadvantages.

A non-experimental descriptive research design was employed in this study. According to Creswell (2020), it focuses on quantitative and/or qualitative observations of specific circumstance, situations, or events in the natural environment, without manipulation or experimentation by the researcher. It shows a picture of an individual's or a group of individual's thoughts, feelings, or behavior from a given variable (Stangor & Walinga, 2018). The primary sources of data were the respondents' answers to the survey questionnaires. Secondary sources included books, online journals, periodical, and other references that the researcher consulted and cited in the reviewed related literature.

A researcher-made questionnaire was constructed and was used to survey the desired data to determine the impact of market sentiment on cryptocurrency investment. In gathering data, a researcher-made questionnaire was utilized. It was divided into two parts: part 1 covered the current status of the impact of market sentiment on cryptocurrency investment, while part 2 covered the common problems encountered by investors in the cryptocurrency market. Since the questionnaire was self-made, it was subjected to face and content validity. It was presented to the research adviser for initial checking. For further validation, the researcher consulted experts in the fields of Research, Language, and Statistics.

**Results**

This chapter presents the analysis and interpretation of the data gathered in the survey. The course of the analysis and interpretation was guided by the problem presented by the chapter one, specifically, the impact of market sentiment on cryptocurrency investment. This chapter is presented in four sections, to address the following research questions:

1. What is the current status of the market sentiment on cryptocurrency investment?
2. What are the common problems encountered by investors in the cryptocurrency market?
3. Is there a significant relationship between the current status of market sentiment on cryptocurrency investment and common problems encountered by investors?
4. What countermeasures can be proposed to the impact of market sentiment on cryptocurrency investment?

**The null hypothesis is:** There is no relationship between the current status of market sentiment on cryptocurrency investment and the problems encountered by investors in the cryptocurrency market.

What is the current status of the market sentiment on cryptocurrency investment? Table 1 presents the mean scores, interpretations, and ranks of the 4-point responses provided by a total of 2014 respondents to the 14 items in Part I of the questionnaire. The normal frequency distribution illustrated in Figure 2 with the mean score and highest or modal frequency = 2.50 at the center indicates that most of the respondents generally tended to agree with the questionnaire items. The right-hand tail of the distribution (scores = 2.60 to 3.50) reflected those respondents with the most optimistic or "bullish" market sentiment on cryptocurrency investment.

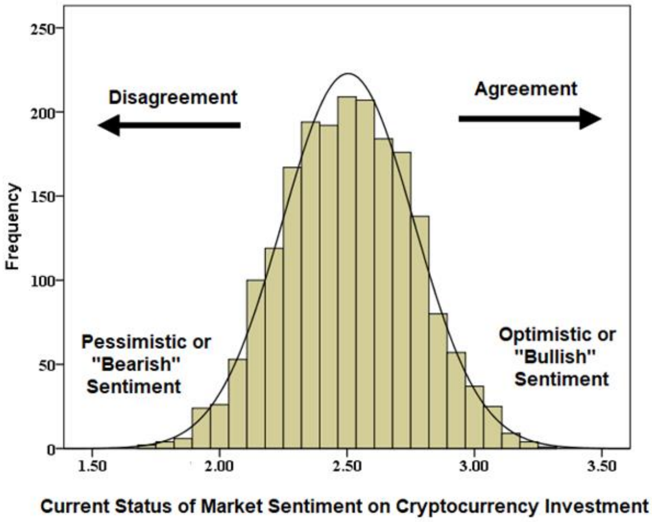


**Figure 1.** Normal Distribution of Current Status of the Market Sentiment

The three items to which the participants most strongly agreed, tending to reflect their "bullish" sentiment (ranked 1 to 3; mean score = 2.53 to 2.54) were:(1) Cryptocurrency holders are knowledgeable about the benefits of positive market outlook and implications of a negative market perception; (2) The market accurately predicts the volatility of the cryptocurrency where I invested in; (3) Investors sometimes feel the need of regulation in the cryptocurrency market. The symmetrical bell-curve in Figure 2 shows that some respondents in the left-hand tail of the distribution (scores = 1.50 to 2.50) tended to disagree with the questionnaire items, implying that in general they did not believe that the market sentiment on cryptocurrency investment was pessimistic or "bearish". This perspective was reflected by the three items that the participants disagreed with most (mean score = 2.44 to 2.49; ranked 12 to 14) specifically: (12) The cryptocurrency market has become bearish due to its dependency on market sentiment; (13) I depend my cryptocurrency investment decisions on the general market sentiment; and (14) The use of the Fear and Greed Index has helped me in deciding whether to buy or sell cryptocurrency.

What are the common problems encountered by investors in the cryptocurrency market? Table 2 presents the mean scores, interpretations, and ranks of the 4-point responses to the 21 items in Part II of the questionnaire focusing on the currents problems that were encountered by a total of 2014 investors in the cryptocurrency market. The overall average and mode (score = 2.50) were the same as for the market sentiment, The normal frequency distribution depicted in Figure 3 reflected a central tendency whereby most of the respondents generally agreed about the problems. The right-hand tail of the distribution (scores = 2.75 to 3.25) reflected those respondents who agreed that they encountered many problems, whilst the left-hand tail of the distribution (scores = 1.75 to 2.25) reflected those respondents who disagreed that they had encountered many problems.

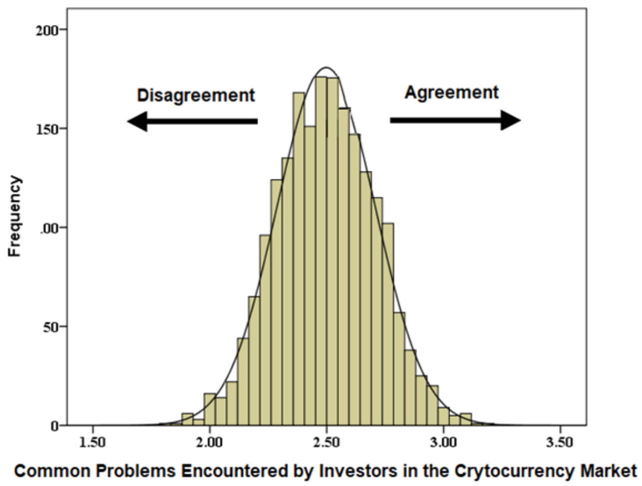


**Figure 4:** Normal Distribution of Problems Encountered by Investors.

The five encountered problems that the participants most strongly agreed with (ranked 1 to 5; mean score = 2.52 to 2.54) were:

(1). The balance shifts heavy to the disadvantages as cryptocurrencies depend on market sentiment;

(2). Existing market sentiment analytics accurately predicts the volatility of the value of cryptocurrencies;

(3). Current events which are unrelated to cryptocurrencies negatively impact the value of the coin;

(4). Cryptocurrency investment has become an avenue for illegal operations such as money laundering;

(5). Investment opportunities are enough for first-time investors to properly gauge the market. The four items that the respondents most strongly disagreed with (ranked 18 to 21; mean score = 2.48 to 2.49) were: (18) The emergence of crypto scams has brought attention to the efficiency of investing in cryptocurrencies; (19) It is hard to navigate the complexities of investing in cryptocurrencies (20) The Internet has heavily influenced the general public perception towards cryptocurrency; and (21) Cryptocurrency is not a sustainable form of investment due to its dependence on market sentiment. The respondents proposed also some countermeasures to ameliorate some of the problems and challenges associated with the common problems encountered by investors in the cryptocurrency market (e.g., Market regulators should formulate rules and regulations for the cryptocurrency trade).

**Table 2:** Correlation between Current Status and Common Problems.

| Variables | Pearson's correlation coefficient | p-value | Verbal Interpretation |
|---|---|---|---|
| The current status of the market sentiment on cryptocurrency investment vs. the common problems encountered by investors | -.008 | .734 | No significant correlation |

The results of the correlation analysis appear to indicate that market sentiment has zero or practically no impact on cryptocurrency investment. This result is not consistent with the view that the "balance shifts toward the disadvantages as cryptocurrencies tend toward depending on market sentiment". This view implies a negative correlation between the current status of the market sentiment on cryptocurrency investment vs. the common problems encountered by investors.

## Conclusion

This study used a non-experimental descriptive research design to collect quantitative data from 2014 participants in a cross-sectional survey. Demographic characteristics of participants were not measured. Two Likert scales were created: one with 14 items measured market sentiment on cryptocurrency investment, and the other with 21 items measured common problems investors faced in the cryptocurrency market.

Key findings include:

1. With a mean score of 2.50 (center of normal distribution), most respondents agreed with items on market sentiment, showing an optimistic "bullish" view, believing cryptocurrency holders understand market outlooks and the market can predict volatility. It also confirmed investors' reluctance to use the Fear and Greed Index.
2. A mean score of 2.50 also indicated most respondents agreed with items on common problems, being aware of issues like illegal operations, scams and investment complexities. Most thought cryptocurrency is not a sustainable investment due to market sentiment dependence.
3. Respondents proposed countermeasures to address the problems, which will be

discussed in the "Implications" section.

4. The null hypothesis that there's no relationship between the two scales was not rejected. There's no statistical evidence of a significant correlation between market sentiment status and common problems. The correlation analysis results may be affected by Simpson's paradox as data wasn't analyzed by different demographic groups.

The respondents tended to agree that existing investment theories and applications had helped them in deciding whether to invest or not in cryptocurrencies. However, this study did not support Everett Rogers' Theory of Diffusion of Innovation, due to the lack of a correlation between the current status of the market sentiment on cryptocurrency investment and the common problems encountered by investors in the cryptocurrency market. The Theory of Diffusion of Information in the context of business analytics, posits that sentiment is one of the main factors that influences an individual's decision to join an innovative trend (Nam et al., 2019). The respondents tended to agree that the several benefits of cryptocurrency were factors that influenced their behavior as investors, which is consistent with the Theory of Planned Behavior (Soomro et al., 2022).

**Recommendations**

Current research on cryptocurrency investment lacks exploration of how the relationship between market sentiment and investment - related problems varies among different investor groups. These groups can be segmented by demographics (age, gender, location), investment profiles (experience, risk tolerance, objectives), and technological proficiency. For example, younger investors may be more influenced by social media, while novice and seasoned investors face different problems. As the cryptocurrency market grows more diverse, understanding these group - specific variations is vital. Without this knowledge, strategies and policies may be ineffective. Thus, this research gap needs further study to better understand investment behavior and create more targeted market solutions.

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