Psychological Impact of Cryptocurrency Volatility on Investor Emotions and Decision Making

Bhoomika Badlani¹, Rashmi Akshay Yadav² Ankit Kumar³

¹Assistant Professor, Department of Development Studies, Vivekananda Global University, Jaipur, India.

Received: 13-May-2023 Revised: 16-June-2023 Accepted:01-July-2023

²Assistant Professor, Department of Finance, JAIN (Deemed to-be University), Bangalore, India.

³Associate Professor, Department of TMIMT, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India.

Abstract

Introduction: Introduction: The impact of cryptocurrency volatility on investor emotions and decision-making refers to how the erratic and swift price changes of cryptocurrencies can have an impact on investors' psychological states and ultimately influence their investing choices. Since the start of 2013, the cryptocurrency market has drawn a lot of attention from the media and academia due to its significant price fluctuations.

Methods: By examining the impact of behavioral finance characteristics on investment choices in the cryptocurrency market, this study focuses on Arab investors who invest in the market. Through the use of questionnaires and a snowball sampling technique, a quantitative approach was taken.

Result: The findings demonstrate that prospect theory, heuristic theory, and herding theory all significantly influence investors' choice to invest in the bitcoin market. This highlights the important part played by the suggested behavioral elements in influencing investors' investing choices. By combining the findings of other studies, this work adds to the body of existing research. Additionally, it boosts the ability of investors to make defensible decisions based on their grasp of the mechanics of the Bitcoin market.

Conclusion: The implications of the findings will help errant investors become increasingly ready to stay in the bitcoin market and advance their knowledge of the most effective way to make wise investment decisions. The results of this study will also motivate financial experts to acknowledge that knowledge of conventional finance theory is insufficient for success in the bitcoin market.

Keywords: cryptocurrency volatility, investor emotions, decision making, bitcoin market, snowball sampling technique

1. INTRODUCTION

The blockchain's invention of cryptocurrency represents one that is frequently used as a decentralized digital currency. A type of digital currency without an actual equivalent is referred to as "cryptocurrency". Additionally, it suggests that transactional funds are hidden and safe. There are some other versions of this virtual currency, including Bitcoin, Ethereum, Litecoin, Monero, and many others. Although it has no material existence, this money functions generally in a manner comparable to conventional currencies and has an exchange rate. Cryptocurrency exchange values fluctuate erratically, and traders frequently profit from this. There is no intermediary involved with online payments in Bitcoin because they take a way of sending from one person to another (Amysar et al.,2020). Cryptocurrencies have experienced rapid advancement and extensive market adoption despite their recent inception. Several hedge funds and investors' portfolios and trading strategies have begun to include cryptocurrency-related commodities. The research community has launched similar endeavors to investigate trading with bitcoins.

This article aims to give a thorough assessment of cryptocurrency trading research, by which we mean any study to aid and develop trading strategies for cryptocurrencies (Cao and Xie , 2022). In particular, the cryptocurrency's extreme price volatility has prompted more literary research on the genesis of the coin's value and the potential for a bubble in assets. Due to its distinct characteristics that influence its price dynamic, including bitcoin supply and demand, investor attraction, user anonymity, and computer programming aficionados, the majority of academics have claimed that cryptocurrencies are detached from the underlying

economic and financial fundamentals (Yin, 2022). A financial market's price is not surprisingly driven by its formal/own foundations when it has such a market. Thus, behavioral finance theory concentrates on the role of what are regarded as non-fundamental variables, like behavior. The question is especially important when the market is dependent on or lacking in certain fundamentals, such as the aforementioned cryptocurrencies. This is one of the primary reasons why the present research is looking at how investors' emotions affect price movements in cryptocurrencies. The study of investor sentiment in particular aids us in determining the level of investors' fear of risks and, therefore, their investment goals. Risk-taking and hence, bitcoin volatility, are reliably influenced by both investors' goals for investing and their level of risk avoidance (Bourghelle, 2022). Customers may trade currency virtually without the intervention of an outside party by employing cryptocurrencies. Blockchain technology, which includes a distributed system that logs information about transactions on linked blocks and stores them on an encrypted digital record, has made its existence conceivable. The blockchain system's data are dispersed over a network of replicated databases that are always in synchronization (Torres et al., 2020). We are going to examine the impact of behavioral finance characteristics on investment choices in cryptocurrency in Arab investors who invest in the market.

2. RELATED WORKS

Sapkota, 2022 examined whether opinions expressed in the news media affect Bitcoin volatility. In doing so, they used four separate emotion dictionaries, two different emotions, namely psychological sentiments and financial sentiments, along with three distinct range-based volatility assessments. Gaies et al., 2023 investigated the link between investor apprehension in the price of Bitcoin and the cryptocurrency market by taking into account any possible consequences of the current COVID-19 epidemic between May 5, 2018, and December 10, 2020. They conducted bootstrap windows that move The Granger causality analysis shows that the relationship between the fear emotion and Bitcoin prices is not always consistent since there are adjustments in the time series over the entire sample. Their findings demonstrate that there are several subperiods when there are positive as well as negative relationships between negative feelings about the price of Bitcoin. Li,2022 indicated the main causes of volatility are speculation, client concentration, industry reliability, and the interaction between speculative and market integration, and that the volatility of Bitcoin is closely related to the volatility of returns on the cryptocurrency. Additionally, they provided proof that the primary cause of volatility is investors' attentiveness. While investor focus and market accessibility exhibit a linear pattern in the volatility of Bitcoin, A "U-shaped" link exists between speculation and the interaction term. Maghsoodi, 2022 created a predictive and analytical framework to assist clients in making choices. To predict price levels, The Prophet Forecasting Model (PFM) was utilized for the time series analysis. Poongodi et al., 2022 examined the patterns in the worldwide price movement of cryptocurrencies concerning data on social media communication. Their goal is to comprehend and derive information from the current trends in internet forums and social media sites to forecast changes in cryptocurrency prices.Wang et al., 2022 intend to present The indicators of cryptocurrency environmental attention (ICEA), which seeks to quantify the comparative breadth of media discourse on the impact of bitcoins on the environment. Faria, 2023 compared the differences between the investors and noninvestors and examined the point of view and consumer perceptions throughout all purchase phases, focusing on the after-purchase behavior. It also examined consumer perceptions and motivations that contribute to a purchase decision, analyzing to what extent that impacts the extension of the Self. Huynh and Phan, 2023 investigated if the market for cryptocurrencies might be impacted by the emotions shown in recent images. Investigators found that a spike in cryptocurrency prices corresponds to a rise in the proportion of images with gloomy tones related to lower cryptocurrency values. Biju, 2022 utilized a triangulation strategy; a combination of methods was performed, adding a quantitative method to a qualitative investigation. To determine if market attitudes had an impact on Bitcoin market prices, both Qualitative as well as quantitative information from the years 2016 through 2021 were analyzed. Fairchild et al., 2023 proposed a groundbreaking theoretical structure that provides a first look at the relationship between shareholders' Feelings, in both conscious and unconscious ways, as well as ups and downs in the share and cryptocurrency market

Problem Statement

In addition, there is a perception that the digital currency market is experiencing a "fad" as a result of the boom habits of Bitcoin that are being fueled by noisy entrepreneurs, which implies that market inefficiencies will continue to grow. will result in a confluence of many market-related events and occurrences that will have a significant impact on the volatility of the market value of Bitcoin. Cryptocurrency noise investors are readily influenced by the demands and actions of others, which can result in "herding behavior." As a result, choices are frequently made using shortcuts rather than taking into account a fair evaluation. Over numerous decades, scientists have struggled to figure out the collapse of the stock market. Traders experience fear when particular incidents, like catastrophes caused by nature, too pessimistic financial forecasts, or an overabundance of marginal loans, occur in their nations or elsewhere in the globe. Traders' deliberate mistakes in judgment are revealed by social finance; rather, people fall prey to cognitive biases, which result in the inefficiency, instability, and oddities of the stock market.

Clients acquire highly attached when considering investments in the bitcoin markets as a result. Their subconscious minds generate dire situations of shedding cash and facing insolvency, sending out undesirable brainwaves. In general, individual behavioral tendencies are the only cause of the failure of markets. The bitcoin markets are strikingly similar to the Incorporating those components attempts to provide perceptions for more sensible and stable financial decisions in the very fluctuating trade in cryptocurrencies. Additionally, this research seeks to put a spotlight on how opaque the digital currency market is and how unpredictable it is, to assist authorities in making better choices that would support the solid financial condition of the nations

3. METHODOLOGY

POS The research being conducted intends to look into how personal investment choices in the market for digital currencies are affected by behavioral and financial aspects. A quantitative method was applied to research this effect. A snowball approach to sampling was chosen because establishing the sampling period frame was challenging. Multiple regression modeling, descriptive data collection for each variable, and demographic assessment are the main statistical methods used in this work

3.1 Population and sampling

The investigation's concentration is on private shareholders who participate in the United Arab Emirates digital currency market. All holders of Bitcoin have participated in the research. Evidence was gathered by creating a survey via the Internet, which was then emailed to highly disapproving, and those who responded were allowed to answer. In the United Arab Emirates, an entire collection of 112 useful inquiries were gathered. Financiers. A rating system based on the Likert scale is used in the poll, and a technique known as snowball sampling has been chosen. In the present research, a list of assertions has been selected and created. Every claim was given a rating on a scale ranging from high to agreeing

3.2 Research design

A numerical strategy is used to examine the impact of financial behavior characteristics on trading choices in the marketplace for Bitcoin. Based on the project's design, a theoretical model has been established in this project; the plan of study is shown in Figure 1.



Figure 1: Plan of study

A few assumptions are put forth based on the study's model mentioned previously:

• There is a considerable impact of flocking on individuals' investing choices in the marketplace for bitcoin

• Heuristics and prospects both have a large impact on how individuals choose to participate in the market for digital currencies.

The model

The basic formula is approximated via multiple regression techniques to explore the impact of behavioral financial determinants on investing choices in the Bitcoin marketplace:

[INV] $_{i=\beta_0+\beta_1}$ HERD+ β_2 HEUR+ β_3 PRO+ ε_i

(1)

When using multiple regression analyses, the issue of fraudulent regression, which includes linear relationships, a plurality of, and normalcy, must be taken into account. Before using the regression technique and making conclusions on the outcome of the model, these basic presumptions must be true.

3.3 Data analysis

3.3.1 Descriptive statistics

The regression technique is used to examine how financial behavior characteristics affect investing choices in the Bitcoin market. The traits of the collection are determined using a descriptive approach. Table 1 shows the demographic profile among participants and the detailed into this matter information on every item or variable utilized in the present investigation.

Table 1: Respondents' Demographic Analysis

Criteria		%	n
	Ph.D. Degree	3.7%	5
Education	Master Degree	14.4%	17
	Secondary School	2.8%	4
Level	Bachelor Degree	79.6%	88
	Total		114
Gender	Female	12.6%	15
	Male	87.6%	99
	Total		114
	More than 50 years	2.8%	4
	From 40 – 50	10.8%	13
Age	Younger than 30 years	13.5%	16
	From 30 – 40	73.3%	83
	Total		116

3.4 Emotion Analytics

To determine the Utilize artificial intelligence to rate the content's emotional content. Methods canonical sentiment assessment creates a sentiment term definition. The lexical strategy, among others, assumes that a person's personality reflects her lexicality (i.e., vocabulary). In simple terms, identity may be inferred by what phrases individuals use. The "Big Five" nature domains openness, conscientiousness, extraversion, agreeableness, and neuroticism categorize the personality of humans. Usually accepted as a suitable taxonomy. Numerous research shows that there is an actual and ongoing relationship between emotional words and the nature of humans. For instance, extroverts often use more words than introverts do, and they also tend to use more positive terms. Also show that the use of pronouns, prepositions, and articles has a favorable impact on

one's status, authority, and thinking. Demonstrate that compared to extroverts, introverts employ more negative and exclusionary phrases like "but" and "except".

Use a corpus linguistics technique to count the number of words from a specified vocabulary that are connected to certain emotions. First, gather all textual information on Bitcoin from internet sources (posts), and break each post's phrases down into their component words. Use The piece's sentiments were assessed by using the Linguistic Inquiry and Word Count (LIWC) program, which had proven to be a useful instrument to assess linguistic expressions of emotion. A function of the LIWC allows you to group any content into 93 psychologically relevant groups using an ordered structure based on the previously discussed Big Five domains (for instance, anxiousness, fury, and grief go under the negative emotion category). As an illustration, throughout this piece, we compare the first eight letters of every distinctive unit with the definition of "strength," which is already categorized as a positive feeling according to a dictionary. Therefore, it is feasible to include "strengthen" under the category of good emotions. After counting the words they standardize the quantity of every feeling type by splitting the outcome by the post's overall number of words.

3.5 Empirical Design and Result

Anybody may debate Bitcoin-related subjects on Bitcointalk.org. Concentrate on the "Bitcoin Discussion" site in site, which offers a place for debating Bitcoin as well as other subjects. For a feeling analysis, look at an overall of 2050,280 posts between November 22, 2009, and September 30, 2020. The proportion of feelings over every change is then calculated to be used for the experimental assessment utilizing LIWC to provide a benchmark. In human psychology, the term "affect" refers to the core feeling of feeling or state of mind it has come to mean something emotive in use today. Take into account the following affect-related factors to be compatible with LIWC: A pleasant feeling, a negative emotion, anxiety, rage, and grief are among the other emotions. Anxiety, rage, and sorrow also seem to represent human affective processes. Emotion-related affective process terms may be roughly classed as positive or negative emotions. Measure cognition-related characteristics such as insight, causation, discrepancy, tentativeness, certainty, and distinction to account for other psychological factors. The degree of difficulty and depth of thinking processes differ from person to person, but language usage reveals cognitive procedure variability.

Thus take into account the LIWC categories for "certainty" as well as "distinction" to measure these disparities in terms of human psychology perspectives. Individuals who take part during the reassessment procedure effectively seem to regularly utilize terms from the LIWC categories for "cause," "insight," and "discrepancy"; actively employing words connected to "tentativeness" is linked to a lack of trust in the subject being addressed. The last three control variables for the perception area are a) listening, b) emotion, then c) witnessing. People probably interpret the textual substance of postings differently. We take into account "seeing," "hearing," and "feeling" since these three concepts may describe a range of emotions and information situations.

Extract the cryptocurrency transaction data from Coinmarketcap.com.We consider the complete database of digital currency exchange, which includes writes made between April 29, 2013, and September 30, 2020, and comprises 89.8% (1841,362 posts) of all shared material submitted to Bitcointalk.org. As well more common price otherwise, just exchange clinked measures like skewness, true volatility, volume of trading, exchange, and volatility, also take into account Bit.

4. RESULT AND DISCUSSION

Using Statistical analysis of different items shows the computed mean and standard deviation by using herding theory, heuristic theory, prospect theory, and investment decision is examined and the Impact of Economical and Behavioural Aspects on Trading Choices in the Cryptocurrency Marketplace was examined. The demographic factors used in this investigation are shown in Table 1. The three categories of demographic factors are a person's gender, age, and educational attainment. A total of 98 traders are men, making up 87% of the total, while 14 investors are women, making up 12.5% of the group, this shows that men make up a large percentage of buyers, thereby which is compatible with Arab culture.

The bulk of the participants is experienced traders in digital currencies, as seen by the age distribution, which reveals that most of the responders have an age range between the ages of thirty and forty years, with a percentage ratio of 73.2. In terms of learning, the dataset reveals that 79.5% of the respondents have

undergraduate degrees, thus indicating that a majority of traders are experienced traders. The outcomes of the qualitative data analysis demonstrate the determined for every item included in the poll, the mean and variance are provided. Traders in the marketplace for digital currencies have the flexibility to alter their first-time investment choice. The findings demonstrate that "different traders' purchases and sales of a variety of cryptocurrencies have an effect on the choice of investments and registers with the average having an average value of 3.75 with an SD of 0.82. By the herding theory perspective, heuristics theory, prospect theory, and investment decisions, the descriptive statistics' findings display the computed mean and standard deviation depicted in Figures 2, 3, 4, and 5 respectively. The statistical results for each of the items/variables utilized in the present research are shown in Table 2.







Figure 2: Statistical analysis shows the computed mean and standard deviation by using the herding theory



Figure 3: Statistical analysis shows the computed mean and standard deviation by using heuristics theory



Figure 4: Statistical analysis shows the computed mean and standard deviation by using prospect theory



Figure 5: Statistical analysis shows the computed mean and standard deviation by using investment decision **Table 2: Descriptive Statistics for Each Item/ Variables**

Item/Variable	Std.	Mean
Investment		
decisions		
INV1	0.95	3.20
INV2	0.65	2.95
INV3	0.70	3.10
INV4	0.80	3.70
Overall Average		
Prospect Factors		
P1	0.80	3.85
P2	0.75	3.79
P3	0.90	3.43
P4	0.79	3.45
P5	0.95	3.30

Overall Average		
Herding Factors		
H1	0.79	3.35
H2	0.98	3.60
H3	0.83	3.74
H4	0.88	3.72
Overall Average		
Heuristics Factors		
HEU1	0.89	3.65
HEU2	0.83	3.94
HEU3	0.71	3.90
Overall Average		

The results demonstrate that the selection of bitcoin types by other shareholders influences the choices they make, with an average of 3.32 and an SD of 0.77. This suggests that the type of digital currency that traders pick to make investments in will be influenced by their peers' selections. The outcomes of the task "Traders generally respond promptly to the modifications of different investor choices while tracking how they respond to the bitcoin marketplace" indicate an average value of 3.70 with an average variance of 0.87, while the outcomes of the thing they'll generally respond fast to the shifts of additional the buyer's choices and obey the responses to the bitcoin marketplace" track an average value of 3.59 with a standard variation worth of 0.99. The flock's averaged a score altogetherThe data for "investors typically respond quickly to changes in other investors' decisions and follow their responses to the cryptocurrency market" has a mean score of 3.70 and an average deviation of 1, a score of 0.87. The herding theory's overall average score is 3.59, and its deviation from the mean is 0.865, showing that it has a significant impact on how traders choose to put money in the Bitcoin market. According to this heuristics theory, "traders forecast the changes in cryptocurrency" as well as "investors rely on your prior market experiences for your next investment". The largest results, 3.92 and 3.91, having SD values of 0.84 and 0.73, respectively, are shown by the phrase "price in the future based on the recent cryptocurrency prices." This suggests that investors in the market for digital currencies base their future choice of investments on past performance and also presume they possess the expertise and skills needed. The findings indicate that "traders believe that your expertise and understanding of the market for digital currencies can enable you to outperform the market." gets a mean value of 3.62 with an SD of 0.87. Results show that "After a prior gain, you are more risk-seeking than usual" has the largest mean under the theory of prospects, with a value of 3.87 and a standard deviation of 0.83. As a result, if traders in the market for Bitcoin see success with their prior purchases, they will become more motivated to purchase other assets.

In other words, as time goes on, traders will start taking more risks. Contrarily, when they lose their money invested and turn cautious, these individuals will cease making investing selections. The findings reveal that "investors avoid selling cryptocurrency that has lost value and readily sells cryptocurrency that has gained value" and had the smallest score.

Some 3.35 was recorded with a standard deviation of 0.96. This shows that in the Bitcoin marketplace, traders act like speculations. The findings support the hypothesis that "After a prior loss, you become more risk-averse," which is supported by the outcomes' average value of 3.80 and 0.78 standard deviations (SD).

This finding implies that traders might grow security-averse and be alert to possible losses as the value of cryptocurrencies declines will consider the possibility factor and develop a hazard-averse attitude. Additionally, it is clear from the results that the statements "I can identify the low point of the market" and "My instinct frequently helps me make a good investment" have corresponding mean values of 3.45 and 3.45 with standard deviations of 0.90 and 0.79. The prospect theory's total average worth is 3.589, with a usual variation of 0.85, showing that it is highly influential in guiding the choices of cryptocurrencies to make investments.

4.1 The influence of behavior finance factor on investment decision

This research tries to look into how the action affects health financial considerations that influence Bitcoin decision-making. Testing the regression analysis's fundamental hypotheses is crucial before using the method of regression. It has been noted that all prerequisites for using regression modeling have been satisfied. The size of each item was evaluated using its dependability and accuracy assessments. The Cronbach's Alpha results demonstrate that every number is valid because they fall within the bounds of 0.787 and 0.856. Table 3 presents the outcomes of the analysis of multiple regression. Table 3 shows findings demonstrate that 14.7% of the variation in the decisions made by traders in the bitcoin market was explained by the herding hypothesis, the theory of prospects, and the heuristic hypothesis

r					
		Sig.	t-value	Beta	Std. Error
Normality	The data is				
	normally				
	distributed				
Heuristics		098	1.676	156	058
VIF	All values less				
	than 10				
R^2	0.148				
F	6.219				
Prospect		.005	2.929	263	068
Constant		.001	5.571		352
Herding		.028	2.237	.207	067

 Table 3: The Impact of Economical and Behavioural Aspects on Trading Choices in the Cryptocurrency

 Marketplace

The regression study's results show that problems with multicollinearity are not present. Additionally, the results demonstrate that the overall approach is appropriate because of a highIt is evident that the herding principle influences, potential Heuristic principle, game theory, and rational decision theory all significantly influence traders' bitcoin investing choices. they note chance levels of 0.027, 0.004, and 0.097, accordingly, in the market. This demonstrates that behavioral and financial factors influence the Bitcoin marketplace. In simple terms, traders' feelings and moods are taken into account when deciding whether to dispose of or purchase a certain sort of cryptocurrency. Still, the amount of R squire (14.7%) suggests that other significant variables may potentially have an effect, opening the door for additional research

5. CONCLUSION

According to conventional financial theory, the actions of shareholders have little impact on prices for assets. The justification for that is decided by the response from financiers, which will be the deals and the arbitrageurs' dealing have balanced each other. Investors think and choose sensible, logical choices about their investments. A behavioral financial considerations significantly influence the investment choices that investors make in the Bitcoin marketplace. The Bitcoin system is currently in an upward trend due to unreliable merchants, leading to the marketplace being ineffective. Thus, noise financial considerations about their stores the bitcoin's decisions about investigate how the action affects health. Financial considerations influence Bitcoin's decisions about investigate how that buyers'. The kinds of virtual currencies that a shareholder chooses will greatly influence their financial choices, as will the decisions of other potential investors. Additionally, the findings indicate that when traders see a return on their funds, they will choose their next portfolios based on their experience, information, and abilities, which leads to the conclusion that shareholders act speculative in the marketplace for bitcoin. Thus findings also show that the prospect theory, heuristic theory, and herding theory aspects all significantly influence individuals' investing choices in the marketplace for Bitcoin.

References

- [1] Abdar, M., Basiri, M.E., Yin, J., Habibnezhad, M., Chi, G., Nemati, S. and Asadi, S., 2020. Energy choices in Alaska: Mining people's perception and attitudes from geotagged tweets. Renewable and Sustainable Energy Reviews, 124, p.109781.
- [2] Allen, M.S., Mison, E.A., Robson, D.A. and Laborde, S., 2021. Extraversion in sport: A scoping review. International Review of Sport and Exercise Psychology, 14(1), pp.229-259.
- [3] Amsyar, I., Christopher, E., Dithi, A., Khan, A.N. and Maulana, S., 2020. The Challenge of Cryptocurrency in the Era of the Digital Revolution: A Review of Systematic Literature. Aptisi Transactions on Technopreneurship (ATT), 2(2), pp.153-159.
- [4] Asudani, D.S., Nagwani, N.K. and Singh, P., 2023. Impact of word embedding models on text analytics in the deep learning environment: a review. Artificial Intelligence Review, pp.1-81.
- [5] Biju, A.V., Mathew, A.M., Nithi Krishna, P.P. and Akhil, M.P., 2022. Is the future of Bitcoin safe? A triangulation approach in the reality of the BTC market through sentiment analysis. Digital Finance, pp.1-16.
- [6] Blevins, D.P., Stackhouse, M.R. and Dionne, S.D., 2022. Righting the balance: Understanding introverts (and extroverts) in the workplace. International Journal of Management Reviews, 24(1), pp.78-98.
- [7] Bourghelle, D., Jawadi, F. and Rozin, P., 2022. Do collective emotions drive bitcoin volatility? A triple regime-switching vector approach. Journal of Economic Behavior & Organization, 196, pp.294-306.
- [8] Cao, G. and Xie, W., 2022. Asymmetric dynamic spillover effect between cryptocurrency and China's financial market: Evidence from TVP-VAR based connectedness approach. Finance Research Letters, 49, p.103070.
- [9] Chan, J.Y.L., Bea, K.T., Leow, S.M.H., Phoong, S.W. and Cheng, W.K., 2023. State of the art: a review of sentiment analysis based on sequential transfer learning. Artificial Intelligence Review, 56(1), pp.749-780.
- [10] Dreisbach, G., 2022. Using the theory of constructed emotion to inform the study of cognition-emotion interactions. Psychonomic Bulletin & Review, pp.1-9.
- [11] Fairchild, R.J., Kinsella, J., Hinvest, N. and He, C., 2022. Crypto Investors' Behaviour and Performance and the Dot-Com Bubble Compared: This Time it is Different?. Available at SSRN 4280504.
- [12] Faria, A.C.A.D., 2023. Could Cryptocurrencies be an Extension of our Self? A Study on Post-Purchase Behavior (Doctoral dissertation).
- [13] Gaies, B., Nakhli, M.S., Sahut, J.M. and Schweizer, D., 2023. Interactions Between Investors' Fear and Greed Sentiment and Bitcoin Prices. The North American Journal of Economics and Finance, p.101924.
- [14] Huynh, N. and Phan, H., 2023. Emotions in the crypto market: Do photos speak? Finance Research Letters, p.103945.
- [15] Kapassa, E., Themistocleous, M., Christodoulou, K. and Iosif, E., 2021. Blockchain application in the internet of vehicles: Challenges, contributions, and current limitations. Future Internet, 13(12), p.313.
- [16] Koutsoumpis, A., Oostrom, J.K., Holtrop, D., Van Breda, W., Ghassemi, S. and de Vries, R.E., 2022. The kernel of truth in text-based personality assessment: A meta-analysis of the relations between the Big Five and the Linguistic Inquiry and Word Count (LIWC). Psychological Bulletin, 148(11-12), p.843.
- [17] Li, Z., Dong, H., Floros, C., Charemis, A. and Failler, P., 2022. Re-examining bitcoin volatility: a CAViaR-based approach. Emerging Markets Finance and Trade, 58(5), pp.1320-1338.
- [18] Maghsoodi, A.I., 2023. Cryptocurrency portfolio allocation using a novel hybrid and predictive big data decision support system. Omega, 115, p.102787.
- [19] Martin, G., Reilly, K., Everitt, H. and Gilliland, J.A., 2022. The impact of climate change awareness on children's mental well-being and negative emotions-a scoping review. Child and Adolescent Mental Health, 27(1), pp.59-72.
- [20] Poongodi, M., Nguyen, T.N., Hamdi, M. and Cengiz, K., 2021. Global cryptocurrency trend prediction using social media. Information Processing & Management, 58(6), p.102708.
- [21] Sapkota, N., 2022. News-based sentiment and bitcoin volatility. International Review of Financial Analysis, 82, p.102183.

- [22] Smith, R., Lane, R.D., Parr, T. and Friston, K.J., 2019. Neurocomputational mechanisms underlying emotional awareness: insights afforded by deep active inference and their potential clinical relevance. Neuroscience & Biobehavioral Reviews, 107, pp.473-491.
- [23] Torres, R., Solis, M.A., Salas, R. and Bariviera, A.F., 2020. A dynamic linguistic decision-making approach for a cryptocurrency investment scenario. IEEE Access, 8, pp.228514-228524.
- [24] Wang, Y., Lucey, B., Vigne, S.A. and Yarovaya, L., 2022. An index of cryptocurrency environmental attention (ICEA). China Finance Review International.
- [25] Yin, L., Nie, J. and Han, L., 2021. Understanding cryptocurrency volatility: The role of oil market shocks. International Review of Economics & Finance, 72, pp.233-253.nG=