JURNAL EKONOMI DAN BISNIS
Journal homepage: www.ejournal.uksw.edu/jeb
ISSN 1979-6471 E-ISSN 2528-0147

The role of psychological aspects to measure Indonesian cryptocurrency investor behavior

Finnah Fourqoniah[a*], Wira Bharata[b], Moni Wulan Mahriani[c]
[a] *Faculty of Social and Political Sciences, Mulawarman University, Samarinda, Indonesia; fourqoniah@fisip.unmul.ac.id**
[b] *Faculty of Social and Political Sciences, Mulawarman University, Samarinda, Indonesia; wrbharata@fisip.unmul.ac.id*
[c] *Faculty of Social and Political Sciences, Mulawarman University, Samarinda, Indonesia; moniwulan@gmail.com*

ARTICLE INFO

Article History:
Received 09-07-2023
Revised 06-03-2024
Accepted 06-24-2024

Kata Kunci:
Pencarian sensasi, kecerdasan emosional, kualitas informasi, perilaku keuangan, cryptocurrency

Keywords:
Sensation-seeking, emotional intelligence, perceived information quality, behavioral finance, cryptocurrency

ABSTRAK

Indonesia merupakan salah satu negara yang mengalami pertumbuhan tingkat investasi cryptocurrency. Studi ini mengevaluasi aspek psikologis yang berdampak pada perilaku keuangan investor cryptocurrency di Indonesia. Studi ini menggunakan pencarian sensasi dan kecerdasan emosional sebagai anteseden untuk mengukur perilaku keuangan. Kami mengusulkan hubungan antara kualitas informasi yang dirasakan dan perilakukeuangan yang belum pernah dilakukan sebelumnya. Paradigma penelitian ini adalah kuantitatif-eksplanatori. Populasi statistik terdiri dari investor cryptocurrency di Indonesia sepanjang tahun 2022 sebanyak 16,7 juta orang. Sampel terdiri dari 384 responden yang diberikan kuesioner tertutup melalui platform media sosial. Data yang terkumpul dianalisis dengan menggunakan software SPSS versi 25. Hasil penelitian membuktikan bahwa semua hipotesis yang diajukan diterima. Kajian ini secara umum menunjukkan gambaran perilaku investor cryptocurrency Indonesia dari perspektif psikologis. Temuan penelitian menunjukkan bahwa pencarian sensasi, kecerdasan emosional, dan kualitas informasi yang dirasakan secara langsung dan signifikan mempengaruhi perilaku keuangan.

ABSTRACT

Indonesia is one of the countries experiencing growth in cryptocurrency investment. This study evaluates the psychological aspects that impact the behavioral finance of cryptocurrency investors in Indonesia. This study uses sensation-seeking and emotional intelligence as antecedents to measure behavioral finance. We propose a relationship between perceived information quality and behavioral finance that has never been done before. The paradigm of this research is quantitative-explanatory. The

*Corresponding Author

statistical population consists of cryptocurrency investors in Indonesia throughout 2022, as many as 16.7 million people. The sample comprised 384 respondents who were given closed questionnaires through social media platforms. The data were analyzed by using SPSS software version 25. The results of the study proved that all the hypotheses proposed were accepted. This study generally shows a picture of the behavior of Indonesian cryptocurrency investors from a psychological perspective. The research findings show that sensation-seeking, emotional intelligence, and perceived information quality directly and significantly impact behavioral finance.

INTRODUCTION

The development of technology accompanied changes in investment patterns and forms. A wide selection of investment instruments is currently available in the form of digital assets (Hendershott et al., 2021). Previous studies conducted in eight Asian countries noted that 7% of respondents had investments in digital assets (Afani & Tambunan, 2022). Other literature states that more than 50% of Asian wealthy investors also own digital assets, including cryptocurrencies (Al-Mansour, 2020). Cryptocurrency is Asia's fifth largest asset class, beating forex, commodities, and collectibles (Arslanian, 2022). The Minister of Trade of the Republic of Indonesia Number 99 Regulation of 2018 concerning *Kebijakan Umum Penyelenggaraan Perdagangan Aset Kripto* drives the growth of cryptocurrency asset trading in Indonesia. Furthermore, the Indonesian government officially permitted cryptocurrency asset trading licenses by issuing *Badan Pengawas Perdagangan Berjangka Komoditi (Bappebti)* Regulation Number 7 of 2020. In that regulation, 229 cryptocurrencies can legally be traded in Indonesia (Hafishina et al., 2023).

At the end of February 2021, *Bappebti* reported that cryptocurrency investors in Indonesia reached 4.2 million people. Based on Indonesia Stock Exchange (IDX) data in the same period, it outnumbered stock investors, which amounted to 2 million accounts (Arbina & Putuhena, 2022). This growth in the number of investors is in line with the increase in transaction volume. Indonesia's cryptocurrency asset trading transactions amounted to IDR 64.9 trillion in 2020. In 2021, transaction volume soared to IDR 859.4 trillion (Afani & Tambunan, 2022). Nevertheless, starting in 2022, Indonesia's cryptocurrency investment has decreased.

Based on the latest data from *Bappeti*, it is known that the number of Indonesian cryptocurrency investors until the end of December 2022 is 16.7 million people; this means that there was an increase of 5.46 million investors in the year. Ironically, Indonesia's cryptocurrency transactions in 2022 are around IDR 290 trillion, plummeting from 2021, reaching IDR 895 trillion (Budiman et al., 2023). Cryptocurrency investment has the characteristics of high risk and high return. One of the big risks to cryptocurrencies is their investments that have no collateral (Chenguel, 2023). The value of cryptocurrencies will disappear if the public no longer uses them.

Some of these reasons are believed to be factors causing investors to start leaving this type of investment (Budiman et al., 2023; Kerr et al., 2023)

This contradicts the research conducted by Son & Jeong (2023), a positive and significant effect of sensation seeking on stock addiction attested in that study. Furthermore, some investments were identified to emulate problem gambling behavior. Both trading and gambling activities possibly satisfy the needs of high Sensation Seekers with their risk level (Antonelli-Filho et al., 2021). A "crypto-addict" tends to crave to gain the amount of their loss, which causes them to return to the sensation of winning (Youn et al., 2016). High sensation-seekers are impulsive and sensitive to reward (Zuckerman, 1985). However, these previous research findings focused on the financial behavior of stock investors. Although stocks and crypto have some similarities, there may be differences in the financial behavior of investors. Each investment has a different risk level and volatility that might lead to various behavioral changes in investors.

A person's behavioral finances sometimes become irrational. For some people, money, savings, and debt are used only to seek new sensations or experiences (Rabbani et al., 2021). In the case of the ASIX cryptocurrency asset value, which fell by 48% in February 2022. The decline of the ASIX token occurred just a few hours after Bappebti announced that asset trading would be banned. This prompted several investors to question or even complain about the phenomenon through their social media platforms. As reported by kumparan.com, it is known that ASIX cryptocurrency investors are representatives of people who invest without fully understanding the risks in the investment world.

For ASIX cryptocurrency investors, emotional intelligence is needed to make investment decisions. Emotional intelligence can help investors when making decisions (Ahmad, 2018). In addition, emotional intelligence allows investors to control themselves more effectively in situations and conditions beyond expectations (Raheja & Dhiman, 2020). In another case, reported by forbes.com in May 2022, it was stated that the decline in the value of cryptocurrency assets was caused more by panic selling. This condition further down the value of investments in Bitcoin, Ethereum, BNB, XRP, Cardano, Solana, and TerLuna.

Asosiasi Pedagang Aset Kripto Indonesia (Aspakrindo) once revealed complaints of losses in cryptocurrency investments from someone who works as a farmer. DetikFinance (2023) reported in January 2023 that farmers are willing to sell buffalo and rice fields to buy local coin tokens. *Aspakrindo* even mentioned that the local coin was missing from *Bappeti's* list of legal assets. In this case, it can be concluded that the farmer does not have qualified financial literacy. The farmer dares to invest in cryptocurrency simply due to the influence of artists or influencers.

Undeniably, one factor causing the growth of the cryptocurrency investment market in Indonesia is the role of influencers, commonly called affiliates (Arslanian,

2022). The affiliates will uniquely promote a particular investment asset (Arbina & Putuhena, 2022). For example, by sharing implicit information, such as showing ownership of certain assets through their social media platforms (Kim & Kim, 2021). Nevertheless, investors need foresight to sort out the information provided (Chenguel, 2023). This indicates that the perception of information quality is essential to investment.

Previous studies have proven that there is a clear relationship between sensation-seeking, emotional intelligence, and perceived information quality on financial behavior (Antonelli-Filho et al., 2021; Sashikala & Chitramani, 2017; Zer et al., 2023). Yet, a concern forms to give more attention to how these psychological aspects partially influence financial behavior. Moreover, there are still some mixed results on the effect of sensation-seeking on financial behavior. Furthermore, the existing studies did not discuss its effect on specific financial behavior as cryptocurrency investment.

This research was conducted to understand and analyze the financial behavior of investors. Another purpose of this study is to prove the concepts of sensation-seeking, emotional intelligence, and information quality, which are assumed to be strong predictors of influencing behavioral finance. The results of this study are expected to increase investors' vigilance since some cases of losses might interfere with their economic and psychological conditions. A significant result is also foreseen to encourage investors to be more cautious, start investing based on analysis, and act rationally. Therefore, this study is devoted to focus on the behavioral finance of cryptocurrency investors in Indonesia.

THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

Cumulative Prospect Theory

Prospect theory (PT) is formulated as a substitute for expected utility (EU) theory (Richter et al., 2019). Kahneman & Tversky realized that there is a condition in which individuals make unpredictable decisions in risky situations. EU theory does not describe this (Vaid & Chaudhary, 2022) in cases such as cryptocurrency investment decision-making. The facts show that individuals as investors have behaviors such as seeking or expecting risk. For example, when an investor is faced with a situation that has the potential to give a profit of "p" or a loss of "q," then the investor tends to choose a gain of " p" even though it is risky.

PT's main element is converting a single probability function into a decision function (Barberis et al., 2021). However, this view is considered to have weaknesses. Earlier literature noted that PT has a weighting of probability functions that violate stochastic dominance (Bernheim & Sprenger, 2020; Lu et al., 2022). For example, when investors make transactions of "X" amount with profit probability "p." Then we

can assume the investor does something similar next. Then, the probability of profit becomes "p/2". Mathematically, the total weight of both investment events will change the weight of one investment period. Of course, this will cause biased values (Kourouxous & Bauer, 2019).

"Rank-dependent" probability weighting is emerging to solve the stochastic dominance problem (Bernheim & Sprenger, 2020). Kahneman & Tversky formulated a new version as a replacement for PT, namely cumulative prospect theory (CPT). Thus, CPT has replaced PT as the basis for a model of decision-making behavior in uncertain conditions such as those experienced by investors (Ruggeri et al., 2020). In this study, uncertain or risky cryptocurrency market conditions can be stimulated by several factors, such as sensation-seeking, emotional intelligence, and perceived information quality.

Behavioral Finance

Behavioral finance refers to the study concerned with the impact of psychological aspects on investor behavior. In this concept, the process of forecasting and investor decision-making is determined psychologically. Previous literature proves that asset validation focuses on investor behavioral reactions. Other literature mentions behavioral finance is how individuals respond to the surrounding environment and interpret it for investment decision-making.

The concept of behavioral finance originated from the inability of traditional finance to reveal anomalies in money market or capital market phenomena (Gambetti & Giusberti, 2019). Previous studies discussing behavioral finance are inseparable from investors' emotional strength and psychology (Ingale & Paluri, 2022; Sharma & Kumar, 2019). This is evidence that the psychological aspects of investors influence the investment decision process. Wood & Zaichkowsky (2004) concluded that investor behavior broadly includes control, confidence, risk attitudes, and investment horizon (Ahmad, 2018).

Sensation-seeking

Investment in any form is a risky action. Experts agree that the greater the risk in investment, the greater the potential value obtained (Delfabbro et al., 2021; Kerr et al., 2023). Risk-taking means engaging oneself to consider possible desired and undesirable outcomes (Zhao & Zhang, 2021). Hoyle describes measurable risk-taking behavior as the Brief Sensation Seeking Scale (BSSS) (Mills & Nower, 2019).

Sensation-seeking is a personality trait in individuals seeking new experiences (Ravert & Donnellan, 2021). Individuals consider intense and risky activities as entertainment that can satisfy their needs (Chase & Ghane, 2023; Rabbani et al., 2021). Previous literature mentions that sensation-seeking paradigms are typically related to physical risk (Kar & Tarafder, 2020), social environment (Harris et al., 2023), or financial investment behavior (Antonelli-Filho et al., 2021).

Claudia & Setiawan (2021) found no significant relationship between sensation-seeking and behavioral finance. However, this study was only conducted on students focusing on behavioral finance in terms of spending pocket money, not on investment. Of course, it will give different results when applied to investors. However, the results of the Claudia & Setiawan (2021) study prove a negative influence between sensation-seeking and behavioral finance. In the end, researchers assume that sensation-seeking has a direct and inversely proportional impact on the mindset of investors at the time of investment decision-making. Consequently, this study may lead to the development of the following hypothesis:

H1: Sensation-seeking has a negative and significant effect on behavioral finance.

Emotional Intelligence

Intelligence is essential for individuals to adapt to the environment (Sternberg, 2019). Differences in individual intelligence levels mean differences in behavior (Raheja & Dhiman, 2020). Previous literature divided intelligence into cognitive and emotional intelligence (Ackert et al., 2020). Emotional intelligence is defined as the ability that allows individuals to use their emotions effectively (Kotsou et al., 2019).

Emotions are motive forces that provoke thoughts (Kanesan & Fauzan, 2019). Cognitive intelligence helps investors with reasoning and analysis of market movements. However, the ability to predict decision outcomes is only obtained from emotional intelligence (Ahmad, 2018; Ahn & Kim, 2021). Wong & Law (2017) measured emotional intelligence using the Wong and Law Emotional Intelligence Scale (WLEIS), and it proved valid to use in several different cultures (Di et al., 2021).

In a meta-analysis conducted by Sashikala & Chitramani (2017), it is known that emotional intelligence has a strong relationship when associated with behavioral finance. Another study proved that emotional intelligence positively and significantly impacts behavioral finance (Ahmad, 2018). Song et al. (2023) state that emotional intelligence as a moderator variable can strengthen the influence of the relationship between financial risk tolerance and behavioral finance. The researchers assume that investors need emotional intelligence before making investment decisions. Consequently, this study may lead to the development of the following hypothesis:

H2: Emotional intelligence has a positive and significant effect on behavioral finance.

Perceived Information Quality

Investors with a high level of experience always look for detailed information before making decisions (Gill et al., 2018). The more relevant the information obtained,

the higher the level of investment confidence. Conversely, incomplete information encourages errors in decision-making. Experts agree that accurate data availability will benefit investors when making investment decisions (Yu et al., 2019).

Another study mentioned that investors with more information do not guarantee that they will get more benefits (Zer et al., 2023). This is because not all information circulating to the public is valid (Pernagallo & Torrisi, 2022). Delone & McLean (2003) stated that information quality could be measured using four indicators: accurate, relevant, reliable, and simple (Malaquias & Albertin, 2019).

The relationship between perceived information quality and behavior has been extensively researched before. Previous studies have found positive and significant results on both variables, such as in e-commerce consumers (Huseynov & Özkan Yıldırım, 2019) or in measuring interest in online platform adoption learning (Singh et al., 2021). Although no specific studies have been applied to behavioral finance, researchers assume that information quality perceptions are essential to assist investors in making investment decisions. Consequently, this study may lead to the development of the following hypothesis:

H3: Perceived information quality positively and significantly affects behavioral finance.

Based on the theoretical and empirical studies that have been described, a research hypothesis model was developed, as shown in Figure 1. Indicators were adapted based on previous literature to measure the variables used in this study (Ahmad, 2018; Di et al., 2021; Malaquias & Albertin, 2019; Mills & Nower, 2019). The complete indicators can be seen in Table 1.

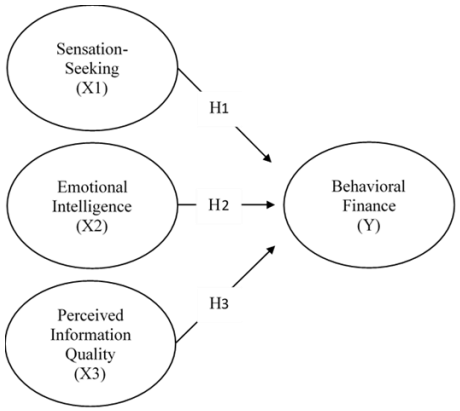


Figure 1
Research Framework

Table 1
Variables and Indicators

No.	Variable	Code	Indicator	Source
1	Sensation-seeking (X_1)	X_1.1	Experience Seeking	Hoyle et al. (2002); Mills & Nower (2019)
		X_1.2	Boredom Susceptibility	
		X_1.3	Thrill and Adventure Seeking	
		X_1.4	Disinhibition	
2	Emotional Intelligence (X_2)	X_2.1	Self-Emotion Appraisal	Di et al. (2021); Wong & Law (2017)
		X_2.2	Other´s Emotion Appraisal	
		X_2.3	Use of Emotion	
		X_2.4	Regulation of Emotion	
3	Perceived Information Quality (X_3)	X_3.1	Accurate	Delone & McLean (2003); Malaquias & Albertin (2019)
		X_3.2	Relevant	
		X_3.3	Reliability	
		X_3.4	Simple	
4	Behavioral Finance (Y)	Y.1	Control	Ahmad (2018); Wood & Zaichkowsky (2004)
		Y.2	Confidence	
		Y.3	Risk Attitudes	
		Y.4	Investment Horizon	

METHOD

This study used a quantitative approach. The type of research used is ex post facto (Swift & Piff, 2020). This research was conducted throughout Indonesia. The population of cryptocurrency investors in Indonesia throughout 2022 is 16.7 million people. The sample criteria in this study are not limited to respondents' gender, domicile, or transaction volume. To maintain the validity of the research results, selected respondents were limited to cryptocurrency investors in Indonesia who had invested more than one year and reduced their transaction volume. Researchers do not get exact information on the number of investors following the criteria, so it can be concluded that the population in the study is infinite.

This study uses non-probability sampling techniques with the quota sampling method in data collection (Bhardwaj, 2019). Data was collected by distributing online questionnaires to respondents with Google Forms shared through social media platforms. Data were collected from January 2023 until the sample numbers were met. This is based on the consideration that from 2022 to early 2023, there is a phenomenon where the number of cryptocurrency investors in Indonesia begins to experience a decrease in transaction volume (Hamdika et al., 2022).

The number of samples was determined using the formula (Levy & Lemeshow, 2008), with a significance level of 5%. This is under the statement (Rubanovich, 2019) that a significance level 0.05 is acceptable for hypothesis testing experiments. Researchers did not find a "p" value in earlier literature. Researchers set the "p" value with a maximum estimation of 0.5. The calculation results were obtained from as many as 384 respondents. Researchers join forums and communities of cryptocurrency investors with many social media followers to facilitate data collection. For example,

Sarjana Kripto (Telegram), @cryptomedia_id (Twitter). In addition, researchers also follow influential cryptocurrency influencers in Indonesia, such as @belvinvvip (Instagram) and @stevensuhadi (Twitter) accounts.

The data analysis technique in this study uses linear regression (Vining et al., 2021). In this study, two-way hypothesis testing was carried out. This is done because the proposed hypothesis has yet to be known in any direction. For example, in the first hypothesis, previous studies have failed to prove the significance level between sensation-seeking and behavioral finance (Claudia & Setiawan, 2021). Based on this literature, sensation-seeking also has an inverse (negative) impact on investors' mindsets. Similarly, the third hypothesis is the novelty of this study. Until now, no literature directly links perceived information quality to behavioral finance. Furthermore, novelty is also found in the research model used, where there has been no previous research that combines sensation-seeking, emotional intelligence, and perceived information quality, directly impacting behavioral finance.

RESULT AND DISCUSSION

Researchers conducted several tests to explore the impact of Sensation-seeking (X_1), Emotional Intelligence (X_2), and Perceived Information Quality (X_3) on Behavioral Finance (Y) of cryptocurrency investors in Indonesia. The first step is to test validity, namely testing the accuracy of questionnaires in revealing something to be measured (Rönkkö & Cho, 2022). Next, researchers conducted a reliability test to assess the consistency of the questionnaire used (Sürücü & Maslakçi, 2020).

Validity and Reliability Testing

The test was conducted on 30 initial respondents. By looking at the level of significance used, which is 5%, it is determined that the r-table in this study is 0.1001 (Rönkkö & Cho, 2022). It can be concluded that the questionnaire used is valid (r > r-table). The complete test results can be seen in Table 2.

Table 2
Validity Test

Variable	Code	r-value	Result
Sensation-seeking (X_1)	X_1.1	0.669	Valid
	X_1.2	0.702	Valid
	X_1.3	0.658	Valid
	X_1.4	0.686	Valid
Emotional Intelligence (X_2)	X_2.1	0.712	Valid
	X_2.2	0.703	Valid
	X_2.3	0.714	Valid
	X_2.4	0.676	Valid
Perceived Information Quality (X_3)	X_3.1	0.719	Valid
	X_3.2	0.708	Valid
	X_3.3	0.711	Valid
	X_3.4	0.701	Valid
Behavioral Finance (Y)	Y.1	0.708	Valid
	Y.2	0.707	Valid

Variable	Code	r-value	Result
	Y.3	0.723	Valid
	Y.4	0.731	Valid

The reliability of the research was determined by calculating Cronbach's alpha. Cronbach's alpha of 0.70 was determined to be the lowest possible value (Sürücü & Maslakçi, 2020). It can be concluded that the questionnaire used is reliable. The complete test results can be seen in Table 3.

Table 3
Reliability Test

Variable	Cronbach's Alpha	Result
Sensation-seeking (X_1)	0.716	Reliable
Emotional Intelligence (X_2)	0.735	Reliable
Perceived Information Quality (X_3)	0.724	Reliable
Behavioral Finance (Y)	0.727	Reliable

Demographic Characteristics of The Respondents

The online questionnaire has been distributed to 550 potential respondents through various predetermined social media accounts. After doing the calculations, it was found that only 477 questionnaires were returned. In addition, 29 incomplete questionnaires were also found. This study only used 384 questionnaire answers fulfilled first (based on Levy & Lemeshow's (2008) formula with a significance level of 5%). Next, researchers process the collected data to determine the characteristics of the sample and conduct subsequent testing. The complete respondent's characteristics can be seen in Table 4.

In Table 4, it can be seen that in terms of gender, men dominate compared to women, namely 72%. Meanwhile, regarding respondents' age, researchers found that investors aged 24-27 were the largest (47%). Researchers also found that the majority of respondents had professions as government employees.

Table 4
The Demographic Profile of The Respondents

Description of the Respondent	Quantity	Percentage
Gender		
Man	276	72%
Woman	108	28%
Total	384	100%
Age		
<20 years	8	2%
20 – 23 years	99	26%
24 – 27 years	181	47%
28 – 31 years	50	13%
>31 years	46	12%
Total	384	100%
Occupation		
Student	88	23%
Civil Servant/Soldier/Police/State-Owned/ Regional-owned enterprises	138	36%

Description of the Respondent	Quantity	Percentage
Private employees	69	18%
Entrepreneur	81	21%
Others	8	2%
Total	384	100%

Hypothesis Testing

The basis for decision-making of hypothesis tests (partial t-tests) is carried out through two references. The first is by looking at the significance value, while the second is by comparing the t-count value against the t-table (Vining et al., 2021). Based on the results of hypothesis testing (Table 5), it can be seen that the significance value of each variable tested < 0.05. Table 5 also shows the t-count values of each variable > from the t-table (1.966). Referring to the two test references, it can be concluded that variable X significantly influences variable Y.

Based on Table 5, the value of the constant and coefficient of each variable can also be known. Such constants and coefficients are important to model regression equations. Linear regression analysis was performed to understand the direction and magnitude of the influence of the variables Sensation-seeking (X_1), Emotional Intelligence (X_2), and Perceived Information Quality (X_3) on Behavioral Finance (Y). Finally, the regression equation in this study can be described as follows:

$$Y = 1.496 - 0.147\,X1 + 0.180\,X2 + 0.154\,X3 + e \quad \text{..... 1}$$

Table 5
t-Test Partial

Coefficients Model		Unstandardized Coefficients		Standardized Coefficients		
		β	Std. Error	β	t	Sig.
1	(Constant)	1.496	2.039		2.695	0.008
	Sensation-seeking	-0.147	0.121	-0.179	2.038	0.014**
	Emotional Intelligence	0.180	0.114	0.195	2.047	0.013**
	Perceived Information Quality	0.154	0.101	0.183	2.026	0.007**

a. Dependent Variable: Behavioral Finance

Based on the regression equation model, it can be interpreted as follows:

1. The constant value is 1.496. This means that if all variable X does not increase, variable Y will increase by 1.496.
2. The value of the coefficient of the Sensation-seeking variable (X1) is -0.147. This means an inversely proportional relationship exists with the Behavioral Finance variable (Y). The test results also show a negative and significant relationship (alpha 5%) between the two variables.
3. The value of the coefficient of the variable Emotional Intelligence (X2) is 0.180. This means a unidirectional relationship exists with the variable Behavioral

Finance (Y). The test results also show a positive and significant relationship (alpha 5%) between the two variables.

4. The value of the coefficient of the variable Perceived Information Quality (X_3) is 0.154. This means a unidirectional relationship exists with the variable Behavioral Finance (Y). The test results also show a positive and significant relationship (alpha 5%) between the two variables.

Sensation-seeking on Behavioral Finance

This study confirms the influence of sensation-seeking on behavioral finance. The test results in Table 5 show a negative and significant relationship. This means that the hypothesis proposed in this study is accepted. This result differs slightly from the research findings (Claudia & Setiawan, 2021). Cryptocurrency investors in Indonesia are not 'new players' in the investment world. Most have invested in other forms, such as stocks (Hartono & Budiarsih, 2022) or foreign exchange (Hasani, 2022). The mechanisms for investing in stocks, foreign exchange, and cryptocurrencies have different levels of risk and volatility (Chenguel, 2023; Warsito & Robiyanto, 2020).

This research also proves that decision-making in cryptocurrency investment is not only due to sensation-seeking. Some investors think investing in cryptocurrencies is just part of a strategy to reduce the risk in their portfolio or even to get more profit. Previous studies also confirmed this (Elsayed et al., 2022; Hasani, 2022). For example, an investor prefers to invest in stock assets of "p" and cryptocurrency assets of "q." Investors will only lose a little if the value of stock assets falls globally. Conversely, investors still have potential profits in other assets.

An interesting phenomenon is found in this study. The data shows that most respondents work as government employees with a fixed income source from honorarium or salary. This situation is not surprising because the source of purchasing cryptocurrency assets is known to come from salaries. However, this is unique if 23% of the respondents are still students, as it is known that students need a steady income. This finding is in line with CPT, where the fundamental nature of investors is that they tend to seek profits even though they are at risk (Delfabbro et al., 2021; Zhao & Zhang, 2021).

Emotional Intelligence on Behavioral Finance

The results of hypothesis testing in Table 5 show a positive and significant relationship between emotional intelligence and behavioral finance. The hypothesis put forward in this study is declared accepted. This result aligns with previous literature, which found similar findings (Ahmad, 2018; Sashikala & Chitramani, 2017). According to the CPT paradigm, this research proves that a risky situation requires several alternatives and conditions before deciding.

One of the essential characteristics of investing is having a risk. Investment

value in cryptocurrency assets is known to be unstable (often changing) and very high risk (Chenguel, 2023; Warsito & Robiyanto, 2020). Nonetheless, investors believe cryptocurrency investments also have high expectations of returns (Ahn & Kim, 2021). Based on the data on the characteristics of the respondents, it can be seen that men (72%) dominate cryptocurrency asset ownership compared to women. This is an anomaly compared to previous studies, which state that women can recognize emotions more than men in various (Fernández-Abascal & Martín-Díaz, 2019; Hidayah et al., 2020). However, previous studies also noted that this difference was not significant.

The findings of this study are reasonable. Apart from having high emotional intelligence, women are also known to have more anxiety than men (Jenkins et al., 2021). Previous studies have confirmed this statement. In some dangerous and risky situations, for example, extreme sports (Fernández et al., 2020), Men are more able to deal with it than women. Regarding risky investment situations, men with logical minds feel more competent in making decisions than women. Even so, it is a fact that emotional intelligence is an absolute requirement that investors, both men and women, must have (Ahmad, 2018; Raheja & Dhiman, 2020).

Perceived Information Quality on Behavioral Finance

The final test in this study relates to the relationship between perceived information quality and behavioral finance. Based on Table 5, it can be seen that there is a positive and significant relationship. It can be concluded that the proposed hypothesis is accepted. These results are essential in measuring behavioral finance, especially for cryptocurrency investors in Indonesia. Regarding the CPT, investor information and knowledge determine individual decision-making in risky situations (Ruggeri et al., 2020).

The Indonesian government has issued PMK No 68/PMK.03/2022 concerning VAT and Income Tax on Crypto Asset Trading Transactions, which take effect from 1 May 2022 (Hartono & Budiarsih, 2022). This research finds that many cryptocurrency investors in Indonesia still need to be aware of this tax scheme. However, that does not mean that information about asset taxes in the form of cryptocurrencies is not good quality. It's just that each investor's perception of receiving information is different.

When cryptocurrency investors obtain this information, they will behave differently in making decisions (Yu et al., 2019; Zer et al., 2023). This is reinforced by the findings of previous studies, which state that some cryptocurrency investors are motivated because there is no asset ownership tax (Afani & Tambunan, 2022; Hamdika et al., 2022). Hartono & Budiarsih (2022) stated that implementing crypto taxes generally did not get resistance from investors. Of course, this aligns with the CPT paradigm, where investors dare to take risks to make a profit. One thing that is in the spotlight is that the circulation of information currently seems unstoppable,

especially after the development of the internet (Faccia, 2019). This situation is commonly known as information overload. Cryptocurrency investors can get information anytime, anywhere, and from any source (Niu et al., 2021). Unfortunately, there is no guarantee that the information investors receive is of good quality or false. This phenomenon proves that perceived information quality significantly impacts behavioral finance.

CONCLUSION AND RECOMMENDATION

This study presented two psychological and other aspects that influence the financial behavior on cryptocurrency investors: sensation-seeking, emotional intelligence, and perceived information quality. According to this study, sensation-seeking negatively and significantly affects behavioral finance. It was found that Indonesian investors are not "new players" in the investment world who are thrilled to seek sensations to achieve satisfaction. Our findings also found that emotional intelligence is positive and significantly influences the behavioral finance of cryptocurrency investors. Moreover, the role of gender also plays a part in the emotional intelligence level. The final results of this study are related to the relationship between perceived information quality and behavioral finance. We found a positive and significant effect of perceived information quality on behavioral finance, indicating some errors due to incomplete information. In addition, investors' perception of receiving information also influences decision-making.

This study uses a careful methodological design but still has some limitations. First, this study does not limit respondents based on professional characteristics or age. The research findings show the same phenomenon as those of previous studies. It is known that most cryptocurrency investors in Indonesia work as government employees and belong to the millennial generation. However, this number is similar to the others. Future studies should be carried out in a more focused manner. For example, the researcher refers to respondents with a particular profession or age range. Second, this research data was collected from the beginning of 2023. This research collected data after PMK No. 68/PMK.03/2022. However, this study collected data relatively quickly (2 months). If the research is conducted longitudinally, it is hoped to give different results. Future studies should take this into account.

Third, we realize that the psychological aspects of investors are complex. Indonesian cryptocurrency investors come from different backgrounds, education, regions, and cultures. In addition, the experience experienced by each investor is also different. Future studies should add control variables to obtain a more complete model. We also recommend that future studies use the experience as the first antecedent in research. In general, this study provides an overview of the behavior of Indonesian cryptocurrency investors from a psychological perspective. Theoretically, this research strengthens the understanding related to behavioral finance. The empirical

research findings show a clear relationship between sensation-seeking, emotional intelligence, perceived information quality, and behavioral finance. This research is inseparable from several limitations, so further consideration is needed for future studies.

REFERENCES

Ackert, L. F., Deaves, R., Miele, J., & Nguyen, Q. (2020). Are time preference and risk preference associated with cognitive intelligence and emotional intelligence? *Journal of Behavioral Finance*, *21*(2), 136–156. https://doi.org/10.1080/15427560.2019.1663850

Afani, Y., & Tambunan, M. R. U. D. (2022). Analisis kebijakan pemajakan atas tansaksi perdagangan aset kripto di Indonesia. *Jurnal Riset Akuntansi & Perpajakan (JRAP)*, *9*(2), 267–282. https://doi.org/10.35838/jrap.2022.009.02.24

Ahmad, M. (2018). Impact of neurotransmitters, emotional intelligence and personality on investor's behavior and investment decisions. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, *12*(1), 330–362.

Ahn, Y., & Kim, D. (2021). Emotional trading in the cryptocurrency market. *Finance Research Letters*, *42*, 101912. https://doi.org/10.1016/j.frl.2020.101912

Al-Mansour, B. Y. (2020). Cryptocurrency market: Behavioral finance perspective. *The Journal of Asian Finance, Economics and Business*, *7*(12), 159–168. https://doi.org/10.13106/jafeb.2020.vol7.no12.159

Antonelli-Filho, P., Bressan, A. A., Vieira, K. M., & Potrich, A. C. G. (2021). Sensation seeking and overconfidence in day traders: Evidence from Brazil. *Review of Behavioral Finance*, *13*(5), 486–501. https://doi.org/10.1108/RBF-05-2020-0104

Arbina, M., & Putuhena, M. I. F. (2022). Tata kelola pembentukan regulasi terkait perdagangan mata uang kripto (cryptocurrency) sebagai aset kripto (crypto asset). *Mahadi: Indonesia Journal of Law*, *1*(1), 33–57. https://doi.org/10.32734/mah.v1i1.8314

Arslanian, H. (2022). The history of money. In *The Book of Crypto* (pp. 1–43). Springer International Publishing. https://doi.org/10.1007/978-3-030-97951-5_1

Barberis, N., Jin, L. J., & Wang, B. (2021). Prospect theory and stock market anomalies. *The Journal of Finance*, *76*(5), 2639–2687. https://doi.org/10.1111/jofi.13061

Bernheim, B. D., & Sprenger, C. (2020). On the empirical validity of cumulative

prospect theory: Experimental evidence of rank-independent probability weighting. *Econometrica*, *88*(4), 1363–1409. https://doi.org/10.3982/ECTA16646

Bhardwaj, P. (2019). Types of sampling in research. *Journal of the Practice of Cardiovascular Sciences*, *5*(3), 157–163. https://doi.org/10.4103/jpcs.jpcs_62_19

Budiman, J., Calystania, V., Novia, J., Sisca, V., Vira, V., & Stephanie, S. (2023). Evaluasi perilaku investor crypto individual dalam pengambilan keputusan investasi. *Economics and Digital Business Review*, *4*(1), 237–249. https://doi.org/10.37531/ecotal.v4i1.311

Chase, H. W., & Ghane, M. (2023). Seeking pleasure, finding trouble: Functions and dysfunctions of trait sensation seeking. *Current Addiction Reports*, *10*(2), 140–148. https://doi.org/10.1007/s40429-023-00484-5

Chenguel, M. B. (2023). Blockchain and cryptocurrency: Development without regulation? In *International Conference on Business and Technology* (pp. 663–679). Springer. https://doi.org/10.1007/978-3-031-08093-7_44

Claudia, C., & Setiawan, E. (2021). The influence of emerging adulthood status and sensation seeking on financial behavior of Petra Christian University students. *International Journal of Financial and Investment Studies (IJFIS)*, *1*(2), 94–100. https://doi.org/10.9744/ijfis.1.2.94-100

Delfabbro, P., King, D. L., & Williams, J. (2021). The psychology of cryptocurrency trading: Risk and protective factors. *Journal of Behavioral Addictions*, *10*(2), 201–207. https://doi.org/10.1556/2006.2021.00037

Delone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, *19*(4), 9–30. https://doi.org/10.1080/07421222.2003.11045748

DetikFinance. (2023). *Kisah miris petani jual sawah dan kerbau demi token artis, kini merugi*. Detik.Com.

Di, M., Jia, N., Wang, Q., Yan, W., Yang, K., & Kong, F. (2021). A bifactor model of the Wong and Law Emotional Intelligence Scale and its association with subjective well-being. *The Journal of Positive Psychology*, *16*(4), 561–572. https://doi.org/10.1080/17439760.2020.1791947

Elsayed, A. H., Gozgor, G., & Lau, C. K. M. (2022). Risk transmissions between bitcoin and traditional financial assets during the COVID-19 era: The role of global uncertainties. *International Review of Financial Analysis*, *81*, 102069. https://doi.org/10.1016/j.irfa.2022.102069

Faccia, A. (2019). Data and information flows: Assessing threads and opportunities to

ensure privacy and investment returns. *Proceedings of the 2019 3rd International Conference on Cloud and Big Data Computing*, 54–59. https://doi.org/10.1145/3358505.3358508

Fernández-Abascal, E. G., & Martín-Díaz, M. D. (2019). Relations between dimensions of emotional intelligence, specific aspects of empathy, and non-verbal sensitivity. *Frontiers in Psychology*, *10*, 1066. https://doi.org/10.3389/fpsyg.2019.01066

Fernández, M. M., Brito, C. J., Miarka, B., & Díaz-de-Durana, A. L. (2020). Anxiety and emotional intelligence: Comparisons between combat sports, gender and levels using the trait meta-mood scale and the inventory of situations and anxiety response. *Frontiers in Psychology*, *11*, 130–138. https://doi.org/10.3389/fpsyg.2020.00130

Gambetti, E., & Giusberti, F. (2019). Personality, decision-making styles and investments. *Journal of Behavioral and Experimental Economics*, *80*, 14–24. https://doi.org/10.1016/j.socec.2019.03.002

Gill, S., Khurshid, M. K., Mahmood, S., & Ali, A. (2018). Factors effecting investment decision making behavior: The mediating role of information searches. *European Online Journal of Natural and Social Sciences*, *7*(4), 758–767.

Hafishina, A. D. R., Abraham, J., Warnars, H. L. H. S., Manurung, R. H., & Nainggolan, T. (2023). Disrupting money: Psychological factors of investment biases in cryptocurrency. *TEM Journal*, *12*(1), 482–493. https://doi.org/10.18421/TEM121-58

Hamdika, M., Saragih, L., & Sinaga, M. H. (2022). Perbandingan kinerja cryptocurrency bitcoin, saham, dan emas sebagai alternatif investasi tahun 2017-2021. *Economic Education and Entrepreneurship Journal*, *5*(1), 91–105. https://doi.org/10.23960/E3J/v5i1.91-105

Harris, B., McCredie, M. N., Truong, T., Regan, T., Thompson, C. G., Leach, W., & Fields, S. A. (2023). Relations between adolescent sensation seeking and risky sexual behaviors across sex, race, and age: A meta-analysis. *Archives of Sexual Behavior*, *52*(1), 191–204. https://doi.org/10.1007/s10508-022-02384-7

Hartono, S., & Budiarsih, R. (2022). Potensi kesuksesan penerapan pajak penghasilan terhadap transaksi aset kripto di Indonesia. *Jurnal Pajak Dan Keuangan Negara (PKN)*, *4*(1), 132–146. https://doi.org/10.31092/jpkn.v4i1.1740

Hasani, M. N. (2022). Analisis cryptocurrency sebagai alat alternatif dalam berinvestasi di Indonesia pada mata uang digital bitcoin. *Jurnal Ilmiah Ekonomi Bisnis*, *8*(2), 329–344. https://doi.org/10.35972/jieb.v8i2.762

Hendershott, T., Zhang, X. (Michael), Zhao, J. L., & Zheng, Z. (2021). Fintech as a game changer: Overview of research frontiers. *Information Systems Research*,

32(1), 1–17. https://doi.org/10.1287/isre.2021.0997

Hidayah, B., Ariyanto, A. A., & Hariyadi, S. (2020). Apakah emotional intelligence dipengaruhi gender? Analisis perbedaan kecerdasan emosi kaitannya dengan manajemen konflik suami-isteri dalam masa kritis perkawinan. *Jurnal Psikologi Udayana*, *7*(2), 43–52. https://doi.org/10.24843/JPU.2020.v07.i02.p05

Hoyle, R. H., Stephenson, M. T., Palmgreen, P., Lorch, E. P., & Donohew, R. L. (2002). Reliability and validity of a brief measure of sensation seeking. *Personality and Individual Differences*, *32*(3), 401–414. https://doi.org/10.1016/S0191-8869(01)00032-0

Huseynov, F., & Özkan Yıldırım, S. (2019). Online consumer typologies and their shopping behaviors in B2C e-commerce platforms. *SAGE Open*, *9*(2), 1–19. https://doi.org/10.1177/2158244019854639

Ingale, K. K., & Paluri, R. A. (2022). Financial literacy and financial behaviour: A bibliometric analysis. *Review of Behavioral Finance*, *14*(1), 130–154. https://doi.org/10.1108/RBF-06-2020-0141

Jenkins, P. E., Ducker, I., Gooding, R., James, M., & Rutter-Eley, E. (2021). Anxiety and depression in a sample of UK college students: A study of prevalence, comorbidity, and quality of life. *Journal of American College Health*, *69*(8), 813–819. https://doi.org/10.1080/07448481.2019.1709474

Kanesan, P., & Fauzan, N. (2019). Models of emotional intelligence: A review. *E-BANGI*, *16*(7), 1–9.

Kar, D., & Tarafder, S. (2020). Sensation seeking and aggression in adventure sportspersons: A comparative study. *Journal of Psychosocial Research*, *15*(1), 137–149. https://doi.org/10.32381/JPR.2020.15.01.11

Kerr, D. S., Loveland, K. A., Smith, K. T., & Smith, L. M. (2023). Cryptocurrency risks, fraud cases, and financial performance. *Risks*, *11*(3), 51–65. https://doi.org/10.3390/risks11030051

Kim, D. Y., & Kim, H.-Y. (2021). Trust me, trust me not: A nuanced view of influencer marketing on social media. *Journal of Business Research*, *134*, 223–232. https://doi.org/10.1016/j.jbusres.2021.05.024

Kotsou, I., Mikolajczak, M., Heeren, A., Grégoire, J., & Leys, C. (2019). Improving emotional intelligence: A systematic review of existing work and future challenges. *Emotion Review*, *11*(2), 151–165. https://doi.org/10.1177/1754073917735902

Kourouxous, T., & Bauer, T. (2019). Violations of dominance in decision-making. *Business Research*, *12*(1), 209–239. https://doi.org/10.1007/s40685-019-0093-7

Levy, P. S., & Lemeshow, S. (2008). *Sampling of populations: Methods and applications* (4th ed.). New Jersey: John Wiley & Sons. https://doi.org/10.1002/9780470374597

Lu, T., Yuan, M., Wang, C., & Zhang, X. (2022). Histogram distortion bias in consumer choices. *Management Science*, *68*(12), 8963–8978. https://doi.org/10.1287/mnsc.2022.4306

Malaquias, R. F., & Albertin, A. L. (2019). Information technology investments versus the illusion of control bias. *International Journal of Business Information Systems*, *32*(4), 507–521.

Mills, D. J., & Nower, L. (2019). Preliminary findings on cryptocurrency trading among regular gamblers: A new risk for problem gambling? *Addictive Behaviors*, *92*, 136–140. https://doi.org/10.1016/j.addbeh.2019.01.005

Niu, Y., Ying, L., Yang, J., Bao, M., & Sivaparthipan, C. B. (2021). Organizational business intelligence and decision making using big data analytics. *Information Processing & Management*, *58*(6), 102725. https://doi.org/10.1016/j.ipm.2021.102725

Pernagallo, G., & Torrisi, B. (2022). A theory of information overload applied to perfectly efficient financial markets. *Review of Behavioral Finance*, *14*(2), 223–236. https://doi.org/10.1108/RBF-07-2019-0088

Rabbani, A. G., Yao, Z., Wang, C., & Grable, J. E. (2021). Financial risk tolerance, sensation seeking, and locus of control among pre-retiree baby boomers. *Journal of Financial Counseling and Planning*, *32*(1), 146–157. https://doi.org/10.1891/JFCP-18-00072

Raheja, S., & Dhiman, B. (2020). How do emotional intelligence and behavioral biases of investors determine their investment decisions? *Rajagiri Management Journal*, *14*(1), 35–47. https://doi.org/10.1108/RAMJ-12-2019-0027

Ravert, R. D., & Donnellan, M. B. (2021). Impulsivity and sensation seeking: Differing associations with psychological well-being. *Applied Research in Quality of Life*, *16*(4), 1503–1515. https://doi.org/10.1007/s11482-020-09829-y

Richter, A., Ruß, J., & Schelling, S. (2019). Insurance customer behavior: Lessons from behavioral economics. *Risk Management and Insurance Review*, *22*(2), 183–205. https://doi.org/10.1111/rmir.12121

Rönkkö, M., & Cho, E. (2022). An updated guideline for assessing discriminant validity. *Organizational Research Methods*, *25*(1), 6–14. https://doi.org/10.1177/1094428120968614

Rubanovich, A. V. (2019). Redefining the critical value of significance level (0.005 instead of 0.05): The bayes trace. *Biology Bulletin*, *46*(11), 1449–1457.

https://doi.org/10.1134/S1062359019110086

Ruggeri, K., Alí, S., Berge, M. L., Bertoldo, G., Bjørndal, L. D., Cortijos-Bernabeu, A., Davison, C., Demić, E., Esteban-Serna, C., Friedemann, M., Gibson, S. P., Jarke, H., Karakasheva, R., Khorrami, P. R., Kveder, J., Andersen, T. L., Lofthus, I. S., McGill, L., Nieto, A. E., … Folke, T. (2020). Replicating patterns of prospect theory for decision under risk. *Nature Human Behaviour*, *4*(6), 622–633. https://doi.org/10.1038/s41562-020-0886-x

Sashikala, V., & Chitramani, P. (2017). A review on emotional intelligence and investment behavior. *International Journal of Management (IJM)*, *8*(3), 32–41.

Sharma, A., & Kumar, A. (2019). A review paper on behavioral finance: Study of emerging trends. *Qualitative Research in Financial Markets*, *12*(2), 137–157. https://doi.org/10.1108/QRFM-06-2017-0050

Singh, A., Sharma, S., & Paliwal, M. (2021). Adoption intention and effectiveness of digital collaboration platforms for online learning: The Indian students' perspective. *Interactive Technology and Smart Education*, *18*(4), 493–514. https://doi.org/10.1108/ITSE-05-2020-0070

Son, M., & Jeong, G.-C. (2023). Influence of sensation seeking and life satisfaction expectancy on stock addiction tendency: Moderating effect of distress tolerance. *Behavioral Sciences*, *13*(5), 378–387. https://doi.org/10.3390/bs13050378

Song, C. L., Pan, D., Ayub, A., & Cai, B. (2023). The interplay between financial literacy, financial risk tolerance, and financial behaviour: The moderator effect of emotional intelligence. *Psychology Research and Behavior Management*, *16*, 535–548. https://doi.org/10.2147/PRBM.S398450

Sternberg, R. J. (2019). Cultural approaches to intelligence. In *Human Intelligence An Introduction* (pp. 174–201). Cambridge: Cambridge University Press. https://doi.org/10.1017/9781108610636.007

Sürücü, L., & Maslakçi, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, *8*(3), 2694–2726. https://doi.org/10.15295/bmij.v8i3.1540

Swift, L., & Piff, S. (2020). *Essential quantitative methods: For business, management and finance* (4th ed.). London: Bloomsbury Publishing.

Vaid, A. J., & Chaudhary, R. (2022). Review paper on impact of behavioral biases in financial decision- making. *World Journal of Advanced Research and Reviews*, *16*(2), 989–997. https://doi.org/10.30574/wjarr.2022.16.2.1236

Vining, G. G., Peck, E. A., & Montgomery, D. C. (2021). *Introduction to linear regression analysis* (6th ed.). New Jersey: John Wiley & Sons, Inc.

Warsito, O. L. D., & Robiyanto, R. (2020). Analisis volatilitas cryptocurrency, emas, dollar, dan indeks harga saham (IHSG). *International Journal of Social Science and Business*, *4*(1), 40–46. https://doi.org/10.23887/ijssb.v4i1.23887

Wong, C.-S., & Law, K. S. (2017). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. In *Leadership Perspectives* (pp. 97–128). London: Routledge. https://doi.org/10.4324/9781315250601-10

Wood, R., & Zaichkowsky, J. L. (2004). Attitudes and trading behavior of stock market investors: A segmentation approach. *Journal of Behavioral Finance*, *5*(3), 170–179. https://doi.org/10.1207/s15427579jpfm0503_5

Youn, H., Choi, J.-S., Kim, D.-J., & Choi, S.-W. (2016). Development and validation of a stock addiction inventory (SAI). *Annals of General Psychiatry*, *15*(1), 16–22. https://doi.org/10.1186/s12991-016-0105-3

Yu, J. H., Kang, J., & Park, S. (2019). Information availability and return volatility in the bitcoin market: Analyzing differences of user opinion and interest. *Information Processing & Management*, *56*(3), 721–732. https://doi.org/10.1016/j.ipm.2018.12.002

Zer, I., Bernales, A., & Valenzuela, M. (2023). Effects of information overload on financial markets: How much is too much? *International Finance Discussion Paper*, *1372*, 1–45. https://doi.org/10.17016/ifdp.2023.1372

Zhao, H., & Zhang, L. (2021). Financial literacy or investment experience: Which is more influential in cryptocurrency investment? *International Journal of Bank Marketing*, *39*(7), 1208–1226. https://doi.org/10.1108/IJBM-11-2020-0552

Zuckerman, M. (1985). Sensation seeking, mania, and monoamines. *Neuropsychobiology*, *13*(3), 121–128. https://doi.org/10.1159/000118174