

Determinants of Crypto Trading Activity

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Abstract

Cryptocurrency trading offers particular traits that have attracted investors as well as significant disadvantages. With the short-term rise in cryptocurrency values, more investors were enthused about investing in it, increasing fears of a speculative bubble. Despite worries about its inadequacies, this study looked into the many aspects involved in cryptocurrency trading. In what concerns to psychological, social, cultural, personal, economic, perceived risk and financial literacy, we first hypothesized that crypto investors would show differences in multiple factors when compared to share investors. Based on our assumptions about these differences, we secondly hypothesized that investors' psychological, social, cultural, personal economic, perceived risk and financial literacy could predict whether they could invest in crypto or shares. In total, 507 respondents completed the research protocol and were sorted into Crypto investors (n=207), share investors (n=189), and non-investors (n=111). A self-report questionnaire on demographic data, psychological, social, cultural, economic, perceived risk and financial literacy were administrated. The result of the study indicated that crypto investments can be attributed to the interaction of multiple factors, among which psychological, social, cultural, personal economic, perceived risk and financial literacy are particularly important. Specifically, the perceived risk and financial literacy are the strongest predictive factor for crypto trading. Crypto traders were distinct with regard to higher novelty seeking, higher gambling tendencies, and unique investment patterns. Thus, personality, psychological states, and investment patterns could explain the substantial investments in crypto trading.

Keywords: cryptocurrency; determinants; investors; crypto traders

Introduction

Cryptocurrency trading appears to be one of the fastest growing markets in the world. Surveys conducted by major exchanges (coingecko.com, 2022) suggested that hundreds of thousands of people are signing up to exchange platforms each month (Omane-Adjepong et al., 2021). The current global population of crypto-currency (crypto) buyers and sellers is near 300 million, predicted to hit 1 billion by the end of 2022. The global crypto population has increased by +178% in 2021, rising from 106 million in January to 295 million in December. Total market capitalization (total coins x

market price) has now reached 1.75 trillion \$US in February 2021 after having been \$550 billion in December 2020 and \$275b in June 2020 (Crypto.com, 2022). Cryptocurrencies have charmed people since they were first introduced in 2009 following the advent of blockchain technology. The term cryptocurrency refers to digital 'coins' or assets that are based on block-chain technology. Blockchains are distributed ledger systems where each node of the system is linked together in a peer-to-peer (P2P) network. Blocks, which form the basis for the coins, are created through an initial coin release (or ICO), can be earned through activities (e.g., in gaming, transaction activity), or "mined". Mining usually

occurs through 'proof-of-work' systems, where by cryptographic algorithms generate complex random numbers of hashes which must be solved using the application of computer power. The different parties that contribute to this work (or mine the blocks) receive a fraction of the block (e.g., part of a Bitcoin). Such systems also use 'proof of stake' methods based on value-added contributions to the generation of the coins. Coins are traded on exchanges, stored privately in wallets using "keys" or identifiers (Scholten, et al., 2020; Casey & Vigna, 2015; King, 2012). Cryptocurrency trading has much in common with modern trading on the share-market (Granero et al., 2012; Albayati, 2020). It attracts both experience and less experienced investors; both large institutional investors as well as small retail investors; is subject to market fluctuations; and trading is heavily automated, with buy and sell orders set by digital trading systems (Fang et al., 2023). Cryptocurrency, digital currency, is characterized by user anonymity, low transaction costs, security and control as well as the option of mobile payments via the internet (Bohme et al., 2015; Yelowitz and Wilson, 2015). However, its disadvantages include high liquidity and a process that is still under development (Briere et al., 2015; Polasik et al., 2015).

The results provide a detailed scientific picture of cryptocurrency investors, which is essential for the fundamental penetration, analysis and consideration of the market. Future research can build upon the results, e.g. identify, measure and extend the set of relevant variables and apply further appropriate methodologies. Ultimately, the results have significance for a large number of stakeholders in practice, including, for example, governments about questions of regulation, businesses about target group refinement or investors about the classification and analysis of one's own behavior and performance in comparison to other investors.

Objectives of the Study

- To critically examine the consumer behaviour and attitudes towards green products and services.
- To identify the factors that influence consumer purchasing decisions and preferences for environmentally responsible products and services.

2. Literature Review and Development Of Hypothesis

It's worth noting that these factors can change over time and are not necessarily consistent across all individual. Also, the factor that influence buying intentions may be different from those that influence buying decisions.

There are several factors that can influence an individual's decision to buy or invest in cryptocurrency, including:

2.1. Psychological States of Cryptocurrency Investors

Buyer psychology refers to the cognitive and emotional process that influence an individual's decision to purchase a product or service. In the context of cryptocurrency, buyer psychology can play a significant role in an individual intention to buy or invest in a particular coin. Some psychological factors that can influence can influence an individual's crypto buying intentions include:

Confidence in the market: if an individual believes that the market for a particular cryptocurrency is strong and has a positive outlook, they may be more likely to invest.

Perceived value: an individual's perception of the value of a particular cryptocurrency can influence their buying decision. For example, if they believe that a coin has a high potential for growth, they may be more likely to invest.

Risk tolerance: an individual's willingness to take on risk can also play a role in their decision to buy or invest in cryptocurrency. For example, someone with a high-risk tolerance may be more willing to invest in a volatile cryptocurrency, while someone with a low risk tolerance may prefer to invest in a more stable coin.

Trust: Trust in the underlying technology of a particular cryptocurrency, trust in the development team behind it, and trust in the exchanges or platforms where it can be bought, can influence the buying intentions of an individual.

Social proof: seeing other people invest in a particular cryptocurrency can also influence an individual's buying intentions, as they may believe that the coin is a good investment based on the actions of others.

Emotions: emotions such as excitement, fear, and greed can also play a role in influencing an individual's buying intentions.

To assess temperament and personality, Cloninger's Temperament and Character Inventory-Revised-Short Version (TCI-RS) (Cloninger et al., 1993) was applied to the participants. TCI is a well-known tool for assessing individuals' biogenetic characteristics (Ebstein et al., 1996; Benjamin et al., 2000; Gusnard et al., 2003; Ellison et al., 2007). Cloninger's psychobiological model assumes that both genetic and environmental factors influence an individual's personality, which is represented by his/her temperament and character trait. The 140-item TCI-RS is designed to measure four temperamental factors (novelty seeking, NS; harm avoidance, HA; reward dependence, RD; and persistence, PE) and three-character traits (self-directedness, SD; cooperativeness, CO; and self-transcendence, ST). The Korean version of the TCI was standardized and demonstrated reliability and validity in 2007 (Min et al., 2007).

Factors based on human psychology are a major determinant of consumer behavior, and they are on four aspects:

Motivation:

Motivation is the inward drive we have to get what we need. Every person has different needs such as physiological needs, security needs, social needs, esteem needs, and self-actualization needs. Basic needs such as food, water, and sleep are in nature most pressing, while others are least pressing. Therefore, a need becomes a motive when it is more pressing to direct the person to seek satisfaction.

Perception:

Customer perception is a process where a customer collects information about a particular product and interprets the information to make a meaningful image of it. There are three different perceptual processes, as follows:

Selective attention – is the process of filtering out information based on how relevant it is to you, and through which marketers try to attract the customer's attention.

Selective retention – where people forget information that contradicts their belief, even if it's quite relevant to them. Here, marketers try to retain information that supports consumers' beliefs.

Selective distortion – the misinterpretation of the intended message. Customers tend to interpret the information in a way that will support what they already believe, but not necessarily what the product provides.

Learning

Refers to the process by which consumers change their behavior after they gain information or experience. It doesn't just affect what you buy; it affects how you shop. Learning can be either conditional or cognitive, as follows:

Conditional learning – when the consumer is exposed to a situation repeatedly, resulting in positive or negative consequences. Companies engage in conditional learning by rewarding consumers, which causes consumers to want to repeat their purchasing behaviors.

Cognitive learning – the consumer will apply his knowledge and skills to find satisfaction and a solution from the product that he buys. It occurs by associating a conditioned stimulus (CS) with an unconditioned stimulus (US) to get a particular response.

Attitudes

Attitudes are enduring "mental positions" or emotional feelings, favorable or unfavorable evaluations, and action tendencies people have about products, services, companies, or ideas. Since such beliefs and attitudes make up brand image and affect consumer buying behavior, marketers aim to change the beliefs and attitudes to positive ones through designing special campaigns.

2.2. Social Influences of Cryptocurrency Investors

People wish to be socially accepted, so they tend to imitate others including their purchases. Among the most important social factors are:

Family

Buyer behavior is strongly influenced by the family they belong to. A person develops preferences from his childhood by watching family buy products and continues to buy the same products even when they grow up. Companies, therefore, are interested in which family members have the most influence over certain purchases.

Reference Groups

Reference groups are groups (social groups, workgroups, or close friends) a consumer identifies with and may want to join. The impact of reference groups varies across products and brands. For example, if the product is visible such as dress or car, then the influence of reference groups will be high.

Roles and Status

A role consists of the activities that a person is expected to perform. Each role carries a status. For example, if a woman works as a finance manager, she plays two roles: finance manager and mother. Therefore, she is largely influenced by her role and will choose products that communicate it.

2.3. Cultural Factors of Cryptocurrency Investors

A group of people is associated with a set of values and ideologies that belong to a particular community. Therefore, cultural factors have a strong influence on consumer buying behavior. They include:

Culture

Culture is a handed-down way of life and is often considered the broadest influence on a consumer's behavior. The influence of culture on buying behavior varies from country to country, therefore marketers have to be very careful in analyzing the culture of different groups, regions, or even countries.

Subculture

A subculture is a group of people within a culture who are different from the dominant culture but share the same set of beliefs and values. Marketers can use these groups by segmenting the market into various small portions by, for example, designing products according to the needs of a particular geographic group.

Social Class

A social class is a group of people who have the same social, economic, or educational status in society. To some degree, consumers in the same social class exhibit similar purchasing behavior. In this way, marketing activities could be tailored according to different social classes.

2.4. Economic Factors of Cryptocurrency Investors

Economic conditions: economic instability or uncertainty can drive people to seek out alternative forms of investment, such as cryptocurrency.

Economic factors bear a significant influence on the buying decision of a consumer, and they can be on several aspects, as follows:

Country Economic Situation:

Consumer buying habits and decisions greatly depend on the economic situation of their country. When a nation is prosperous, the economy is strong, which leads to a greater money supply in the market and higher purchasing power for consumers. In contrast, a weak economy reflects a struggling market that is impacted by unemployment and lower purchasing power.

Personal Income:

The disposable personal income refers to the actual income remaining after deducting taxes from the gross income. When a person has a higher disposable income, the purchasing power increases simultaneously. On the contrary, when the disposable income reduces, parallelly the spending on multiple items is also reduced.

Liquid Assets:

Liquid assets refer to those assets, which can be converted into cash quickly without any loss. When a consumer has higher liquid assets, it gives him more confidence to buy luxury goods. On the other

hand, if they have fewer liquid assets, they cannot spend more on buying comforts and luxuries.

Consumer behavior is influenced by many things: psychological, social, cultural, personal, and economic factors. In turn, businesses, for the purpose of improving their profits, try to figure out trends so they can reach and influence the people most likely to buy their products in the most cost-effective way possible such as the layout of a store, music, grouping, and availability of products, pricing, and advertising. The nature of business transactions is constantly evolving and is driven by a wide variety of socio-economic and legal factors. Over the past few decades, globalization and industrialization have had a significant impact on how people do business across the globe and how they interact with the adoption and integration of emerging technologies (Cruz et al. 2022).

2.5. Personal Factors of Cryptocurrency Investors

Personal factors vary from one person to another, thereby producing different perceptions and consumer behavior. Some of the personal factors are:

Age, Occupation & Lifestyle, Personality

Several studies have suggested that investors' personalities such as openness, extraversion, agreeableness, and neuroticism of the Big Five, or the traits of Cloninger's Temperament and Character Inventory (TCI), such as novelty seeking, harm avoidance, and reward dependence affect investment decisions (Zhang et al., 2014; Conlin et al., 2015; Tauni et al., 2017; Oehler et al., 2018). Granero et al. (2012) examined the stock market investments involved in gambling problems. Furthermore, prior studies suggest that investment strategies, perceived profitability, and macroeconomic factors affect investment decisions (Lee et al., 2010; Ahmad, 2017).

2.6. Perceived Risk of Cryptocurrency Investors

Often, social impact is defined as meeting a social challenge or having a good impact on others (Cruz et al. 2022). According to Bjerg (2015), Bitcoin is an ideological challenge to traditional forms of money in that it exposes the types of exploitation, uncertainty, and even violence inherent in the

present. Illusion of control – The illusion of control, defined as a subjective over-estimation of the objective ability to exert control (Langer, 1975) is known to be a common feature of gambling (Wohl & Enzle, 2002; Wood & Clapham, 2005). People believe that strategies, skills, or certain rituals can increase the probability of winning. Such beliefs are known to be present in both chance and more skilled games and appear to be stronger in people experiencing gambling problems (Jefferson & Nicki, 2003; Joukhador & Blaszczynski, 2004; Lambos & Delfabbro, 2007). The illusion of control is likely to be a strong feature of crypto trading and this feature is also likely to be common to sports betting and day trading. The effect is likely to be bolstered by other heuristics and biases, including: biased or self-serving attributions (outcomes due to personal action rather than external factors); hindsight bias (the outcome is seen as being hypothesised all along); and, the hot-hand fallacy (perceptions of predictable momentum shifts or winning periods (Lambos & Delfabbro, 2007; Toneatto & Ladouceur, 2003).

2.7. Financial literacy and cryptocurrency investors

Many of these effects are likely to be strong during favourable market conditions. If BTC is trending upwards, then nearly all coins will experience growth over time. As a result, traders will rarely be wrong in their choices and most decisions will be positively reinforced. Traders will therefore, often falsely, infer contingency between their actions and positive outcomes, an effect which is known to be stronger when the probability of reinforcement is high (Blanco, Matute, & Vellido, 2011; Matute, 1996).

Conceptual Framework and Development of Hypothesis

Hypothesis 1. Psychological factor (PF) has a direct and positive relationship with crypto buying decisions.

Hypothesis 2. Social Influences (SI) has a direct and positive relationship with crypto buying decisions.

Hypothesis 3. Culture (CU) has a direct and positive relationship with crypto buying decisions.

Hypothesis 4. Economic Influences (EI) has a direct and positive relationship with crypto buying decisions.

Hypothesis 5. Personal (PE) has a direct and positive relationship with crypto buying decisions.

Hypothesis 6. Perceived risk (PR) has a direct and positive relationship with crypto buying decisions.

Hypothesis 7. Financial literacy (FL) has a direct and positive relationship with crypto buying decision.

3. Research Methodology

Participant Recruitment

Study participants were recruited between March 7 and March 14, 2022. An invitation e-mail to participant in the survey was sent all registered who were over the age of 20. Of all those contacted, 59 candidates responded to the first e-mail. Of these responders, 110 met the inclusion criteria for Bitcoin investors, 319 met the inclusion criteria for share

investors, and 3,765 met the inclusion criteria for non-investors. Given that we planned to compare 32 variables in four categories between two groups (investor vs. non-investor, cryptocurrency vs. share investor group), the data of 207 participants in two groups were estimated using SMART PLS. Of the 5,933 respondents in the first e-mail, 110 met the inclusion criteria for Bitcoin investors. Considering about 10% missing data, we randomly selected 110 individuals each from the 319 share investors and 3,765 non-investors. Non-study personnel generated the randomization sequence and assigned a number to each of the 319 share investors and each of the 3,765 non-investors. Those with the numbers between 1 and 110 from both groups were selected.

Assessment Scales

The self-report questionnaire used in this study included questions about demographic characteristics, personal, demographic data, psychological, social, cultural, economic, perceived risk and financial literacy as well as well-known psychological measures detailed below.

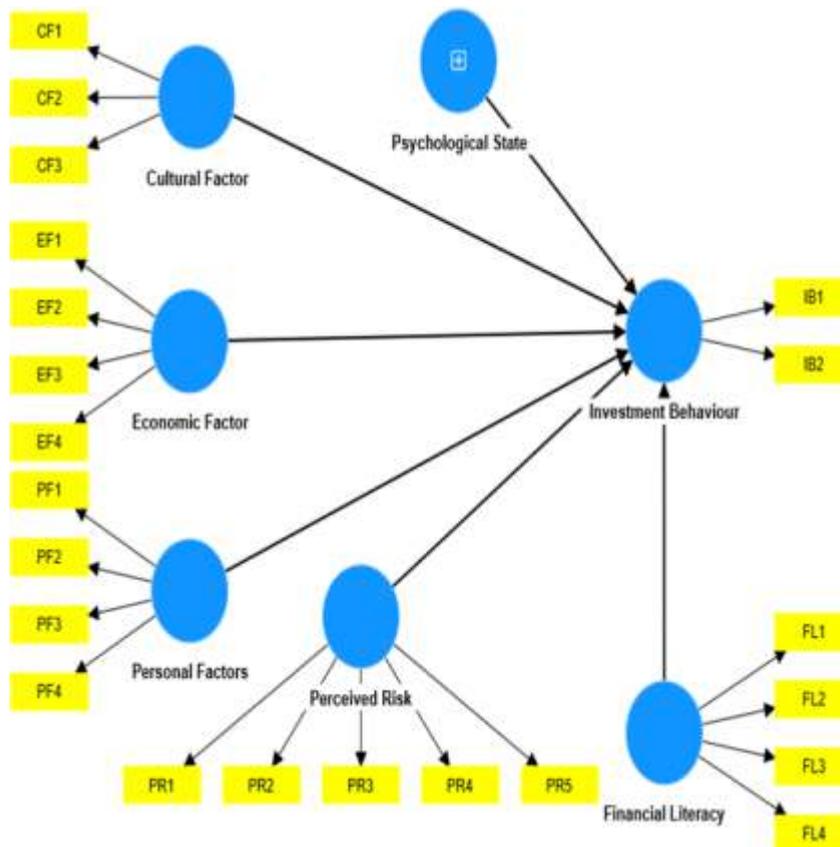


Table: 1 Construct Reliability and Validity Test

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Cultural Factor	0.906	0.930	0.941	0.842
Economic Factor	0.855	0.880	0.901	0.696
Financial Literacy	0.920	0.934	0.943	0.806
Investment Behaviour	0.778	0.778	0.900	0.818
Perceived Risk	0.905	0.925	0.931	0.731
Personal Factors	0.896	0.909	0.928	0.765
Psychological State	0.953	0.962	0.959	0.664

The Fornell-Larcker criterion is used to test whether the factor loadings of a construct are the same across different groups. If the factor loadings are the same, it means that the construct is being measured in the

same way across different groups and the results are comparable. If the factor loadings are not the same, it means that the construct is not being measured in the same way across different groups and the results are not comparable.

Table: 2 Fornell-Larcker Test

	Cultural Factor	Economic Factor	Financial Literacy	Investment Behaviour	Perceived Risk	Personal Factors	Psychological State
Cultural Factor	0.917						
Economic Factor	0.767	0.834					
Financial Literacy	0.887	0.771	0.898				
Investment Behaviour	0.726	0.751	0.729	0.904			
Perceived Risk	0.791	0.890	0.797	0.842	0.855		
Personal Factors	0.719	0.903	0.724	0.760	0.840	0.975	
Psychological State	0.795	0.968	0.801	0.897	0.762	0.939	0.815

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Table: 3 Hypothesis Test

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Cultural Factor -> Investment Behaviour	0.045	0.050	0.132	0.338	0.736
Economic Factor -> Investment Behaviour	0.571	0.547	0.200	2.858	0.004
Financial Literacy -> Investment Behaviour	-0.026	-0.032	0.137	0.188	0.851
Perceived Risk -> Investment Behaviour	-0.956	-0.979	0.254	3.756	0.000
Personal Factors -> Investment Behaviour	-1.161	-1.172	0.178	6.520	0.000
Psychological State -> Investment Behaviour	2.339	2.398	0.577	4.054	0.000

In research, a hypothesis is accepted or rejected based on the results of the statistical analysis. The process of hypothesis testing involves comparing the sample data to the null hypothesis, which states that there is no significant difference between the population and the sample. The researcher collected data, analyze it and then use statistical methods to determine whether the results support the null hypothesis or not.

The researcher will set a level of significance, commonly known as alpha (α), which is the probability of rejecting the null hypothesis when it is true. For example, if the level of significance is set at 0.05, this means that there is a 5% chance of rejecting the null hypothesis when it is true.

When the results of the statistical analysis show that the probability of obtaining the sample data or more extreme data given the null hypothesis is less than or equal to the level of significance, the null hypothesis is rejected. This means that there is evidence to support the alternative hypothesis, and the researcher can conclude that there is a significant difference between the population and the sample.

On the other hand, if the results of the statistical analysis show that the probability of obtaining the sample data or more extreme data given the null hypothesis is greater than the level of significance, the null hypothesis is not rejected. This means that there is not enough evidence to support the alternative hypothesis, and the researcher can conclude that there is no significant difference between the population and the sample.

Conclusion

In this research, we empirically examine the determinants of the cryptocurrency. The study has important managerial implications. For investment managers, the paper offers a comprehensive discussion about the factors they need to consider in the valuation of a cryptocurrency. The result of the study indicated that crypto investments can be attributed to the interaction of multiple factors, among which psychological, social, cultural, personal economic, perceived risk and financial literacy are particularly important. Specifically, the perceived risk and financial literacy are the strongest predictive factor for crypto trading. Crypto traders were distinct with regard to higher novelty seeking, higher gambling tendencies, and unique investment patterns. Thus, personality, psychological states, and investment patterns could explain the substantial investments in crypto trading.

Recommendation & Policy Implications

- Future research can build upon the results, e.g. identify, measure and extend the set of relevant variables and apply further appropriate methodologies.
- Ultimately, the results have significance for a large number of stakeholders in practice, including, for example, governments about questions of regulation, businesses about target group refinement or investors about the classification and analysis of one's own behavior and performance in comparison to other investors.
- The results provide a detailed scientific picture of cryptocurrency investors, which is essential for the fundamental penetration, analysis and consideration of the market.
- The study has important managerial implications. For investment managers, the paper offers a comprehensive discussion about the factors they need to consider in the valuation of a cryptocurrency.

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