Ünal Adıgüzel, D., Sarı Özgün, H. / Journal of Yasar University, 2025, 20/80, 559-579

Who Loves Cryptocurrency More? Financial Attitude and Personality Types

Kripto Parayı Kim Daha Çok Seviyor? Finansal Tutum ve Kişilik Tipleri

Deniz ÜNAL ADIGÜZEL, Pamukkale Üniversitesi, Türkiye, dadiguzel@pau.edu.tr

Orcid No: 0000 0002 6275 7434

Hilal SARI ÖZGÜN, Pamukkale Üniversitesi, Türkiye, sarih@pau.edu.tr

Orcid No: 0000 0002 8556 3341

Abstract: When a new financial investment instrument enters our lives, some individuals adapt immediately, while others feel the need to be a little more cautious. One of the reasons for this may be individuals' financial attitudes, while another may be their personality types. Because both factors are among the factors that affect individuals' investment decisions. In this context, one of the most fundamental factors affecting individuals' decisions is their personality types. Personality types of individuals can be expressed as homogeneous groups within themselves. Individuals of each personality type may exhibit different behavioral characteristics. Based on this reality, the main purpose of our study is to measure the effects of the use of cryptocurrencies, personality types and financial attitudes of individuals on the use of cryptocurrencies. For this purpose, a survey was conducted with volunteer participants and the collected data were analyzed with the help of SPSS 21.0 program. As a result of the study, it was concluded that neurotic personality types differ in cryptocurrency use, cryptocurrency use increases as income and education level increases, men prefer cryptocurrency more than women, and age does not have any effect. In addition, when the relationship between individuals' financial attitudes and personalities was examined, it was found that there is a positive, weak but significant relationship between financial attitude and self-discipline, openness, extroversion, agreeableness, but there is no relationship between financial attitude and neurotic personality type.

Keywords: Personality, Cryptocurrency, Financial Attitude, Risk

JEL Classification: G0, G30, G40

ÖZ: Hayatımıza yeni bir finansal yatırım aracı girdiğinde bazı bireyler hemen uyum sağlarken, bazıları ise biraz daha temkinli olma ihtiyacı hisseder. Bunun nedenlerinden biri bireylerin finansal tutumları olabilirken, bir diğeri ise kişilik tipleri olabilir. Çünkü her iki faktör de bireylerin yatırım kararlarını etkileyen faktörler arasındadır. Bu bağlamda kişilerin kararlarında etki eden en temel faktörlerden birisi kişilik tipleridir. Bireylerin kişilik tipleri kendi içlerinde homojen gruplar olarak ifade edilebilmektedir. Her bir kişilik tipindeki birey davranışsal olarak farklı özellikler sergileyebilmektedir. Bu gerçekliğe dayanarak çalışmamızın temel amacı, kripto paraların kullanımının, kişilik tiplerinin ve bireylerin finansal tutumlarının kripto para kullanımına olan etkilerini ölçmektir. Bu amaçla gönüllü katılımcılarla bir anket yapılmış ve toplanan veriler SPSS 21.0 programı yardımıyla analiz edilmiştir. Çalışmanın sonucunda kripto para kullanımında nevrotik kişilik tiplerinin farklılık gösterdiği, gelir seviyesi ve eğitim düzeyi arttıkça kripto para kullanımının arttığı, erkeklerin kadınlardan daha fazla kripto para tercih ettiği, yaşın herhangi bir etkisinin olmadığı kanaatine varılmıştır. Ayrıca bireylerin finansal tutumları ile kişilikleri arasındaki ilişki incelendiğinde finansal tutum ile öz disiplin, açıklık, dışa dönüklük, uyumluluk arasında pozitif yönlü, zayıf ancak anlamlı bir ilişki olduğu ancak finansal tutum ile nevrotik kişilik tipi arasında bir ilişki olmadığı tespit edilmiştir.

Anahtar Kelimeler: Kişilik, Kripto Para,Finansal Tutum, Risk

JEL Sınıflandırması: G0, G30, G40

Makale Geçmişi / Article History

Başvuru Tarihi / Date of Application : 2 Aralık / December 2024

Kabul Tarihi / Acceptance Date : 1 Temmuz / July 2025

1. Introduction

With the emergence of crypto assets in 2008, today's investors and consumers have encountered a new asset. These assets are decentralized and have attracted attention with many innovative features such as 24/7 transaction opportunities. Although they seem quite attractive, the use of crypto assets, which have advantages and disadvantages, is expected to differ among consumers or investors whose financial attitudes and personality traits differ.

Cryptocurrencies are attracting attention in Turkey, as they are all over the world. While investors encounter a new financial instrument, regulators follow the developments regarding the use of this instrument and prepare the necessary legal regulations. The first legal regulation on crypto assets in Turkey was published in the Official Gazette dated 16.04.2021 and numbered 31456. "Pursuant to the Regulation on the Non-Use of Crypto Assets ('Regulation'), crypto assets were defined for the first time under Turkish law and their use in payments was prohibited." However, this prohibition only applies to direct or indirect payments. Cryptocurrencies continue to be traded on platforms such as BtcTurk, Paribu, Binace TR. Cryptocurrency markets in Turkey are in line with the global markets. Blockchain and cryptocurrencies have become highly studied topics in recent years (Çizmecioğlu and Akman, 2021:13).

All new and old financial investment instruments may in fact vary according to the attitudes and preferences of individuals and their perception of risk. It may not always be possible to explain concepts clearly in social science studies carried out with the participation of individuals. When it comes to humans, it is known that human behavior is affected by many factors.

One of the factors that play an important role in the basis of individuals' behaviors is personality factors. Personality is important at every step, from the information perceived when exposed to a stimulus, to the resistance shown to the messages given, from using the information received to being convinced by the message given, and even to making decisions. It is normal for individuals' financial attitudes and investment preferences to differ depending on each of these personality traits.

Individuals with different personality and financial attitudes can direct their investments, savings and expenses in different areas. The main question of this study is whether individuals prefer cryptocurrencies or not based on their personality types and financial attitudes. The aim of this study is to measure whether the use of cryptocurrencies, which are considered risky, is affected by individuals' personality types and financial attitudes.

This study aims to bring the results on personality types, financial attitudes and cryptocurrency usage to the literature. Existing studies in the literature are generally related to the acceptance, technical and terminological status of cryptocurrencies, but not much attention has been paid to personality and attitudes. For this reason, the study emphasizes that financial attitudes and behaviors are influenced not only by economic factors but also by psychological factors such as personality. Cryptocurrency producers and regulators should not only focus on economics and finance, but also keep in mind that each individual may gravitate towards different investment instruments due to different personality types.

2.Literature Review

2.1. Definition and History of Cryptocurrency

The concept of money throughout the world; It is called a paper or metal asset with a written value printed by the state. In ancient times, money was mostly used in the exchange of animals and food as barter. Anything that is generally accepted for the purchase of goods and services is called money. Money is a physical asset, but also deposits and credit cards can be called money. Commodity money, gold and silver, representative coins, paper money, alternative coins, digital coins, virtual coins, crypto (encrypted) coins are examples of money types. Time deposits, government bonds and exchange instruments are called money equivalents. Money has taken different forms by evolving day by day. Alternative payment methods have always been researched in order to expand trade in the world, accelerate globalisation and make these transactions as fast and cost-free as possible. Since cryptocurrencies have these features, they have attracted the attention of users. Cryptocurrency is a type of digital money used to purchase goods and services, that is, it is a type of virtual money. Cryptocurrency is a digital currency used as a means of payment and exchange within a decentralized and distributed network of users. (Raymaekers, 2015). In addition to purchasing goods and services, crypto assets are also used as investment, value storage and value generation tools(Arıkan vd., 2021:84). Cryptocurrency is a kind of encrypted money. It is created using cryptology methods. Since it is created encrypted, there are also encryption methods in use. It is available in digital environments and is traded in these environments. Emerged in 2008, Bit-coin is the first cryptocurrency. Nakamoto (2008) introduced Bitcoin, the first cryptocurrency, in his study, stating that it is just one of the cryptocurrencies in which payments can be made thanks to blockchain technology. Bitcoin is the most frequently and intensively used decentralized currency. It was formed with the words bit (byte or digital) coin. Bitcoin is currently the most widely known and most valuable

cryptocurrency in the world (DeVries, 2016). There is a belief that cryptocurrencies will be the currency of the future (Evrimoğlu and Güder, 2021:480, Sarı Özgün 2024:3). Cryptocurrencies do not have any physical existence. Cryptocurrencies are produced and developed with blockchain technology and consist of blocks. The information in the blocks is known only by the user (buyer/seller) and this technology provides effective results for security and data transfer (Ünal and Çelebi, 2020:174). Due to its decentralised structure, it cannot be audited by an institution or organisation. Due to this feature, block chain technology is also used by areas other than finance. Cryptocurrencies have various advantages and disadvantages (Yanar et al. 2022:37). Advantages are that it is indefinite, costless, cannot be counterfeited because it is digital, transaction costs are almost zero and can be safely stored in wallets (Kukman and Gričar, 2025:1). The disadvantages are that it cannot be controlled due to the lack of a strong authority over it, its volatility is high due to the fact that trading requests are easily affected by the economic conjuncture, users do not have complete clear information about it, there is a possibility that it may be subject to speculative transactions, and it may be subject to cyber attacks or hacking.

In order for cryptocurrencies to be used freely in the markets, fast internet access, high use of smartphones and tablets, individuals who are knowledgeable about finance and cryptocurrencies, and free market economy conditions must be provided. Since these features are more common in developed countries, it is seen that the use of cryptocurrencies is widespread in developed countries. However, the fact that it still does not have a fully tangible existence and is open to various dangers (cyber attack, uncontrolled ...) encourages investors and users to act more carefully (Ünsal and Kocaoğlu 2018: 57).

2.2. Financial Attitude

The word “attitude” refers to the attitudes and behaviors of a person, a group or a society towards a particular issue or situation. Attitude is the positive or negative attitudes and behaviors that people show towards objects, entities and events they encounter (Kroesen et al., 2017:190-202). Attitude is a person's emotional, cognitive and behavioral response to an object, event, person or subject (Robbins, 2008). Attitudes of individuals vary. While not harming the environment and nature is a positive attitude, communicating with bad words is an example of a negative attitude. Attitude is influenced by a person's personality, experiences, values and beliefs, culture and can change and develop over time. Financial attitude includes instruments such as saving, investment, income and expenditure balance that need to be decided. For this reason, financial attitude is also an indicator of a level of

consciousness. Personality types, income level, education level, culture and environment, lifestyle and economic conditions are some of the factors affecting financial attitude. For example, while one person may spend more, another person may prefer to invest or save. All these change the financial attitude of individuals in relation to the factors that affect them.

Financial attitude is the individual's views and opinions regarding finance (Ameliawati & Setiyani, 2018:814). Financial attitude has an impact on individuals' future spending and savings. In addition, what kind of financial attitude individuals have is important for their financial well-being (Atkinson & Messy, 2012:7 and Namlı & Kaya, 2018, 2). The way a person actually lives is also related to his/her financial attitude (Pankow, 2003). Financial attitude includes spending, saving and investing. When financial attitude is expanded for individuals, businesses and institutions, it reflects how income, expenses and savings will be managed. Financial attitude includes being conscious when making economic decisions. Personality types, income level, education level, culture and environment, lifestyle and economic conditions can be listed as factors affecting financial attitude (İnceoğlu, 2011: 16).

Businesses carry out various planning and budgeting activities in order to achieve their commercial and economic goals, and these activities are indicators of the financial attitudes of the business. These studies include information on how to increase budgeting, savings and investments or how to minimize expenditures and expenses (Namlı, Kaya, 2018: 2). The financial attitude of each individual cannot be expected to be the same. For example, while one person may spend more, another person may prefer to invest or save. All these change the financial attitude of individuals in relation to the factors that affect them.

Investor types are also divided into three for similar reasons. Investors are divided into risk-loving, risk-averse and risk-neutral. While it is normal for a risk-loving investor to invest using cryptocurrency, it is normal for a risk-averse investor not to prefer cryptocurrency investment. In our country, it is seen that risk-averse investors generally prefer to evaluate their investments in areas such as real estate, gold and foreign currency. Luo et all. (2021), as a result of their survey study with cryptocurrency investors, stated that investors tend to avoid uncertainty and that the highest gains are realized during expected abnormal times. In parallel with Luo et al. (2021), Kendir and Ateş (2024) supported the view that investors tend to avoid uncertainty. Gümüş et al. (2013) investigated the effects of financial profiles of individual investors on investment decisions by using the survey method and concluded that investor profiles cause differences in investor decisions. In his study using quantitative methodological methods, Zengin (2024) emphasized that investors' financial decision-making processes are affected by psychological tendencies and personality traits.

In his study, Tuygun (2022) examined the attitudes and perceptions of 541 cryptocurrency investors who engage in investment behavior in cryptocurrency markets regarding their investments in cryptocurrencies. According to the findings of the study, it was concluded that the attitudes of investors who engage in cryptocurrency investment behavior differ according to socio-demographic characteristics.

2.3. Personality (Big Five)

Determining the consumer or investors demands and needs in the target market or markets and providing solutions that can satisfy these demands and needs constitute the most basic purpose of marketing. For example, according to the results of research conducted in the USA, it has been determined that coke drinkers are more social. Coca-cola advertisements also strongly emphasize the role of the product in developing social relations (Koç, 2012: 274).

Consumers are under the influence of many internal and external factors in the purchasing decision process or investment stage. It is one of the most basic internal factors that affect consumers and investors, consisting of three components: personality, character, temperament and talent (Solomon, 2013: 237; Koç, 2012: 274; Robbins & Judge, 2013: 165; Kotler & Armstrong, 2016: 177).

Gathering individuals in a common cluster according to the differences in their behaviors creates convenience in order to ensure homogeneity. It is not always easy to group the behaviors of individuals in social environments where many individuals are together (Şimşek et al., 2010: 102). For this reason, the need to determine the personality types of individuals has arisen. Personality types have been developed within the scope of this need.

Tests used to measure personality types are used to determine the behavior patterns of people under certain conditions. Personality tests are not to determine whether a person can do something or his behavior at certain times; it tries to determine how that person generally behaves (Morgan, 2010: 262). In the light of these tests, personality types can be determined. Although there are many personality models, the five-factor personality model has brought an innovative perspective to personality as it is based on scientific observations and thus transforms personality analyzes from theoretical knowledge to practice (Demirci et al., 2009: 21).

This theory is based on the coding of the personality differences that people show with the words used in different languages and thus grouping the personality structures (Pittenger, 2004: 780). The foundations of the study were laid by Allport and Odbert in the 1930s, but the

beginning of its current usage form was given a different dimension by Robert McCrae and Paul Costa in the late 1970s (John and Srivastava, 1999: 102-105). McCrae and Costa developed a different perspective on personality traits and instead of establishing hypotheses, they adopted a method of grouping personality components by using simple factor analysis techniques to examine the structure of personality (Feist and Feist, 2008: 420).

Five basic personality traits emerged as a result of McCrae and Costa's grouping studies. These; extroversion, neuroticism, openness, conscientiousness and agreeableness. Among the personality traits exhibited by individuals with extrovert personality type, being affectionate in terms of social relations, being funny, being talkative and having strong character can be counted (Costa & McCrae, 1992: 5; McCrae & Costa, 2006: 53). Individuals with neuroticism personality traits can be defined as individuals who have higher levels of anxiety compared to other individuals, have problems with trust towards other individuals, have feelings of self-pity, and have more negative emotions (Costa & McCrae, 1987: 301; İnanç & Yerlikaya, 2011: 288).

The basis of the personality trait of openness to innovations, unlike neurotic individuals, is based on concepts and moods such as being in contact with people, being able to communicate comfortably, being willing to try unusual things and being constantly in search. Individuals with conscientious personality traits can be defined as personality types that are generally in harmony with other individuals in the society, polite, frank, trustworthy and able to maintain harmonious social relations for a long time. Individuals with the adaptability personality type are people who can be easily organized for a job or event, have ambitions to achieve, work success-oriented, but nevertheless controlled, disciplined and punctual (McCrae & Costa, 2008: 167; McCrae & Sutin, 2009: 258–259).

Nandan and Saurabh (2016), in an empirical study examining personality traits and investment intentions, stated that neuroticism, extraversion and openness affect individuals' attitudes towards financial risks, while agreeableness personality trait has a small effect, but conscientiousness does not have any effect.

Brooks and Louis (2021) emphasized that personality traits are effective in financial decision-making processes, but individuals will make healthier financial decisions by developing modifiable personality traits such as financial competence and psychological resilience.

Dayı and Çetin (2021), in their quantitative research in which they examined the effect of personality traits on financial attitudes and collected the data through a questionnaire, stated

that responsibility personality trait has a significant effect on financial attitudes, but other personality types do not have significant effects on financial attitudes.

3. Research Methodology

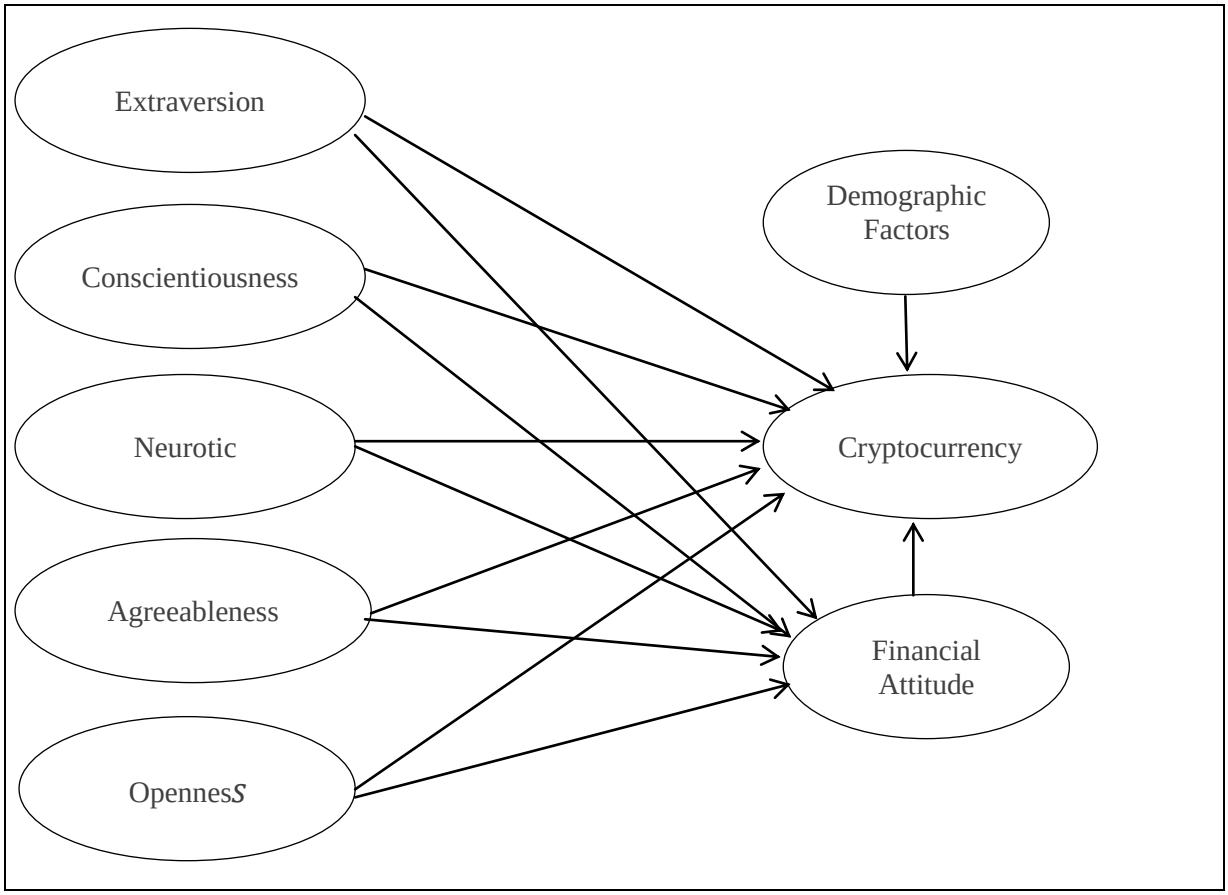
While there are studies on cryptocurrency usage according to Type A Type B personality traits, there is no study conducted according to 5 personality types. Gürsoy and Kadıoğlu, in their study examining personality types and usage intentions, stated that 58.82% of cryptocurrency users have type B personality and 41.17% have type A personality. The lack of such a study in the 5-point personality type increases the originality of the study.

Consumers are influenced by many factors when making a decision to purchase a product or service or to make an investment decision. Some of these factors are internal and some are external factors. Factors such as age, marital status, gender, income, lifestyle, etc. can be counted among the factors that generally affect consumers or investors.

Studies on consumers or investors can become complex, especially when psychological factors are involved. Therefore, all studies that measure consumer behaviours, attitudes and intentions are considered important since they will support the sector in general. The present study is also important because it will shed light on the sector as it is a study that deals with consumers as investors and aims to make sense of their behaviours.

When consumer behaviour or finance researchers or marketing department employees and financial investment advisors examine the behaviour of consumers/investors, they need both the factors affecting the consumer/investor and the areas where they can identify the consumer/investor. For this reason, different tools are used to examine the behaviours in the sector. The tools used in this study are basically tools to understand the personality types of individuals, their financial attitudes and their tendencies towards the use of cryptocurrency. Research model is shown in Table 1.

Table 1. Research Model



The main purpose of the study is to determine the effect of personality types of consumers/investors on their financial attitudes and tendency to use cryptocurrency. For this reason, the following hypotheses were prepared with the support of the literature.

H_1: Cryptocurrency usage varies depending on consumers' extroversion personality type.

H_2: Cryptocurrency use varies depending on consumers' conscientiousness personality types.

H_3: Cryptocurrency use varies depending on the neurotic personality type of consumers.

H_4:Cryptocurrency use varies depending on the agreeableness personality type of consumers.

H_5: Cryptocurrency use varies depending on the openness personality type of consumers.

H_6: Cryptocurrency usage varies depending on consumers' financial attitudes.

H_7: Cryptocurrency usage varies depending on the income level of consumers.

H_8: Cryptocurrency use varies depending on the gender of consumers.

H_9: Cryptocurrency use varies depending on the age of consumers.

H_{10}: Cryptocurrency use varies depending on the education level of consumers.

H_{11}:There is a relationship between consumers' financial attitudes and personality types.

H_{11a}: There is a relationship between consumers' financial attitudes and consumers' extroversion personality type.

H_{11b}: There is a relationship between consumers' financial attitudes and consumers' conscientiousness personality type.

H_{11c}: There is a relationship between consumers' financial attitudes and consumers' neurotic personality type.

H_{11d}: There is a relationship between consumers' financial attitudes and consumers' agreeableness personality type.

H_{11e}: There is a relationship between consumers' financial attitudes and consumers' openness personality type.

In the study, data were obtained from primary sources and a questionnaire was used as a data collection method. Since data collection will be carried out with a questionnaire, research and publication ethics were complied with in this study, which requires ethics committee permission and / or legal / special permission. Ethics committee permission was obtained for the questionnaire study carried out with the letter of T.C. Pamukkale University Social and Human Sciences Research and Publication Ethics Board dated 22/03/2023 and numbered 05-1 meeting/decision. The data was delivered to the participants via a survey form created via Google Forms, and the collection of data took approximately five months. The survey form included questions regarding the gender, age, income level, education level, and cryptocurrency trading status of the participants. In addition to the demographic questions asked in the survey form, two scales were used to determine the demographic characteristics of the consumers. The financial attitude scale analyzed by Onur and Nazik (2014) and the Big Five scale developed by John and Srivastava (1999). In the selection of the participants, the convenience sampling method was used due to accessibility problems among non-random sampling methods (Gegez, 2010). The main population of the participants was determined as consumers/investors over the age of 18. Since it was not possible to reach the entire population due to time and cost constraints, 217 participants were reached. The collected data were analyzed in the SPSS 21.0 program.

The reliability of the research was measured by alpha coefficient (Cronbach Alpha) and the alpha coefficient (Cronbach Alpha) of the answers given to the 24 questions asked to measure financial attitude was calculated as ,865 and the reliability alpha coefficient (Cronbach Alpha) of the answers given to the 30 questions asked to determine personality types was calculated as ,770 and it was determined that the research results were consistent.

As a result of the answers given by the participants in the research, nonparametric analyses were applied in the analyses since it was observed that the data set did not show normal distribution, the skewness and kurtosis coefficient values were not between +1 and -1 (Morgan, 2011), except neurotic, (Table 2). In the evaluation of the research results; frequency distribution for nominal scale questions, Mann-Whitney U, Kruskall-Wallis and Spearman rho correlation tests were used for Likert scale questions.

Table 2. Tests of Normality

	Kolmogorov-Smirnov[a]			**Shapiro-Wilk**				
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**	**Skewness**	**Kurtosis**
Financial	,133	217	,000	,863	217	,000	-1,981	7,387
Extroversion	,123	217	,000	,917	217	,000	-,861	5,026
Conscientiousness	,117	217	,000	,956	217	,000	-,458	1,911
Neurotic	,115	217	,000	,982	217	,006	-,151	,458
Agreeableness	,146	217	,000	,933	217	,000	-,911	3,786
Openness	,090	217	,000	,932	217	,000	-1,078	3,594

4. Findings

When the demographic characteristics of the participants in the study were evaluated, it was determined that 60,8% were women, 39,2% were men, 64,6% were university graduates, and 64,6% were in the low or middle income group. However, it was concluded that 168 of the participants did not want to invest in crypto money (Table 3). It is normal that risk-averse investors do not prefer to use cryptocurrencies.

Table 3. Demographic Characteristics of Participants

Gender	**N**	**%**	**Education Levels**	**N**	**%**
Female	132	60,8	Student	11	5,1
Male	85	39,2	High School	11	5,1
Total	217	100,0	Vocational School	42	19,4
Age	**N**	**%**	University	55	25,3
Under 45 years	179	82,5	Postgraduate	98	45,2
45- Over 45 years	38	17,5	**Total**	217	100,0
Total	217	100,0	**Income**	**N**	**%**
Invest in Crypto	**N**	**%**	Low	70	32,3
Yes	49	22,6	Middle	70	32,3
No	168	77,4	High	77	35,5
Total	217	100,0	**Total**	217	100,0

H_1: Cryptocurrency usage varies depending on consumers' extroversion personality type.

Mann-Whitney U test was conducted to determine whether there was a difference in cryptocurrency usage of the consumers participating in the research according to their extraversion personality types. According to the test results, it was concluded that cryptocurrency usage did not differ according to extraversion personality type (U=3629,5, p>0,05, Table 4). According to this result, H_1 hypothesis was rejected. Contrary to our findings, Czerwonka (2019) found that extroverted individuals have higher risk-taking tendencies, while responsible individuals have lower risk-taking tendencies. Contrary to our findings, Czerwonka (2019) found that extroverted individuals have higher risk-taking tendencies, while responsible individuals have lower risk-taking tendencies.

H_2: Cryptocurrency use varies according to consumers' conscientiousness personality types.

Mann-Whitney U test was conducted to determine whether there was a difference between the consumers' cryptocurrency usage according to their conscientiousness personality type. According to the test results, it was concluded that cryptocurrency usage did not differ according to conscientiousness personality type (U=3716.500, p>0.05, Table 4). According to this result, H_2 hypothesis was rejected.

H_3: Cryptocurrency use varies depending on the neurotic personality type of consumers.

Mann-Whitney U test was conducted to determine whether there was a difference in cryptocurrency usage of the consumers participating in the research according to their neurotic personality type. According to the test results, it was concluded that cryptocurrency usage differs according to neurotic personality type (U=2901, p<0,05. Table 4). According to this result, H_3 hypothesis was accepted. Individuals with neurotic personality traits tend to develop various behavioral attitudes to gain approval, support and acceptance from their environment in order to compensate for their lack of internal confidence (Sezici, 2022,52). It is natural for individuals with this personality trait to be influenced by the people around them when using and investing in cryptocurrencies.

H_4: Cryptocurrency use varies depending on the agreeableness personality type of consumers.

Mann-Whitney U test was conducted to determine whether there was a difference in cryptocurrency usage of the consumers participating in the research according to their agreeableness personality type. According to the test results, it was concluded that cryptocurrency usage did not differ according to agreeableness personality type (U=3892,000,

p>0,05. Table 4). According to this result, H_4 hypothesis was rejected. Similar to this result, Hitay and Anbar (2020) stated in their study that the agreeableness personality trait did not have a significant and negative effect on the financial risk tolerance levels of the participants.

H_5: Cryptocurrency use varies depending on the openness personality type of consumers.

Mann-Whitney U test was conducted to determine whether there was a difference in the cryptocurrency usage of the consumers participating in the research according to their openness personality type. According to the test results, it was concluded that cryptocurrency usage did not differ according to openness personality type (U=3607, p>0,05, Table 4). According to this result, H_5 hypothesis was rejected. Individuals with high levels of openness are creative, open-minded and intellectually curious. They are interested in trying new things, learning and different activities. Hitay and Anbar (2020) found that only the "Openness" factor has a linear and significant effect on financial risk tolerance. Dayı and Çetin (2021) found that openness did not have a significant effect on financial attitude. It is known that people with openness trait have stronger social interactions. İlgaz (2024) stated that social influence has a positive effect on individuals' attitude towards using cryptocurrency.

Table 4. Mann-Whitney U Analyzes on Consumers' Investment in Crypto Money and Personality Types

Personality Types	Invest in Crypto	N	Mean Rank	Sum Of Ranks	U	p	Hip.	Accep./ Rej.
Extroversion	I Invest in Crypto	49	99,07	4854,50	3629,5	,206	H_1	R
	I Do Not Invest in Crypto	168	111,90	18798,50				
Conscientiousness	I Invest in Crypto	49	117,15	5740,50	3716,5	,296	H_2	R
	I Do Not Invest in Crypto	168	106,62	17912,50				
Neurotic	I Invest in Crypto	49	133,80	6556,00	2901	,002	H_3	A
	I Do Not Invest in Crypto	168	101,77	17097,00				
Agreeableness	I Invest in Crypto	49	104,43	5117,00	3892	,559	H_4	R
	I Do Not Invest in Crypto	168	110,33	18536,00				
Openness	I Invest in Crypto	49	119,39	5850,00	3607	,186	H_5	R
	I Do Not Invest in Crypto	168	105,97	17803,00				

H_6: Cryptocurrency usage varies depending on consumers' financial attitudes.

Mann-Whitney U test was conducted to determine whether there was a difference in cryptocurrency usage according to the financial attitudes of the consumers participating in the research. According to the test results, it was concluded that consumers' use of crypto money does not differ according to their financial attitudes (U=4102,5, p>0,05, Table 5). According to this result, H_6 hypothesis was rejected.

Table 5. Mann-Whitney U Analysis of Consumers' Cryptocurrency Usage According to Their Financial Attitudes

	N	Mean Rank	Sum of Ranks	U	p
I Invest in Crypto	49	109,28	5354,50	4102,5	,972
I Do Not Invest in Crypto	168	108,92	18298,50		

H_7: Cryptocurrency usage varies depending on the income level of consumers.

According to the Kruskal-Wallis test, which was conducted to determine whether there is a difference between income groups and investing in crypto money, it was observed that there was a significant difference between the groups (X^2 = 11,754, p < 0,05, Table 6). As a result of multiple comparisons made with the Mann-Whitney U test, it was determined that this difference was between the low income group and the middle income group, and between the low income group and the high income group. As a result, the H_7 hypothesis was accepted and it was concluded that cryptocurrency use differs according to income level. Normawati et al., (2021) and Yanardağ (2019) found in their studies that crypto money is used for investment purposes, so individuals with higher income have a greater investment orientation. Individuals with lower income may tend to use crypto money in order to increase their earnings and earn more income.

Table 6. Cryptocurrency Usage Difference Analysis Table According to Consumers' Income Level

Income Levels	**N**	**Mean Rank**	**sd**	**X^2**	**p**	**Sig. Dif.**
Low (10.000 and below)	70	122,65	2	11,797	,003	Low-High
Middle (10.001-30.000)	70	108,70				Low-Middle
High (30.000 and above)	77	96,86				
Total	217					

H_8: Cryptocurrency use varies depending on the gender of consumers.

Mann-Whitney U test was conducted to determine whether there was a difference in the cryptocurrency usage of the consumers participating in the research according to their gender. According to the test results, it was concluded that cryptocurrency usage trends differ according to gender (U=4437,500, p<0,05. Table 7). According to this result, the H_8 hypothesis was accepted and it was concluded that gender has a significant effect on cryptocurrency use. Durak and Çise (2022) stated that cryptocurrency use differs by gender and that men use more cryptocurrency than women. According to the results of the research conducted by Tunç, Bozkurt, and Gürbüz (2018) on the use of information technologies by bankers, the use of information technologies differs by gender. Ilgaz and Özdemir (2024) stated that the perceived benefit, perceived ease of use, and perceived risk of using cryptocurrencies do not differ by gender, unlike the literature, but the effect of individuals'

attitudes and intentions towards using cryptocurrencies differs by age. Muharrrem and Kesbiç (2022) stated in their study that users' perceived trust in cryptocurrencies does not differ by gender.

Table 7. Cryptocurrency Usage Consumer Genders Table

Gender	**N**	**Mean Rank**	**Sum of Ranks**	**U**	**p**
Female	132	117,88	15560,50	4437,500	,000
Male	85	95,21	8092,50		

H_9: Cryptocurrency use varies depending on the age of consumers.

Mann-Whitney U test was conducted to determine whether there was a difference between the consumers' cryptocurrency usage according to their ages. According to the test results, it was concluded that cryptocurrency usage trends did not differ according to age (U=3138,500, p>0,05. Table 8). According to this result, the H_9 hypothesis was rejected and it was concluded that age does not have a significant effect on cryptocurrency use.

Table 8. Cryptocurrency Usage Consumer Ages Table

Ages	**N**	**Mean Rank**	**Sum of Ranks**	**U**	**p**
Under 45 years	179	110,47	19773,50	3138,500	,302
45- Over 45 years	38	102,09	3879,50		

H_{10}: Cryptocurrency use varies depending on the education level of consumers.

According to the Kruskal-Wallis test, which was conducted to determine whether there is a difference between the educational status of consumers and their use of crypto money, it was observed that there was a significant difference between the groups (X_2 = 10.061, p< 0,05, Table 9). As a result, the H_{10} hypothesis was accepted and it was concluded that the use of cryptocurrency differs according to the level of education. Durak and Çise (2022) stated in their study that people with a bachelor's degree use cryptocurrency more. Lusardi and Mitchell (2011) emphasized that this is due to the fact that people with bachelor's degrees have more financial literacy knowledge.

Table 9. Cryptocurrency Usage Difference Analysis Table According to Consumers' Education Levels

Education Levels	**N**	**Mean Rank**	**sd**	**X^2**	**p**
Student	11	133,50			
High School	11	123,64			
Vocational School	42	120,58			
University	55	105,88	4	10,061	,039
Postgraduate	98	101,39			
Total	217				

H_{11}: There is a relationship between consumers' financial attitudes and personality types.

H_{11a}: There is a relationship between consumers' financial attitudes and consumers' extroversion personality type.

H_{11b}: There is a relationship between consumers' financial attitudes and consumers' conscientiousness personality type.

H_{11c}: There is a relationship between consumers' financial attitudes and consumers' neurotic personality type.

H_{11d}: There is a relationship between consumers' financial attitudes and consumers' agreeableness personality type.

H_{11e}: There is a relationship between consumers' financial attitudes and consumers' openness personality type.

As a result of the Spearman Rank Difference correlation process, which was conducted to reveal whether there is a relationship between consumers' financial attitudes and their personalities, it was seen that there was a positive, weak but significant relationship between financial attitude and conscientiousness, openness, extroversion, agreeableness (rho= 0,268, 0,257, 0,251, 0, 230, $p<0,05$, Table 10) but there is no relation between financial attitude and neurotic personality type. H_{11a}, H_{11b}, H_{11d}, H_{11e} hypothesis were accepted, H_{11c} was rejected. In parallel with the results obtained in the research, Davey and George (2011) found that there is a significant relationship between individuals' personality traits and financial attitudes and behaviors.

Table 10. Correlation Between Consumers' Financial Attitudes and Personality Types

			Extroversion	Conscientiousness	Neurotic	Agreeableness	Openness
Sperman's rho	Financial	Correlation	,251**	,268**	,071	,230**	,257**
		Sig. (2-tailed)	,000	,000	,300	,001	,000
		N	217	217	217	217	217

5. Conclusion

It may not always be possible to explain the concepts in a clear way due to the involvement of psychology in the studies conducted with the participation of individuals. When it comes to human beings, it is known that human behaviour is affected by many factors. Personality factors play an important role in the behaviour of individuals.

Personality is important in every step from the information perceived when exposed to a stimulus, to the resistance shown against the messages given, to the use of the information received, to being convinced by the message given and even to decision making. It is normal for individuals' financial attitudes and investment preferences to differ according to their

personality traits. Individuals with different personality types and financial attitudes may direct their investments, savings and expenditures to different areas.

Based on this reality, the main question of this study is whether individuals prefer cryptocurrencies according to their personality types and financial attitudes. The aim of this study is to measure whether the use of cryptocurrencies, which are considered risky, is affected by the personality types and financial attitudes of individuals. For this purpose, data were collected using the survey method and the collected data were analysed with the help of SPSS 21.0 software.

As a result of the analyses, it is possible to summarise the results obtained in the light of the data collected from the participants as follows. The use of cryptocurrency does not differ for the other four personality types except for the neuroticism personality type of consumers. In other words, the introverted, neurotic personality structure of the person differs in investing in cryptocurrency. Individuals with neurotic personality structure may exhibit different behaviours to cope with being introverted and to be approved by their environment. It is considered normal for individuals with neurotic personality traits to be influenced by their environment when making investment decisions. The reason why other personality traits have no effect on the use of cryptocurrency is that the use of cryptocurrency is affected by different factors rather than personality traits.

Contrary to expectations, individuals' financial attitudes do not differ in terms of using cryptocurrency as an investment instrument. While the use of cryptocurrency differs according to the income level, education level and gender of individuals, age is not seen as a distinguishing feature. As the income level increases, the use of cryptocurrency increases. Men use cryptocurrency more than women. These results obtained from the study are similar to Tuygun (2022), Normawati (2021), Yanardağ (2019), Durak & Çişe (2022), Tunç et al. (2018). The fact that the age factor is not a distinguishing factor shows that cryptocurrencies are actually used by a wide age range. It would not be wrong to say that every legal age individual can use cryptocurrency.

When the relationship between individuals' financial attitudes and their personalities was analysed, it was found that there was a positive, weak but significant relationship between financial attitude and self-discipline, openness, extroversion and agreeableness, but there was no relationship between financial attitude and neurotic personality type. The result is similar to Davey & George (2011). We can say that individuals with conscientiousness, openness, extroversion and agreeableness personality traits exhibit more planned financial attitudes, but individuals with neurotic personality traits do not have such behaviours and their reactions are

more unpredictable and variable. In the light of these results, it is possible to say that the use of cryptocurrency is affected by socio-demographic characteristics rather than personality traits.

The study aims to make a contribution to the literature in terms of examining the use of cryptocurrency by considering personality traits. When the existing literature is reviewed, it is seen that studies generally focus on the demographic characteristics of cryptocurrency users. This study, which examines the financial attitudes and personality traits behind the use of cryptocurrency, aims to provide information to practitioners, users and researchers. As a result of the study, it is recommended that practitioners, users and researchers should be more strategic when determining the target audience and working with individuals with neurotic personality traits, and investment advisors should be careful about the personality traits, demographic characteristics and financial attitudes of individuals when making recommendations.

Studies on consumers or investors can be complex, especially when psychological factors are at play. For this reason, consumer studies and all studies that measure consumer behavior, attitudes and intentions are considered important as they will support the sector in general. The study is important because it will shed light on the sector as it is a study that considers consumers as investors and aims to make sense of their behaviors. It is thought that this study will be a guide for future studies.

The study is a multidisciplinary study that shows that not only economic and financial but also a psychological phenomenon such as personality can be effective in the use of cryptocurrency. In future studies, the investment behavior of neurotic individuals can be analyzed in more detail or factors that may affect other personality types can be investigated. The relationship between age, financial attitudes and personality traits can be examined, or comparisons and new research can be conducted on the situation of individuals in different countries. In conclusion, this study contributes to the literature both in understanding the multidimensional structure of individual investment behaviors and in developing more holistic analyses of the user profile of cryptocurrency markets.

REFERENCES

Ameliawati, M., & Setiyani, R. (2018). The Influence of Financial Attitude, Financial Socialization, and Financial Experience to Financial Management Behavior with Financial Literacy as the Mediation Variable. *KnE Social Sciences, 3*(10), 811–832. https://doi.org/10.18502/kss.v3i10.3174.

Atkinson, A. & Messy, F. A. (2012). Measuring financial literacy: results of oecd/ international network on financial education (INFE) pilot study. OECD Working Papers on Finance, Insurance and Private Pensions, No: 15.

Brooks, C., & Williams, L. (2020). *The impact of personality traits on attitude to financial risk*. SSRN. https://ssrn.com/abstract=372911.

Costa P.T., McCrae R.R. (1987). "Neurotlcism, Somatic Complaints, and Disease: Is The Bark Worse Than The Bite?", Journal of Personality, 55(2), 299-316.

Costa P.T., McCrae R.R. (1992). "Normal Personality Assessment in Clinical Practice: The NEO Personality Inventory", Psychological Assessment, 4(1), 5-13.

Czerwonka, Monika (2019), "Cultural, Cognitive and Personality Traits in Risk Taking Behaviour: Rvidence from Poland and the United States of America", Economic Research Ekonomska Istraživanja, 32(1), pp. 894-908.

Çizmecioğlu, S., & Akman, A. Z. (2021). Blok zincir ve kripto para konularının bibliyometrik bir analizi: 2015-2020 Dönemi. Business Economics and Management Research Journal, 4(1), 1-16.

Dayı, F., & Çetin, Z. N. (2021). Kişilik Özelliklerinin Bireylerin Finansal Tutumları Üzerindeki Rolü. Gümüşhane Üniversitesi Sosyal Bilimler Dergisi, 12(3), 1234-1251. https://doi.org/10.36362/gumus.957658.

Davey, J. ve George, C. (2011). Personality and finance: The effects of personality on financial attitudes and behaviour. International Journal of Interdisciplinary Social Sciences, 5(9), 275-294.

DeVries, P. D. (2016). An analysis of cryptocurrency, bitcoin, and the future. International Journal of Business Management and Commerce, 1(2), 1-9.

Demirci M.K., Özler D.E., Girgin B. (2009). "Beş faktör kişilik modelinin işyerinde duygusal tacize (mobbing) etkileri: hastane işletmelerinde bir uygulama", Khazar Journal of Humanities and Social Sciences, 12(2), 13-39.

Durak, İ., ve Çise, S. N. (2022). Dijital Finansal Tutum ve Davranışın Kripto Para Kullanımına Etkisi. Uluslararası İktisadi Ve İdari Akademik Araştırmalar Dergisi, 2(1), 1-18.

Esmer, Y., & Dayı, F. (2021). Akademisyenlerin Finansal Tutum ve Davranışlarının İncelenmesine Yönelik Bir Araştırma. Yaşar Üniversitesi E-Dergisi, 16(61), 1-19. https://doi.org/10.19168/jyasar.646714.

Evlimoğlu, U., & Güder, M. (2021). Tarihteki Ekonomik Balonlar Işığında Kripto Paralara Genel Bir Bakış. Abant Sosyal Bilimler Dergisi, 21(3),469-496. https://doi.org/10.11616/asbi.955230.

Feist J., Feist G.J. (2008). Theories of Personality (7th Edition), McGraw−Hill Primis.

Gegez, E. A. (2010). Pazarlama Araştırmaları, 3. Baskı, Beta Yayınları, İstanbul.

Gürsoy, İ., & Tor-kadıoğlu, C. (2022). Tüketicilerin Kripto Para Kullanma Niyetlerinin Kişilik Tiplerine Göre Değerlendirilmesi. Nevşehir Hacı Bektaş Veli Üniversitesi SBE Dergisi, 12(Dijitalleşme), 1-17. https://doi.org/10.30783/nevsosbilen.1160494

Gümüş, F.B., Koç, M., & Agalarova, M. (2013). Bireysel yatırımcıların yatırım kararları üzerinde etkili olan demografik ve psikolojik faktörlerin tespiti üzerine bir çalışma: Türkiye ve Azerbaycan uygulaması. Kafkas Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 4(6), 71–94.

Hitay, K., & Anbar, A. (2020). Kişilik Özelliklerinin Finansal Risk Toleransı Üzerindeki Etkisi: Üniversite Öğrencileri Üzerine Bir Araştırma. Muhasebe Ve Finansman Dergisi(87), 203-224. https://doi.org/10.25095/mufad.756296.

İlgaz, S., & Özdemir, E. (2024). Bireylerin Kripto Para Kullanmaya Yönelik Niyetlerinin Teknoloji Kabul Modeli İle İncelenmesi ve Çoklu Grup Analizi. Muhasebe Ve Finansman Dergisi(102), 79-108. https://doi.org/10.25095/mufad.1416542

İnanç Y.B., Yerlikaya E.E. (2011). Kişilik Kuramları, Pegem Akademi, İzmir.

İnceoğlu, M. (2011). Tutum Algı İletişim (6. baskı). Ankara: Siyasal Kitabevi

John O. P., Srivastava S. (1999). "The Big-Five Trait Taxonomy: History, Measurement, And Theoretical Perspectives", Handbook Of Personality: Theory And Research, (edit. L. A. Pervin & O. P. John), 2, 102–138, New York: Guilford Press.

Muharrem, Ş., & Kesbiç, C. (2022). Kripto Para Kullanımı Üzerine Bir Araştırma: Manisa Örneği. Finans Ekonomi Ve Sosyal Araştırmalar Dergisi, 7(4), 632-651. https://doi.org/10.29106/fesa.1136679.

Nakamoto, S. (2008) Bitcoin: A Peer-to-Peer Electronic Cash System. https://bitcoin.org/bitcoin.pdf

Kendir, E., & Aslantaş Ateş, B. (2024). Kripto Para Piyasası ve Yatırımcı Eğilimleri Analizi. Hitit Sosyal Bilimler Dergisi, 17(1), 1-24. https://doi.org/10.17218/hititsbd.1372062

Koç E. (2012). Tüketici Davranışı ve Pazarlama Stratejileri, Seçkin Yayıncılık, Ankara.

Kotler P., Armstrong G. (2016). Principles of Marketing, Pearson, Edinburgh.
Kroesen, M., Handy, S., & Chorus, C. (2017). "Do attitudes cause behavior or vice versa? An alternative conceptualization of the attitude-behavior relationship in travel behavior modeling." Transportation
Research Part A, 101(7): 190- 202
Kukman, T., & Gričar, S. (2025). Blockchain for Quality: Advancing Security, Efficiency, and Transparency in Financial Systems. *FinTech*, *4*(1), 7. https://doi.org/10.3390/fintech4010007
Lusardi, A., & Mitchell, O. S. (2011). "Financial Literacy Around The World: An Overview",Journal Of Pension Economics & Finance,10(4), 497-508.
Luo, D., Tapas, M., Yarovaya , L., & Zhang, Z. (2021). Investing in times of fintech revolution: ambiguity and return. Sustainable Financial Innovation Centre (SFiC) Annual Conference University of Birmingham, 1–38.
McCrae R.R., Costa, P.T. (2006). Personality in Adulthood, New York, Guilford.
McCrae R.R., Costa, P.T. (2008). "The Five-Factor Theory of Personality", (Edit. Oliver P. John Richard W. Robins Lawrence A. Pervin), Handbook of Personality, 3Th Edition, Chapter. 5,159-181, Guilford Press, London.
McCrae R.R., Sutin A.R. (2009). "Openness To Exprience", (Edit. Mark R. Leary, Rick H. Hoyle), Handbook of Individual Differences in Social Behavior, Chapter. 17, 257-273, Guilford Press, London.
Morgan C.T. (2010). Psikolojiye Giriş, (çev: Sirel Karakaş, Rükzan Eski), Eğitim Kitabevi Yayınları, Konya.
Morgan G.A., Leech N.L., Gloeckner G.W., Barrett K.C. (2011). IBM SPSS For Introductory Statistics Use and Interpretation, 4th Edition, Routledge, New York.
Nandan, T., & Saurabh, K. (2016). *Big-five personality traits, financial risk attitude and investment intentions: Study on Generation Y*. Journal of Behavioral and Experimental Finance, 12, 28–43. https://doi.org/10.1016/j.jbef.2016.07.001
Namlı, S., & Kaya, A. (2018). Lisans öğrencilerinin finansal tutum ve davranışlarının ölçülmesi: Spor bilimleri fakültesi örneği. 3.Uluslararası El Ruha Sosyal Bilimler Kongresi, Şanlıurfa.
Normawati, R. A., Rahayu, S. M., & Worokinasih, S. (2021, May). Financial Knowledge, Digital Financial Knowledge, Financial Attitude, Financial Behaviour and Financial Satisfaction on Millennials. In ICLSSEE 2021: Proceedings of the 1st International Conference on Law, Social Science, Economics, and Education, ICLSSEE 2021, March 6th 2021, Jakarta, Indonesia (p. 317). European Alliance for Innovation.
Onur, N., & Nazik, M. H. (2014). Öğretmenler İçin Bireysel Finans Alanında Finansal Tutum Ölçeğinin Geliştirilmesi (FTÖ): Geçerlik Ve Güvenilirlik Çalışması Özet. *E-Journal of New World Sciences Academy*, *54*.
Pankow, Debra. (2003). Financial, Values, Attitudes and Goals. North Dakota State University Fargo. North Dakota 58105.
Pittenger D. (2004). "The Limitations of Extracting Typologies From Trait Measures of Personality", Personality and Individual Differences, 37, 779-787.
Robbins S.P., Judge T.A. (2013). Organizational Behavior, (15th Edition), Pearson, Edinburgh.
Raymaekers, W. (2015). Cryptocurrency bitcoin: Disruption, challenges and opportunities. Journal of Payments Strategy & Systems, 9(1), 30-46.
Robbins, S. (1994) Örgütsel Davranışın Temelleri (Çev: Sevgi Ayşe Öztürk) Eskişehir ETAM Basım Yayın.
Sarı Özgün, H. (2024). Kripto Para Kavramına Farklı Bakışlar ve İncelemeler. Uygulamalı Bilimler Fakültesi Dergisi, 6(1), 1-19.
Sezici, E. (2022). Nevrotik Kişilik Özelliğinin Rol Davranışı Üzerindeki Etkisinde İşyerinde Dışlanmanın Aracılık Rolü. Uluslararası Türk Kültür Coğrafyasında Sosyal Bilimler Dergisi, 7(1), 51-64. https://doi.org/10.55107/turksosbilder.1066350
Solomon M.R. (2013). Consumer Behavior Buying, Having and Being, (10th Edition), Pearson, Edinburgh.
Şimşek Ş. M., Akgemci T., Çelik A. (2010). Davranış Bilimleri, Gazi Kitabevi, Ankara.
Tunç, H., Bozkurt Çetinkaya, Ö.,- Gürbüz, H. (2018), "Banka Çalışanlarının Bilgi Teknolojileri Kullanımının Teknoloji Kabul Modeli (TKM) İle İncelenmesi", Bankacılık ve Sermaye Piyasası Araştırmaları Dergisi, 2(6), ss. 28-42.
Tuygun, İ. (2022). Kripto Para Yatırımcı Tutumlarının Sosyo-Demografik Değişkenler Üzerinden İncelenmesi. Erişim adresi:https://acikerisim.aksaray.edu.tr/xmlui/bitstream/handle/20.500.12451/10092/tuygun-ismail2022.pdf?sequence=1
Ünal, G., & Uluyol, Ç. (2020). Blok Zinciri Teknolojisi. Bilişim Teknolojileri Dergisi, 13(2), 167-175. https://doi.org/10.17671/gazibtd.516990
Ünsal, E., & Kocaoğlu, Ö. (2018). Blok Zinciri Teknolojisi: Kullanım Alanları, Açık Noktaları ve Gelecek Beklentileri. Avrupa Bilim Ve Teknoloji Dergisi(13), 54-64. https://doi.org/10.31590/ejosat.423676.

Yanardağ, N. (2019), Cryptocurrency Investment Decısıons And Behavıoral Bıas Effect, Master's Thesis, Istanbul Bılgı Unıversıty, İstanbul.

Zengin, E. (2024). *Yatırımcı Eğilimlerinin Davranışsal Finans Bağlamında İncelenmesi: Kripto Para Piyasaları Ve Pay Piyasaları Yatırımcıları Üzerine Karşılaştırmalı Bir Araştırma*. Doktora Tezi, Düzce Üniversitesi. Düzce Üniversitesi Açık Erişim Sistemi. https://acikerisim.duzce.edu.tr/items/421ec93d-7318-4839-af33-b5fa198f1e61