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Research Article

A netnography study examined consumer perception towards cryptocurrency investment during the COVID-19 pandemic

COVİD-19 döneminde kripto para yatırımına karşı tüketici algısını inceleyen bir netnografi çalışması

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Abstract

There is an increasing interest in cryptocurrencies, especially with the change brought to our lives by the COVID-19 pandemic regarding digital platforms. In this context, it is seen that many YouTube channels and Twitter accounts have digital interaction and produce current content about the circulation of digital currency that users have an intense interest in Turkey. Therefore, a three and half years (2019-2022) netnographic field study was conducted focusing on YouTube and Twitter platforms to evaluate interaction trends in the attitudes and behaviours of users about cryptocurrency investments in Turkey and compared to the pre-pandemic period. The study results show that, with the economic recession resulting from the pandemic, people and companies have an increasing interest in cryptocurrencies, especially in terms of saving and investment. This reveals that the increase in interest has transformed the pre-pandemic negative perception, and users have taken steps to interact and invest more.

Keywords: Blockchain, COVID-19 Pandemic, Cryptocurrency, Netnography, Twitter and YouTube

Jel Codes: A13, C93, D71, G41, M31

Öz

COVİD-19 salgın döneminin dijital platformların kullanımına dair hayatlarımıza getirdiği değişim ile birlikte kripto paralara karşı artan bir ilgi düzeyinin olması dikkat çekicidir. Bu bağlamda, Türkiye'de kripto para dolaşımı üzerine dijital etkileşimin bulunduğu çok sayıda YouTube kanalı ve Twitter hesabının güncel içerik üretimi gerçekleştirdiği ve kullanıcıların bu konu hakkındaki yoğun etkileşim ilgisi görünmektedir. Araştırma dahilinde, Türkiye'de kripto para yatırımına karşı kullanıcıların tutum ve davranışlarının nasıl bir etkileşim yönelimi aldığını ve salgın dönemi öncesine göre nasıl bir değişimin olduğunu incelemek üzere YouTube ve Twitter platformlarını odağına alan üç buçuk yıllık (2019-2022) netnografik bir saha çalışması yürütülmüştür. Çalışmadan elde edilen bulgular, salgın döneminin yarattığı ekonomik resesyon ile birlikte kullanıcıların ve firmaların özellikle ekonomik birikim ve yatırım alanında kripto paralara karşı artan bir ilgisinin olduğunu göstermektedir. Bu ilgi artışının Türkiye'deki kripto para yatırımına yönelik salgın öncesi olumsuz algı koşullarını dönüştürdüğünü; kullanıcıların daha çok etkileşim kurmaya ve yatırım yapmaya yönelik adım attıklarını ortaya koymaktadır.

Anahtar Kelimeler: Blok Zinciri, COVİD-19 Salgını, Kripto Para, Netnografi, Twitter ve YouTube

JEL Kodları: A13, C93, D71, G41, M31

Introduction

Trade has existed throughout human history, and goods and services have been exchanged in various ways. These exchanges took place with products equivalent to goods or services, precious metals, and finally, money (Weatherford, 2009, pp. 15-27; Karaoğlan, Arar and Bilgin, 2018, p. 16). The difficulties experienced in commercial relations through barter forced the invention of money as a value to replace barter (Ricardo, 1817; Aristoteles, 2000; Harari, 2016; Fidan, Dilek and Esev 2019, pp. 142-143).

The Lydians introduced the first money known to be officially used in the world in 650 BC, and it was called 'electron'. After the electron started to be used in the country, it was accepted by the surrounding cultures, became widespread rapidly, and was used as the main currency in all commercial activities. Paper money was invented when parchment was found in China. The state guaranteed that the amount written on the paper used as money would be met with gold or silver according to its value. The first step was taken towards the symbolization of money as a commercial exchange value (Akbulut, 2009).

The biggest and most valuable asset of today's society in circulation is data and the intellectual capital that controls this data (Kaku, 2014). Today's data society symbolically exchanges and legitimizes all values and commodities through digital circulation. The COVID-19 pandemic and the process we were through in 2020 as humanity has helped us understand the value of data and the importance of symbolic circulation objects from a different perspective. Cryptocurrency shows us how important it has become with the increasing e-commerce data traffic in the COVID-19 pandemic period, especially due to the unpredictable rise in the value of Bitcoin. It is seen that the structure of all stakeholders investing and pioneering in cryptocurrency and technologies together with the central authorities and the user-consumer target group, which is the one-to-one addressee of the subject, is changing.

Throughout the pandemic, social media has played an important role in spotlighting digital currencies as the main source of content that draws a growing interest. In the context of cryptocurrencies, the acceleration of interaction between the content creator and the consumer, especially during the pandemic period, is significant.

In this context, the study's main research question (RQ) is how the consumer perception of users towards cryptocurrency investment in Turkey interacts with digital platforms during the COVID -19 period.

In the information civilization, where today's most valuable exchange object is data itself, something like the COVID-19 pandemic has once again captured all humanity, where it is located, its temporality, its physical extensions and its unblocked points. While the world is rapidly moving towards a completely digital order and a virtual plane with all these changes and developments, it seems that it is no longer possible to reject all these phenomena (Hussain, 2020).

Thanks to blockchain technology, cryptocurrencies, which step into our world with a small manifest text, create a great speculative effect from the moment they are shared with the public and provide dazzling effects to investors with a great appetite. It is thought that the COVID-19 period has had significant effects on cryptocurrencies and caused changes in social life. In this process, especially social media played an important role in terms of change (Mnif, Jarboui and Mouakhar, 2020; Demir, Bilgin, Karabulut and Doker, 2020; Goel and Gupta, 2020)

Theoretical background

With the advancement and leadership of technology, alternative payment systems and tools have emerged that can replace money. Credit cards, also called 'plastic money', are the most popular of these technologies (Çavuş, 2006, p. 174). However, looking at the cryptocurrencies that came to the agenda again with the pandemic period and showed an increase in value, it is seen that a new actor is taking the place of plastic money. The world's leading credit card brand Visa has announced that it has launched a card program that can be used entirely for crypto money transactions and has agreed with nearly sixty crypto money platforms (Caymaz, 2021).

The digital transformation of money

Virtual money is any digital currency, including the money in credit cards, in-game currencies used in video games, gift cards valid at a particular store, and cryptocurrencies. Cryptocurrency stands before us as the most influential concept of the day, especially when it is considered with the European Central Bank (ECB) definitions and as the technical assurance of the representative value of money. The ECB (2012, p. 13) defines virtual money as "an unregulated, digital currency generally controlled by its developers, adopted and used by limited virtual group members". The ECB has also updated this definition as "A digital representation of a value that can be used in place of money in some cases, even

though any central bank does not issue it, credit institution or e-money institution" (Çarkacıoğlu, 2016, p. 8).

Cryptocurrencies are also virtual currencies because they exist in the digital environment. Still, it has a more complex concept set under the definition of virtual money since each cryptocurrency is designed with a different blockchain circulation feature. The fact that digital currency is much faster than other economic exchange systems have no production cost, free from central control, and is anonymous makes digital currency systems and transactions in these systems attractive to their users (Norbutas, Ruiter and Corten, 2020, p. 151; Pirinççi 2018, p. 47; Yardımcıoğlu and Şerbetçi 2018, p. 166).

Cryptocurrencies are produced in these decentralized blockchain systems, with publicly available methods and predetermined amounts. Therefore, governments, companies, or certain authorities cannot manipulate the existing cryptocurrency assets without permission. In addition, there is no obstacle for central authorities who want to be included in the ecosystem to issue their cryptocurrencies. Finally, cryptocurrency cannot be taxed or registered without an owner or a country.

Bitcoin and altcoin

The first digital currency to represent cryptocurrency is Bitcoin, presented to the digital ecosystem by a developer using the pseudonym Satoshi Nakamoto and a text containing the usage philosophy and algorithm information. Nakamoto (2008) announced Bitcoin with a manifesto with the symbol ₿ and the abbreviation BTC. Bitcoin is the first cryptocurrency registered as a virtual currency that does not belong to any central bank or official institution. Today, Bitcoin has become a brand integrated with cryptocurrency in general (Nakamoto, 2008). Nakamoto (2008) designed Bitcoin to exist as a total of 21 million blocks. At the time of the study, 18 million 610 thousand 956 Bitcoins were traded in the market (Bitcoin Price Today, BTC Marketcap, Chart, and Info, 2021).

There are many cryptocurrencies besides Bitcoin. These cryptocurrencies are called "altcoins". Some of these are Ethereum, Litecoin, Ripple, Tether, and Chainlink, and there are over five thousand altcoins in the market. All altcoins are created inspired by the blockchain technology infrastructure developed with Bitcoin (Çarkacıoğlu, 2016, p. 54).

The underlying technology of Bitcoin and altcoins is the blockchain technology known as "BlockChain". Nakamoto first revealed blockchain technology in the manifesto describing Bitcoin (Pierro, 2017, p. 97). Blockchain is a public and open database, also called a "digital global ledger", and includes sequential and time-stamped cryptocurrency transfers (Çarkacıoğlu, 2016, p. 42). The data added to the blockchain is recorded in the information store in an irreversible and incorruptible manner, all transactions made so far are included in the chain, and all ongoing transactions are arranged to be recorded on the blockchain. Since this information is stored independently in a decentralized system consisting of numerous interconnected computers, it is highly protected against central error (Wright and De Filippi, 2015, p. 93). Since blockchain technology has a distributed system and all data is interconnected, if it is changed as a result of outside intervention, the other ends of the node will notice this, and malicious actions will not be verified. Since the system is self-protecting and accessible and controllable by everyone, it is expected to continue safely (Ünal and Uluyol, 2020, p. 168).

After the first adoption of Bitcoin as a cryptocurrency and its widespread use on the deep web, it has become an asset value recognized and used in the entire internet ecosystem quickly. With increasing popularity, this first cryptocurrency has thus gained users' trust. Moreover, with the new rush to digital money, other digital currencies known as altcoins have been introduced quickly (Chohan, 2017, pp. 1-2).

Cryptocurrencies and risk

The natural sense of trust in a certain authority and control mechanism in traditional economic systems has not yet been able to fully provide the same trust to its users due to the distributed technology and applications in the cryptocurrency ecosystem. The general understanding of trust in the cryptocurrency market can be described as trust in the system, not individuals (Çarkacıoğlu, 2016). Although blockchain technology creates a reliable environment for cryptocurrencies and their transactions, human-induced security vulnerabilities also arise with the entry of third parties into the ecosystem. Users who circulate their money through other institutions to acquire cryptocurrencies also benefit relatively less from the security opportunities provided by blockchain technology. An example is the sudden closure of the 'Thodex' company, an intermediary institution in Turkey, and the company owner's flight abroad with the investors' money (Yavuz, 2021). In this case, the situation that causes harm to users is not a technical problem originating from the blockchain but the action taken by a malicious operator who disappeared with the money invested in his company, taking advantage of the lack of legal ground.

Global e-commerce, developing with the internet, also needs a material currency suitable for the flexibility and speed of its ecosystem. With the disappearance of borders, the difficulties brought by currencies connected to various nations and authorities negatively affect global e-commerce (Çağlar, 2007, pp. 181-182). Hence, despite the aforementioned factors that create distrust, the mobility of the cryptocurrency ecosystem has increased, especially thanks to the image of Bitcoin, expanded its sphere of influence, and turned into a new habit and investment perspective with the COVID-19 pandemic in Turkey as well. Also, the efforts to provide a legal basis for the cryptocurrency ecosystem have started, aiming to protect service providers and users from harm. Furthermore, it is planned to take steps that can form a basis for taxation.

Cryptocurrency in Turkey and COVID-19 effects

In 2013, the Banking Regulation and Supervision Agency (BRSA) issued a statement (Press Release About Bitcoin, 2013). It announced that Bitcoin is not within the scope of law No. 6493 (TCMB - Law No. 6493, 2013) and is not controlled as it is considered electronic money (Çarkacıoğlu, 2016, p. 12). As a result, the states suffered a significant loss of revenue due to the lack of taxes on the cryptocurrency system, which operates outside the government's control. States seeking to construct a legal framework for cryptocurrencies which are increasing at an exponential rate, have become more understanding of them in recent years as they seek to protect their citizens' rights to use their taxation power (Turan, 2018, pp. 3-4). Turkey's cryptocurrency 'BiLira' is one of the most significant examples of this situation. In addition, some large intermediary institutions in digital currency investment appear publicly and try to communicate to users that there is no legal problem in buying, selling, or hosting digital currency and that investors can overcome the trust problem through institutional intermediaries. As an example of the steps taken to ensure this trust, the case that 'BtcTurk', an intermediary institution, is the main sponsor of the Turkish Football National Teams (Köse, 2020). As a result of all these positive developments and the publicity efforts of intermediary institutions, in 2021, Turkey ranked first among European countries and fourth in the world in the use of cryptocurrencies, as shown in Figure 1 below (Buchholz, 2021). The reason for sharing Turkish citizens' global crypto investment rankings is to show the popularity it reached when the pandemic process started and peaked.

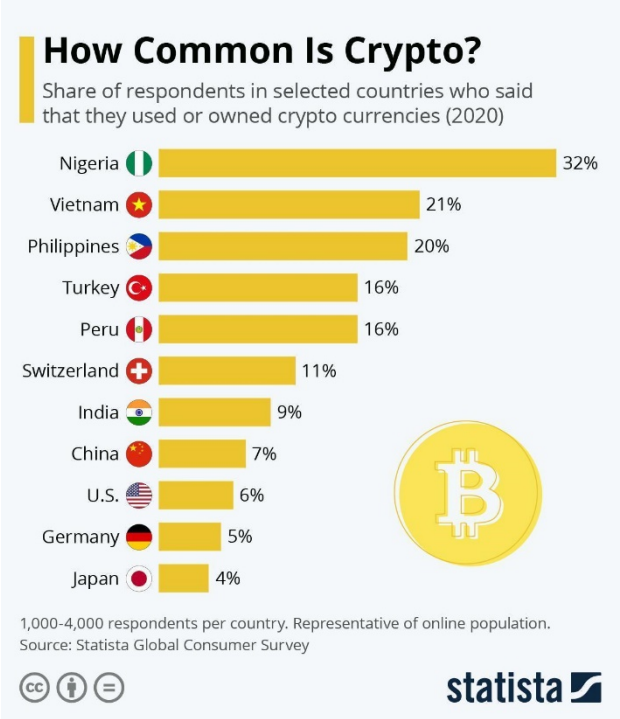


Figure 1: Data on Rates of Citizens Using Cryptocurrency by Country

Source: Statista, 2020

Although there have been many crises, the COVID-19 pandemic has gained a special place for itself with its economic effects. Its effects on social relations and social order, the great confusion in the health field, and especially the full effect of change on consumer behaviour (Soylu, 2020, pp. 170-171). Furthermore, the resulting obstacles to retail trade have affected the behaviour of both business owners and consumers (Donthu and Gustafsson, 2020, p. 284).

In the early days of the pandemic, when the lockdown came to the agenda for the first time, increased consumption, defined as panic shopping by Hobbs (2020, pp. 171-172), was experienced due to the great concern in public and people bought and even stocked products they needed or not. After the panic shopping process was over, e-commerce replaced retail shopping due to lockdowns and increased people's awareness (Donthu and Gustafsson, 2020, p. 285). Even individuals who opposed online shopping before the outbreak began to purchase at this time. The first cases and measures at the borders of Turkey took place in March 2020, and e-commerce user data showed a great change in the following months, as seen in Figure 2.

The increase in online trade after April 2020, when the pandemic lockdown was announced for the first time when it was applied for the first time, attracted attention, and it was seen that people could adapt to this situation quickly. Moreover, consumers' confidence in online trade has increased with every consumption activity that is necessarily moved to the online environment due to COVID-19 (Baker, Farrokhnia, Meyer, Pagel and Yannelis, 2020, 839). Indeed, 49% of Turkish consumers stated that they would continue online shopping in the medium and long term and were afraid of being infected by grocery shopping (UIB, 2020).

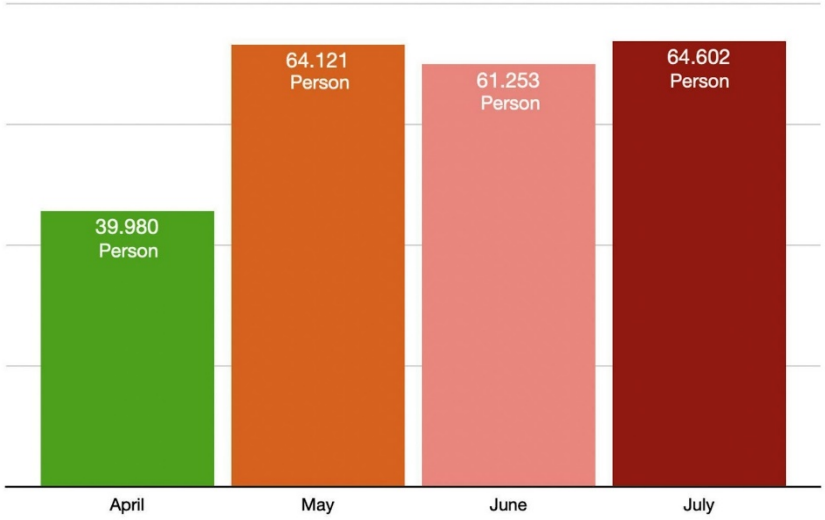


Figure 2: Turkey 2020, Second Quarter E-commerce User Data, 2020

Source: Republic of Turkey Ministry of Commerce, 2020

Also, the increased popularity of cryptocurrencies was not limited to trading and investing in cryptocurrencies. It has been observed that the follower, viewer, and interaction statistics of all content providers and social media influencers who analyse cryptocurrencies have also increased, and they received their share in the digital ecosystem. Therefore, account owners who produce content on digital currencies were examined with a netnographic field study on YouTube and Twitter to understand and analyse the evolving interest and perception towards the concept and use of digital money in Turkey during the COVID-19 pandemic.

Method

It has been observed that cryptocurrency, which has gradually expanded its market share in Turkey with an increased number of investors and intermediary institutions, has undergone a great distinction with the COVID-19 pandemic and the transition of all life to the digital environment. In this context, the perception of the consumer towards digital currency investment, mobilizing and transforming the digital currency ecosystem in Turkey with all its elements during the COVID-19 pandemic constitutes the study's base and research question subject. (The main RQ is how the attitudes and behaviours of users towards cryptocurrency investment in Turkey take an interaction tendency on digital platforms during the COVID-19 period). With this approach, how the change in social media accounts with digital money content, which has become more active, especially during the pandemic, affects the behaviour of digital currency investors by creating a new consumer perception examined with netnography for 3,5 years from 2019 to 2022.

Adaptation of the netnographic study

Since this study aims to examine the digital commerce behaviours of people, netnography is suitable for use in this study. In this study, netnography was used as the main data collection method.

Netnography is formed by combining the words 'internet' and 'ethnography'. It is the internet or technological network ethnography (Kozinets, 2009).

As ethnography can be applied to all societies and cultures, netnography can also be applied to all online sites, digital communities, and various internet resources (Kozinets, 2009). To interpret netnography based on ethnography, Ethnography first seeks and approaches a naturally existing, living and breathing culture. Then, Netnography also applies this approach in the digital environment.

This study examined the habitats in which cryptocurrency communities are naturally shaped. It then explores cultural understanding with an active stance that promotes ethnography, personal participation and objective observation. The same is true for netnography in the digital environment, and in this study, participation and observation in cryptocurrency communities were carried out objectively. Ethnography seeks to create rich definitions by seeking a living language that is intense and evocative, reflecting the objective and emotional realities of the members of that culture.

Netnography also actively strives to create rich definitions in the digital environment that already has unique definitions. Ethnography describes the lived reality of culture by using different methods such as interviews, semiotics, projective technique, photography, and video without discrimination. These methods are already in the natural flow of netnography. Therefore, these methods also played a very important role in this study. Ethnographies are applied to all major cultures in the world, and netnography shows the same functionality to adapt to any environment within the digital environment (Kozinets, 2010).

Netnography comprises six steps: research planning, introduction, data collection, interpretation, ethical standards and research presentation (Kozinets, 2010). While the research was being planned, the number of interactions was observed by searching the contents and keywords of the crypto money world on social media platforms. And the communities to be included were listed, and with the information obtained, the social platforms where the work will take place and the communities to be included have been determined.

Then a user profile was created from scratch for the introduction step and to get involved in the communities. In the data collection phase, observations were continued throughout the process, and an active participation process was passed. Topics of interest to the community members were determined, and the participation of the community members followed their interactions with the digital content producer. The number of followers, views and comments were regularly observed. Finally, the data collected from the observations were brought together and interpreted with an objective approach.

In order to comply with ethical standards, public communities were preferred, and all participants were included in the study anonymously. In addition, public groups are more advantageous in terms of interaction level. Therefore, the research presentation stage was not made public. Still, during the process, the data were shared with the community members contacted within the digital communities, and their opinions were taken.

During the 3,5 years of netnographic field research, the researchers' prior knowledge and experience of the cryptocurrency world were based. New research-oriented digital identities were created, and media access was provided from scratch. With new accounts, the crypto money ecosystem has been experienced on YouTube and Twitter platforms. In this direction, as explained above, all participants in the ecosystem as users were observed, examined, and recorded in the context of netnographic field methodology techniques. In order to increase the quality of the research field, it has been tried to communicate with the following cryptocurrency phenomena in various ways. However, as a result of this research effort to collect insider experience, no response was provided. Throughout the research, the researchers maintained their behavioural tendencies as active participants in the ecosystem. They observed active group members liking, commenting, and re-sharing content on digital platforms, as Kozinets (2009) had suggested.

As seen in Figure 3, YouTube and Twitter are among Turkey's most used digital platforms. These platforms are also the environments where cryptocurrency-related content is produced most actively. After it was determined that content producers and digital money communities were active on YouTube and Twitter, the research was adapted to these ecosystems, and remarkable digital money communities and content producers were determined.

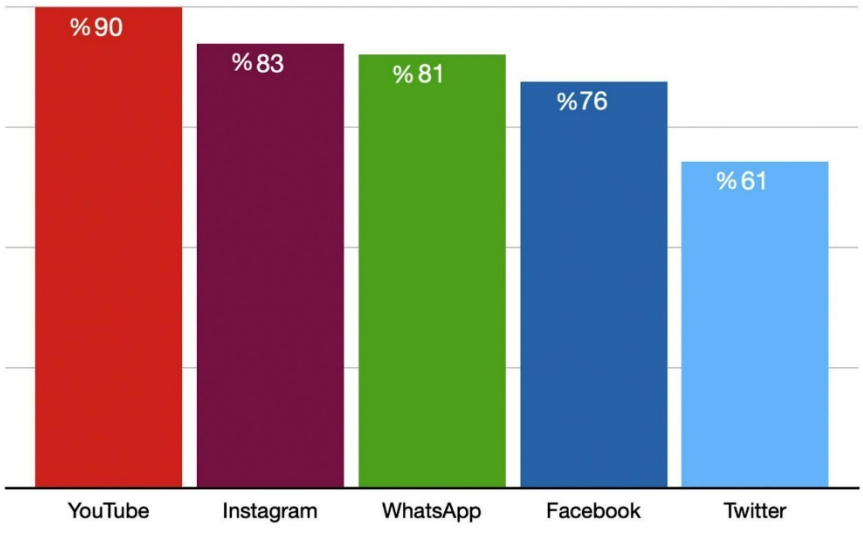


Figure 3: Most Used Social Media Platforms in Turkey 2020

Source: Digital 2020, 2020

YouTube has advantages such as high traffic, streaming power, original content, live broadcast, high interaction, advertisement, and income competition. All these preferences created an ideal sharing ecosystem for content producers on cryptocurrency.

Despite having fewer users than other popular social media platforms, Twitter positions itself differently from others regarding interaction approach and content production (Digital 2020, 2020). It also stands out as the primary communication channel preferred by the Turkish digital currency community.

In both ecosystems, before and during the pandemic, researchers took part as cryptocurrency community members and determined their positions as participant observers like Lewin's (1946) pioneer action research setup. Especially after the pandemic, an increase was observed in the number of views, subscribers, comments, and likes for cryptocurrency channels on YouTube. The same increase followed cryptocurrency creators on Twitter. Both social media platforms had active cryptocurrency communities reacting with comments and posts from followers that were carefully analysed and evaluated for results.

The content producers followed in the study were selected from among the content producers who regularly produce content and interact actively during the pandemic process. Many content producers were observed at the beginning of the netnography process. Still, they were included in the study with various factors such as active content production, interaction and engagement with their followers, the strategy of sharing content and the number of active followers.

Ethical research standards were considered, and the accounts of all cryptocurrency content producers used in the analysis were shared in the study. Furthermore, all individual users whose comments were included in the study were evaluated respecting anonymity. Before the pandemic, researchers followed the previously mentioned cryptocurrency communities on digital platforms and used a participatory research method based on observation. As a result of the netnography study to answer the research questions, their roles and responsibilities have not changed. With the adaptation of netnography, all the experience-based knowledge and observation were combined with the interaction practices and knowledge to obtain in-depth and clear results in the study.

Results and discussion

Investors show serious interest, especially in investment experts and content producers on digital platforms, to learn and analyse the terminology of the technology, the behaviour, and components of the cryptocurrency market to consciously invest in blockchain technology (Metzler, Günnemann and Miettinnen, 2019, pp. 50-51). In this context, the number of experts and social media influencers producing informative and instructive content about the cryptocurrency market, and the interaction rates with their users, have increased significantly in the last one and a half years, dominated by the COVID-19 pandemic. To learn more about the cryptocurrency market and increase their investment profits, it is observed that investors devote a significant amount of time and care to the content created by these content producers.

Content analysis of YouTube on the cryptocurrency ecosystem

The strong relationship between the increase in interest of investors and users towards digital currency content and the COVID-19 pandemic can be determined by the interaction and subscriber growth rates of content producers' social media accounts with digital currency content on YouTube. Therefore, ten channels with cryptocurrency content were evaluated to examine the relevant effect and relationship.

Table 1: YouTube Cryptocurrency Content Channels and Total Subscribers Numbers in Turkey

Channel Name	Channel Link	2019 March	2020 March	2021 March	2022 March
Kripto Emre	www.youtube.com/channel/UC87A7vsRlyZ68gtu-z1Q3ow	44.898	54.700	161.000	275.000
Bitcoin Kraliçesi	www.youtube.com/channel/UC8esaL8Eqtf7uJ-uyvs-Vhw	8.257	9.460	29.200	36.200
Kripto Teknik	www.youtube.com/channel/UCKdhjP8yA36w4z-oCp5uLHg	14.010	24.700	105.000	172.000
Alp Işık	www.youtube.com/user/isikalp91	38.576	39.100	53.400	58.100
Kripto Sözlük	www.youtube.com/channel/UC5rV0QEGbv0Y-umDwshs_HA	17.139	30.400	108.000	225.000
Crypto Kemal*	www.youtube.com/channel/UC1fKWikH62KOnunjHiMrVvA	1.030	6.400	117.000	279.000
Kripto Para Dünyası**	www.youtube.com/channel/UCaRoOmWfiu-KmasBUb-LKvw	2.630	6.740	37.300	71.200
Monte Kripto Kontu	www.youtube.com/channel/Ucw12sf27ULPZgRcmo8t31rQ	38	435	16.900	64.900
Koinvizyon	www.youtube.com/channel/UCIYc-CFOYNwO85Ojejj6T9w	15.220	15.900	43.300	110.000
ICRYPEX**	www.youtube.com/channel/UC1GYP4S6zxbI9FdobqTTcHQ	676	1.170	88.800	158.000

Source: Social Blade, 2022

Note: *The first video was published in December 2019., ** The first video was published in November 2019.

As is seen in Table 1, it is noteworthy that the new conditions brought by the COVID-19 pandemic have created a subscriber and follower ratio that doubled and even tripled in some cases regarding the number of channel subscribers. The number of content producers in the cryptocurrency ecosystem has remained similar, and the interest of new participants in the channels of these content producers has emerged as an indicator that the ecosystem is going through a more active process than ever. Many users approach the process with a similar motivation, like this user who commented on the content: "This is my first entry to Bitcoin. I hope your videos will help me. Thanks" (User 1, 2020).

There is a very close relationship between various global events and the value and popularity of cryptocurrencies. For example, with the first emergence of COVID-19, Bitcoin gained 10% in value in about a week (Cuthbertson, 2020). In this context, a YouTube user says, "We are in a time when all commodities will lose their value. There will be a time when virtual currencies will be more valuable. If we can survive" (User 2, 2020). BTCTurk CEO Özgür Güneri also stated that the rise in cryptocurrencies should be evaluated together with the pandemic period in the world and the current state of technology (BBC News Turkish, 2021). Likewise, as seen in Table 2, a significant increase is also noticeable in the number of views, likes, and comments.

Table 2: YouTube Cryptocurrency Content Channels Like and Comment Numbers in Turkey

Channel Name	Random video released in March 2019	Random video released in March 2020	Random video released in March 2021	Random video released in March 2022
Kripto Emre	393 Like 141 Comment	688 Like 437 Comment	5.8 B Like 4.247 Comment	1.4 B Like 1.703 Comment
Bitcoin Kraliçesi	85 Like 67 Comment	33 Likes 14 Comment	500 Like 108 Comment	No content was shared in March.
Kripto Teknik	125 Like 48 Comment	210 Like 55 Comment	1.1 B Like 291 Comment	675 Like 43 Comment
Alp Işık	234 Like 29 Comment	235 Like 57 Comment	442 Like 20 Comment	156 Like 13 Comment
Kripto Sözlük	233 Like 121 Comment	364 Like 89 Comment	7.3 B Like 322 Comment	1.9 B Like 50 Comment
Crypto Kemal*	1.1 B Like 125 Comment	1.2 B Like 112 Comment	6 B Like 784 Comment	853 Like 105 Yorum
Kripto Para Dünyası**	It could not be reached because the like and comment information is closed.			441 Like 143 Comment
Monte Kripto Kontu	40 Like 2 Comment	25 Like 22 Comment	1.6 B Like 452 Comment	492 Like 462 Yorum
Koinvizyon	82 Like 2 Comment	77 Like 6 Comment	1.4 B Like 42 Comment	726 Like 0 Comment
ICRYPEX**	60 Like 10 Comment	18 Like 1 Comment	2.3 B Like 273 Comment	1.3 Like 58 Comment

Source: Social Blade, 2022

Note: *The first video was published in December 2019. ** The first video was published in November 2019.

The panic shopping mentioned before (Hobbs, 2020, pp. 171-172) has left their place to a state of mind in which much more selective content is consumed. And the people needed individual protection, especially in economic matters, and gradual self-isolation with the pandemic. While our consumption habits have completely shifted to e-commerce and home services, our relationship with physical money has also been transformed. Another comment on YouTube also shows the perception and especially the rapid transformation that took place with the pandemic period: "I bought some more [referring to Bitcoin] last night. Later everything will go digital, and cash is gone. I think Bitcoin is an example or orientation to stabilize digital currency between states" (User 3, 2020).

As one of the consequences of the COVID-19 pandemic in Turkey, as in the rest of the world, it is observed that the trust of users in cryptocurrency as a digital asset has also increased, along with the transformation resulting from the increased use of technology due to the pandemic, as they became more familiar with the digital environment. The intense interest of users who want to increase their knowledge and experience in the cryptocurrency ecosystem on digital channels is also presented in Table 1 and Table 2. The interest of curious users who want to experience the cryptocurrency ecosystem has returned to the content producers as subscribers, views, likes, and comments. The amount of content created by producers has also increased considerably in this period, and a certain pattern of sharing content has attracted attention. It was found that this whole interaction model greatly accelerates the

transformation of perception towards the cryptocurrency ecosystem, which has already begun to be adopted, both at the individual and corporate investor levels.

Content analysis of Twitter on the cryptocurrency ecosystem

Twitter is a discussion channel for international news and agenda, which can be served to the public instantly and with a great speed of influence, distinguishing this platform from other social media content providers. The unique and independent structure of Twitter also directs users and content producers to act within the framework of more serious, corporate, and public discourses (Rogstad, 2016, p. 142). In this regard, it is seen that all digital currency content producers who want to comment instantly, vote, or share the movements in the markets prefer Twitter as another main channel, in addition to using YouTube as a source of information with videos. Cryptocurrency content producers share their knowledge and experience, especially instant tips and speculations, through this social media channel (Kraaijeveld and De Smedt, 2020, pp. 1-2).

Table 3: Twitter Cryptocurrency Accounts and Subscribers in Turkey

Account Name	Link	2019 March Followers	2020 March Followers	2021 March Followers	2022 March Followers
Kripto Emre	https://twitter.com/kriptoemre	14.341	19.756	111.554	332.120
Crypto Kemal	https://twitter.com/CryptoKemal	34.525	40.916	161.918	605.204
Bitcoin Kraliçesi	https://twitter.com/BitcoinKralice	832	1.357	13.873	43.491
Kripto Teknik	https://twitter.com/kripto_teknik	3.943	8.091	60.563	139.678
Alp Işık	https://twitter.com/AlppIsik	40.701	43.411	69.121	96.185
Kripto Levent	https://twitter.com/KriptoLevent	1.665	6.434	46.531	274.059
Bitcoin Sistemi	https://twitter.com/bitcoinsistemi	1.369	3.321	18.853	61.005
Uzmancoin	https://twitter.com/uzmancoin	33.095	37.052	110.959	262.664
Coin Dahisi	https://twitter.com/btcparadisee	74.961	66.553	104.665	190.944
Bitcoin Analiz	https://twitter.com/btcanaliz	15.670	16.221	47.976	65.997

Source: Social Blade, 2022

The increase in the number of followers of Twitter account owners, who post in Turkish about the cryptocurrency ecosystem, can be seen in Table 3. Thanks to the cryptocurrency and the account anonymity it provides, although it is impossible to reach data about investors, the increase in interaction on social media platforms is seen, especially in terms of the conditions transformed by the COVID-19 pandemic. In this context, a Twitter user said, "It's not investment advice, but the market is incredible. With bitcoin and thousands of other cryptocurrencies, the financial system seems to be entering a different climate. The pandemic has accelerated the process" (User 4, 2021). Apart from digital currency updates, it is seen that investors often share their personal opinions, feelings, and instant thoughts on the digital currency ecosystem on Twitter (Kraaijeveld and De Smedt, 2020, p. 2).

Market developments are very important to see that cryptocurrencies are expanding their usage areas in daily life and becoming widespread. The fact that these and similar developments can be easily seen on Twitter is important in terms of the nature of the study: "The cryptocurrency ecosystem, which has entered our lives quickly, especially during the pandemic process, is starting to serve as a tool to use in our ordinary lives, not only for trading in exchange" (User 5, 2021). Another Twitter user, who noticed that the altcoins became widespread and multiplied in the cryptocurrency ecosystem, said, "There has been a huge increase in Bitcoin, altcoins, and other types of digital currencies. Prepare yourself for a

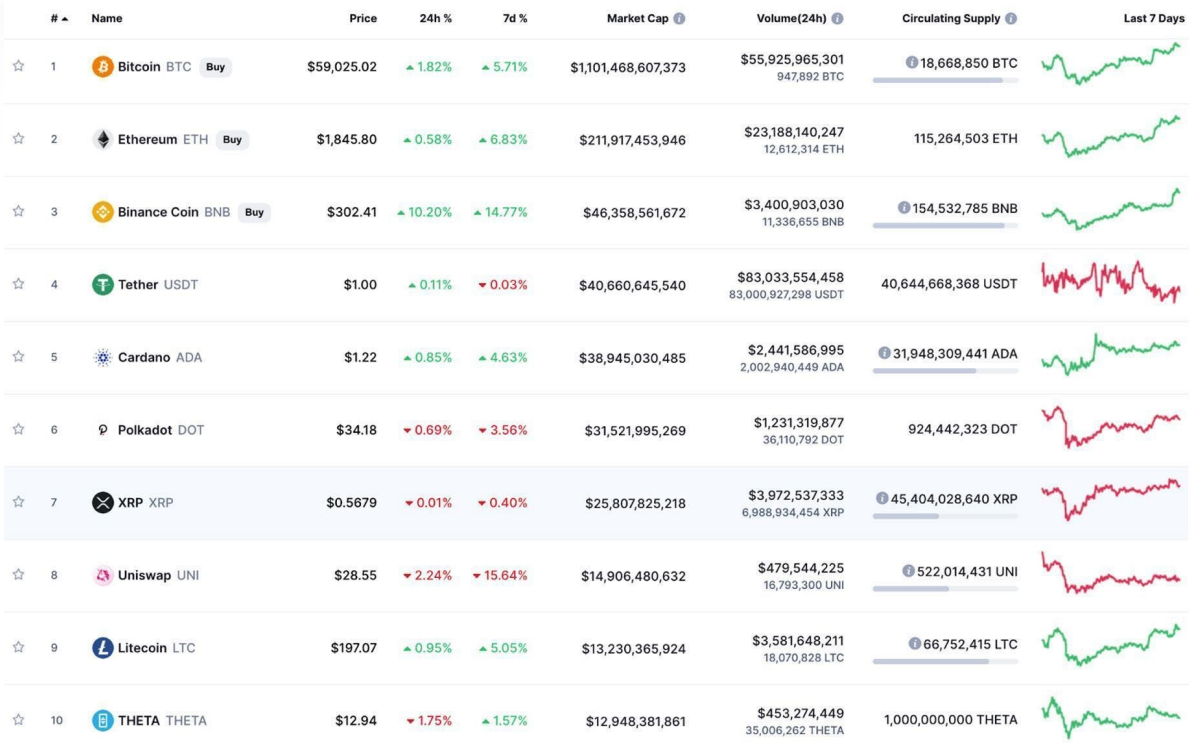
completely digital era after the pandemic" (User 6, 2020), emphasizing that the development of technology and cryptocurrencies will continue.

As citizens of the world, while leaving behind a period longer than two years during the COVID-19 pandemic, it is seen that data and information flow on digital highways with much heavier traffic than ever while our physical restrictions continue. Content production within the cryptocurrency ecosystem also benefits greatly from YouTube and Twitter. Along with the pandemic conditions, it is observed that the content producers on the cryptocurrency exchange have become the focus of new users. As found in the research, netnography-based participant observation data show that the heavy content traffic in the cryptocurrency ecosystem will continue to grow in the post-covid period.

The changing perception of cryptocurrency in the world

Feelings such as being happy and taking pleasure as a result of the consumed product or service, that is, meeting psychological and social needs, also play a very important role in the preference for the product or service. Individuals prefer products and services suitable to their lifestyles and profile. Thus, symbolic consumption occurs (Azizağaoğlu and Altunışık, 2012, p. 35). Symbolic consumption means choosing products or services based on their symbolic value (Baudrillard, 1970; Odabaşı, 2017). Although the symbol is an abstract concept, symbols are always present in human life and constantly interact (Kızıl, 2018, p. 1307). From this point of view, it is observed that the symbolic value of cryptocurrency both establishes a value-added structure for digital purchasing power and holds a vibrant ecosystem of expectations that meet the expectations of possession and pleasure and, in some cases, create excitement based on uncertainty.

Regarding the value of cryptocurrencies, according to Roubini, "Bitcoin is the mother of all bubbles and the biggest bubble in human history. Bitcoin's fundamental value is zero" (Ossinger, 2018). However, contrary to this situation, there have been different valuation methods for cryptocurrencies. Supply and demand, the difficulty of the algorithm behind the production of cryptocurrency as a digital asset, and public perception have been important factors in determining its value. According to Chang (2017), "The value of Bitcoin is a function of supply and demand. Blockchain is a great platform for future applications and drew attention to the technology behind cryptocurrencies". At first, some media and economic institutions could not see any future potential in cryptocurrency. According to the CEO of JPMorgan Chase, Jamie Dimon, "This is a fraud. If any JPMorgan trader started trading Bitcoin, I would fire them in a second. For two reasons, this is against our rules, and they're stupid. And both are dangerous." (Levitt and Son 2017). Just one year after this statement, he regretted saying that Bitcoin was a fraud and declared, "The blockchain is real. You can have things like cryptocurrency, yen, dollars, etc." (Surane, 2018). After all this process, it is known that today, JPMorgan offers cryptocurrency investment services to its customers (Yavuz, 2021). With the rapidly developing blockchain technology and the increase in the number of people using it, states and banks have started to look for ways to adapt to this new situation. Some states have started to issue their cryptocurrencies, and national and international banks started adapting to this process. Today, the cryptocurrency exchange has a market volume of approximately 1.8 trillion USD (CoinMarketCap, 2021).



#	Name	Price	24h %	7d %	Market Cap	Volume(24h)	Circulating Supply	Last 7 Days
1	Bitcoin BTC Buy	$59,025.02	1.82%	5.71%	$1,101,468,607,373	$55,925,965,301 947,892 BTC	18,668,850 BTC	
2	Ethereum ETH Buy	$1,845.80	0.58%	6.83%	$211,917,453,946	$23,188,140,247 12,612,314 ETH	115,264,503 ETH	
3	Binance Coin BNB Buy	$302.41	10.20%	14.77%	$46,358,561,672	$3,400,903,030 11,336,655 BNB	154,532,785 BNB	
4	Tether USDT	$1.00	0.11%	0.03%	$40,660,645,540	$83,033,554,458 83,000,927,298 USDT	40,644,668,368 USDT	
5	Cardano ADA	$1.22	0.85%	4.63%	$38,945,030,485	$2,441,586,995 2,002,940,449 ADA	31,948,309,441 ADA	
6	Polkadot DOT	$34.18	0.69%	3.56%	$31,521,995,269	$1,231,319,877 36,110,792 DOT	924,442,323 DOT	
7	XRP XRP	$0.5679	0.01%	0.40%	$25,807,825,218	$3,972,537,333 6,988,934,454 XRP	45,404,028,640 XRP	
8	Uniswap UNI	$28.55	2.24%	15.64%	$14,906,480,632	$479,544,225 16,793,300 UNI	522,014,431 UNI	
9	Litecoin LTC	$197.07	0.95%	5.05%	$13,230,365,924	$3,581,648,211 18,070,828 LTC	66,752,415 LTC	
10	THETA THETA	$12.94	1.75%	1.57%	$12,948,381,861	$453,274,449 35,006,262 THETA	1,000,000,000 THETA	

Figure 4: Cryptocurrency Prices, Charts and Market Capitalizations, 2021

Source: Coinmarketcap, 2021

Transforming economy: Small to big scale businesses

Businesses state that new social conditions brought by the COVID-19 pandemic impacted accepting payments with Bitcoin. Bitcoin, which is actively used in shopping, especially in the United States, provides shopping opportunities through world-renowned brands such as PlayStation Network, Microsoft, Dominos, and Burger King (Chapkanovska, 2019). Apart from the global events, the statements of popular figures with a high impact on the investors of cryptocurrencies are also noteworthy. In a solitary way, just the autonomous vehicle company Tesla's owner Elon Musk influences the cryptocurrency agenda with his tweets. According to a survey conducted in the United States, 37% of respondents state that they invest by examining Musk's cryptocurrency tweets (Varshney, 2021). Also, Tesla became one of the companies that made it possible to shop with Bitcoin, and Musk publicly announced on his Twitter account on March 24, 2021, that Tesla can now be purchased with Bitcoin (Shead, 2021).

It attracts not only large institutional investors but also individual small investors: A female entrepreneur with a pancake shop in Turkey's Kahramanmaraş province accepts payments with Bitcoin (Sarı, 2021). Another business owner, who owns a meatball shop in Adana, started to accept payments with digital money and stated that other shopkeepers around were also interested in receiving payments with digital money (Yavuz, 2021).

Figure 5: You Can Now Buy a Tesla with Bitcoin

Source: Twitter, 2021

However, after the developments, Musk declared that cancelling the purchase of Tesla due to Bitcoin mining is not a clean way for nature because of how electrical production is. But Musk released the public that made it possible to buy Tesla with the crypto money called Dogecoin (Dhaliwal, 2022).

Although Elon Musk's attitude towards Bitcoin and social media assets, which just purchased Twitter for 44 billion dollars in April 2022, his contradictory statements published one after another during the study period remain unclear (Sherman and Thomas, 2022). Nevertheless, the fact that a big company like Tesla took its place in history as the first to announce that Bitcoin will be accepted for payment constitutes an example of the main approach of the study. Furthermore, the integration of digital money in Visa payment systems, and similar statements of brands that have been shared with the public recently about adapting to the digital currency ecosystem, especially for the post-covid period, can also be interpreted as efforts to adopt the use of digital currency (Godbole, 2021; Shead, 2021).

Conclusion

While cryptocurrencies are also going through these difficult and slow processes, they have been rapidly accepted and circulated by almost all kinds of individual and institutional investors, governments, various authorities, and economies, gaining great momentum with the new conditions created by the COVID-19 pandemic. The necessities brought by the pandemic have led the digital currency ecosystem to experience its best phase in recognition and growth and facilitated the increase in acceptance and trust towards digital money to a high level. It was observed that the interest in the cryptocurrency exchange has shifted from individual investors and actors to very large public organizations and investments at the institutional level.

Today, any statement on Bitcoin or altcoins creates a large-scale speculative effect that is shared with the public. Moreover, it provides effects that cause investors to act voraciously. Thanks to this pioneering role of Bitcoin, it is thought that blockchain technology will provide technological innovation and increase acceleration in many areas besides the cryptocurrency ecosystem. These specialities over the high technological innovations of Cryptocurrencies, which have gained a foothold from small-scale purchases to large-scale purchases, are likely to cause changes in consumption and consumer perception. With these changes, further studies would have new research fields on interactions and engagements between, especially cryptocurrencies with marketing and advertising related with retails and products and services approach. Also, in addition to being able to spend a virtual currency in real life, the fact that digital products and worlds find a place in the equation and cause a change in social life habits paves the way for the discussion of the concept of digital consumption.

Also, new technological opportunities provided by blockchain technology, such as end-to-end encryption, anonymity, records kept with simultaneous ledgers, and many similar features, can be restructured in a way to provide infrastructure in various fields, including security, military industry, banking, health, art, and education. This new field of possibilities, in which blockchain technology branches, potentially hosts different perspectives for further studies as NFTs in the market with the Benjaminian question of unique artwork and new big Metaverse focal point as a decentralized new centre of interaction and attention.

In today's information civilization, where the most valuable exchange object is data itself, a pandemic again shows all humanity its place in the world, its temporariness, and the points where its physical possibilities and resources are blocked. While the world is rapidly moving towards a completely new digital order and a virtual environment with all these developments, it is seen that it is no longer possible to reject all these phenomena.

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