Cryptocurrency and its Psychological Impact on Human Behaviour

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Abstract

Purpose- Investment in extremely volatile digital assets based mostly on blockchain technology is what defines cryptocurrency trading, a phenomenon that is increasing quickly. In this paper, author review the cryptocurrency characteristics and its impact on psychological wellbeing of human beings' behaviour.

Method- The research examines the psychological processes that we suggest are unique danger factors for excessive crypto trading, such as: illusion of control, preoccupation, social learning, social reinforcement, fear of miss out and a form of gambling. The study is primary and descriptive in nature. The sample size of the study was 150 investors residing in Delhi/NCR. The responses from the respondents obtained from structured questionnaire.

Findings- In order to keep people safe while letting them profit from advances in blockchain technology and crypto-currency, the study calls for greater in-depth study of the mental impacts of frequent trading, individual variations, and the nature of decision-making.

Originality- While day trading and online sports betting have certain parallels, there are also key distinctions that need attention. Trading is available around the clock, the market is really worldwide, and factors outside the financial statements have a significant impact on the direction of prices.

 Social implications-When this new activity grows and attracts a larger proportion of retail or community investors, the article explores various protective and instructional techniques that may be employed to shield novice investors from potential damage.

**Keywords:** behaviour, cryptocurrency, human beings, psychological, well-being

Introduction

One of the fastest expanding industries seems to be cryptocurrency trading. According to monthly surveys done by major exchanges, tens of thousands of new users join exchange systems(Anjum, Sporny, & Sill, 2017). "It is believed that there are currently more than 106 million crypto buyers and sellers throughout the world". The rate of expansion is increasing so quickly that projections made only three months ago are already grossly inadequate. The expansion of the cryptocurrency market is roughly proportional to the increase in participation from retail investors (the general public)(Beninger & Ibara, 2016). "In February 2021, total market capitalization (number of coins times current price) reached $1.75 trillion, up from $550 billion in December 2020 and $275 billion in June 2022(Chukwu & Garg, 2020)". Bitcoin (BTC), the dominant currency, rose from a low of $9,500 in June 2020 to a high of $58,000 in February 2022, a price gain of over 20,000%.

Ethereum (ETH) and several other "altcoins" also saw exponential price increases (coins other than Bitcoin)(Brunese, Mercaldo, Reginelli, & Santone, 2019). Some media commentators have questioned whether or not the general public is aware of the dangers or downsides that may be connected with this behaviour in light of the recent rise in the value of cryptocurrencies, rising investor interest, and widespread media exposure(Tariq, Qamar, Asim, & Khan, 2020). "This is especially true when the media tends to concentrate on the minority of early investors who made money owing to historical causes (such as purchasing Bitcoin in 2013) or holding coins long before the commencement of recurrent bull cycles. Digital 'coins' or assets based on block-chain technology are referred to as cryptocurrency(Al-Janabi, Al-Shourbaji, Shojafar, & Shamshirband, 2017)".

Blockchains are a kind of distributed ledger in which all of the nodes are interconnected via a peer-to-peer network(Singh & Madaan, 2022). Every node in the network is responsible for checking the legitimacy of all transactions. The currencies themselves are based on blocks, which are released in an ICO, "mined," or won via other means (for example, by participation in a game or the completion of a transaction)(Ismail & Materwala, 2020). Proof-of-work systems, in which cryptographic algorithms create large random quantities of hashes that must be solved using computational power, are the most common method by which cryptocurrencies are mined. "Everyone who helps with this project (or mines the blocks) gets a cut of the block reward (e.g., part of a Bitcoin)". Proof-of-stake techniques, in which participants in the system generate coins by adding value to the network, are also used in this context(Kotz, Gunter, Kumar, & Weiner, 2016). Coins are held in private wallets and are identified by "keys" that may be used to buy and sell on exchanges. In tokenized economies, they are increasingly accepted as payment for a wide variety of goods and services, from video games and gambling to the production of work (see, for example, Anytask and Electroneum) and the security of contracts ("smart contracts; Chainlink) and the coordination of supply chains (VeChain) (Reserve Rights or BTC"). The worldwide statistical status of Cryptocurrency is mentioned in figure 1.

Figure 1: Percentage of countries own Cryptocurrency
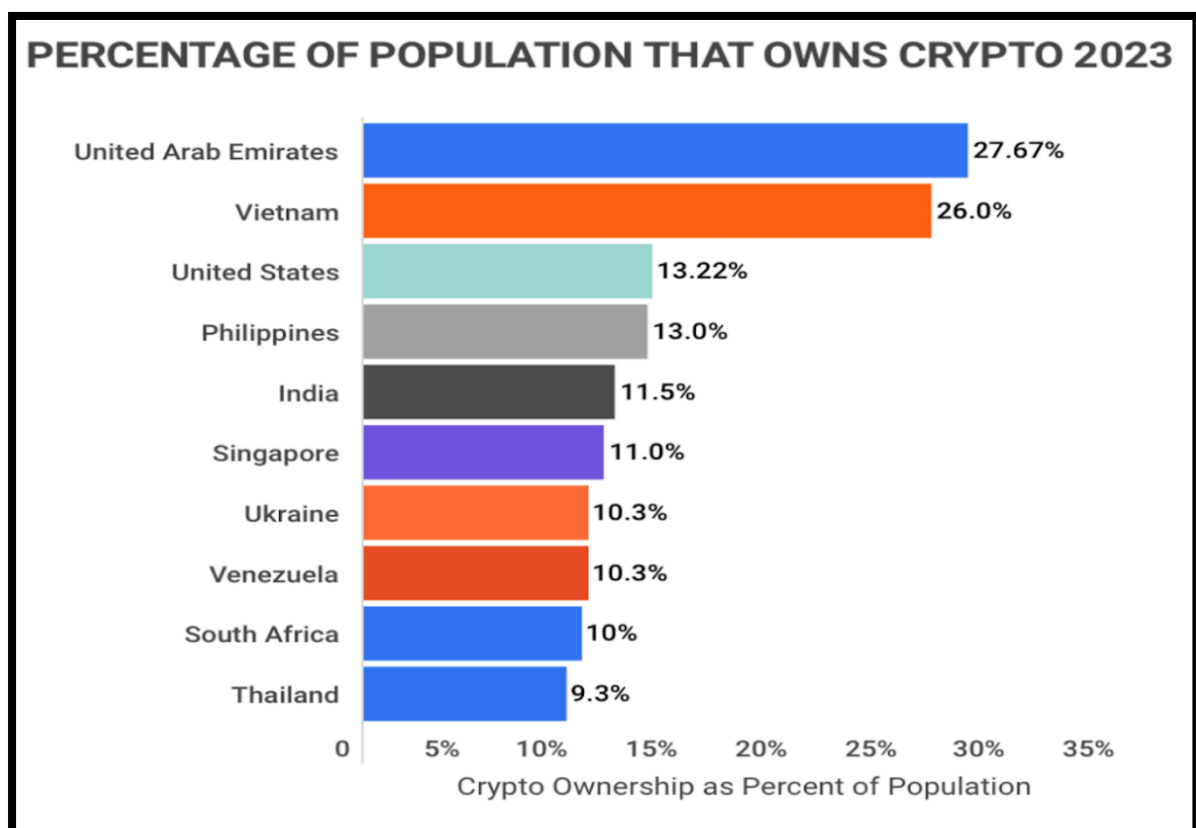
Trading cryptocurrencies is quite similar to today's stock market. Trading is highly automated, with buy and sell orders placed by computerised trading systems, and it draws both experienced and inexperienced investors, as well as both big institutional investors and small individual investors. However, there are a few key distinctions. First, trading may take place anytime, day or night, seven days a week(Kshetri, 2017). Second, it's tougher to put a price on crypto currency. This is more challenging with cryptocurrencies, which are analogous to stocks sold on venture markets, than it is with mining businesses that can disclose prospective revenues (based on, say, gold reserves or barrels of oil). The majority of such shares consist of little more than plans for future endeavours, with few actual assets or functioning business concepts. Profit and loss statements that may be used to predict dividend returns for crypto companies are typically lacking(Shi, He, Li, Kumar, & Khurram, 2020).

The only thing that may determine a coin's worth in the future is whether or not investors think it will gain popularity due to its reputation and profile, or because it has a real-world use (i.e., utility beyond trading). Potential growth can only be estimated by comparing basic ratios, such as the total number of coins in circulation to the current supply or the overall market capitalization. This is because currencies having a fixed quantity tend to increase in value as more are created, whereas coins with an endless supply (like the DOGE currency) depreciate as more are created(Al-Janabi et al., 2017). Similar to the price of a risky stock, the value of a remark on a website like Reddit may rise or fall dramatically just because of its popularity. While there is some evidence that Twitter activity correlates with increases in crypto stock prices, many of these other elements are unanticipated and, hence, have a high element of unpredictability or chance (much like an unexpected run by a horse).

Review of Literature

Some observers have drawn parallels between crypto trading and online gambling due to its similarities in many key aspects. Similar concerns have been voiced about day trading stocks, which also seems to include a large measure of luck or chance, variable profits, and the possibility of low returns for most investors. Day trading, as noted by Berentsen & Schär, (2018), is distinct from more traditional forms of long-term share investment in that the event frequency (time between buy and sell) is often much higher. It's possible that "technical analysis" rather than an investor's belief in the stock's long-term potential drives their buying and selling decisions(Zhang et al., 2020). Day traders, like those who wager on races and sports, often use "candles," patterns, ratios, and support levels in order to make trading decisions. These indications may be helpful in guiding price fluctuations, but they cannot predict unexpected shifts in the market and require making snap decisions (whether to buy or sell after the price has already changed). Most coin and day traders, it is believed, do not achieve superior returns to the market, and some even incur losses. Only around 7% of stock day traders are still in the industry after five years, so they don't exactly have a lot of staying power(Bottoni et al., 2020).

Ranjan, M. P., & Bajpai, D. A. (2015), according to the findings of a psychological study, humans place a greater amount of importance on the combined visual channels of face and body gesture than they do on any other channel when making judgments regarding the communicative and affective behavior of other humans. E-learning technologies of the second generation represent an excellent opportunity to narrow the digital divide and to ensure faster and higher development trends. The purpose of this research is to investigate the feasibility of incorporating gestures as a form of expression into other channels. A multimodal approach is necessary in order to determine the emotional state of the learner. It is necessary to have both face recognition and body gesture in order to achieve the desired affective state in the learner. The face has been identified using a technique called spot detection, and the body gestures have been recognized for the purpose of conducting an analysis of emotions. Individual classifiers are trained using individual modalities, such as body gesture and facial expression. At the level of decision making, it combines the information from the body gestures and facial expressions. The end result demonstrates that recognition accuracy is significantly higher than classification accuracy.

S, V. K. (2017), examined that the capabilities of the modern man's mind are increasingly important in the workplace, and this is a reflection of the world in which he lives. In order to discover why he acts the way he does, it is necessary for him to investigate the psychological aspects of his life. The field of psychology has

made significant advancements across the board in the realm of sports. It has allowed coaches to be more effective in their coaching, and it has helped athletes perform more competently. The psychological well-being of athletes as a whole, as well as their ability to adapt to their environments, is another area of focus. Physical activities, such as games and sports, are a good reflection of the psychological and physical interactions that occur. In conclusion, despite the fact that psychological testing has a checkered past, it is now widely accepted that it plays a significant role in the growth of talented athletes and performing artists, as well as that it enables others to improve their own performance. Chauhan, S. S., & Sharma, M. (2019), observed that virtual currencies and crypto currency is still relatively new. There are a lot of legal ramifications to think about when dealing with Bitcoin and crypto currency in general.Because of the rising interest in virtual currencies like bitcoin and ethereum, the total amount of money invested in these currencies continues to show significant growth. [C]ryptocurrencies like bitcoin and ethereum are gaining in popularity. This is because the trade and exchange of crypto currencies has become increasingly volatile in recent years. Cryptocurrencies will completely eliminate transaction fees and create a free-flowing trading system, which will lead to a revolution in the digital trade markets. It is an incredible country that just recently went through the process of demonetization and has more than a billion people in it. The purpose of this study is to gain an understanding of the potential of cryptocurrencies in India in the future.

According to the authors, those who find enjoyment in gambling are likely to be drawn to crypto-trading, as are members of comparable demographic groupings. Increased impulsivity and a need for unique experiences are two examples. In light of these new discoveries and the aforementioned structural traits, serious concerns have been raised regarding the possible dangers of crypto-trading(Xu et al., 2021).

Similar to day trading and sports betting, crypto trading does not depend only on luck. Competence and planning might affect results. "For instance, it would be unwise to wager on Sheffield United to win the 2021-22 English Premier League or to invest in a cheap altcoin after a 30 percent daily spike in price during a period of flat trading in the cryptocurrency market(Gatteschi, Lamberti, Demartini, Pranteda, & Santamaría, 2018)". Betting for Manchester City and investing in other cryptocurrencies after recent price drops, on the other hand, look to be wiser choices(Momtaz, 2020). However, there are several possibilities for individuals to make inflated predictions about the impact of their own knowledge and ability on outcomes and to underestimate the weight that luck and chance are likely to have in these endeavours(Delahaye, 2016). One of the hallmarks of gambling is the illusion of control, which may be described as an exaggeration of one's belief in his or her own power to influence an outcome. There is a widespread misconception that winning odds may be improved by using certain tactics. These misconceptions tend to be more pronounced in problem gamblers and may be seen in both games of chance and games of skill.

Research Gap:

Therefore, in this work, the study investigates how the unique structural features of this emerging activity might provide light on how the subject might need to be treated in psychological studies. The study focusses on the transferability of knowledge from other markets, such as online sports betting and day trading, to the cryptocurrency market. Questions like "may this lead to excessive behaviour and injury in certain individuals?" and "what specific structural traits are likely to be implicated" are at the centre of this investigation. Author thinks the following psychological concepts to be fundamental to comprehending the addictive potential of this new behaviour, and the study explain them below. Finally, the study addresses several possible protective variables that could reduce the impact of the key risk factors.

Objectives of the study

- To recognize factors of cryptocurrency and its impact on the psychological wellbeing of human behaviour.
- To quantitatively investigate the factors of cryptocurrency and its impact on the psychological wellbeing of human behaviour.

Hypothesis of the study

H1: There is significant relationship among illusion of control and psychological wellbeing of human behaviour.

H2: There is significant relationship among social learning and psychological wellbeing of human behaviour.

H3: There is significant relationship among social reinforcement and psychological wellbeing of human behaviour.

H4: There is significant relationship among A form of gambling and psychological wellbeing of human behaviour.

H5: There is significant relationship among fear of miss out and psychological wellbeing of human behaviour.

H6: There is significant relationship among preoccupation and psychological wellbeing of human behaviour.

Research Methodology

The present research is based on the impact of cryptocurrency on the psychological behaviour of human beings. The study is primary and descriptive in nature. The sample size of the study was 150 investors residing in Delhi/NCR. The responses from the respondents obtained from structured questionnaire. The variables understudy is illusion of control, preoccupation, social learning, social reinforcement, fear of miss out and a form of gambling.

Result and discussion

Table 1: Demographic Analysis

Demographic Analysis		Frequency	Percent
Gender	Male	123	82
	Female	27	18
Age	Less than 18	23	15.33
	18-25	26	17.33
	25-30	27	18
	30-35	38	25.33
	35 and above	36	24
Marital Status	Married	124	82.67
	Unmarried	26	17.33
Education Level	Matriculation	12	8
	Intermediate	17	11.33
	Graduation	47	31.33

	Post-Graduation	50	33.33
	Others	24	16
	Less than Rs. 15000	12	8
	Rs. 15,000- Rs. 20,000	43	28.67
	Rs. 20,000- Rs. 25,000	42	28
Income Level	Rs. 25,000 and above	53	35.33

The analysis of demographic statistics was presented in Table 1, which stated that the majority of respondents were male, had an age range of 30-35 years, had a married marital status, had a post-graduate qualification, and earned more than 25,000 Indian Rupees annually.

Table 2: Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.812	6

Table 2, analysed the reliability statistics of the study and stated that the estimated value of Cronbach's Alpha is .812 (N=6). Therefore, internal consistency is present among the variable and further statistical tests can be performed.

Table 3: Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
The illusion of control	150	1	5	1.56	.973
A form of gambling	150	1	3	1.79	.422
Social learning	150	1	5	2.85	.972
Social reinforcement	150	1	5	1.12	.517
Preoccupation	150	1	3	2.39	.723
Fear of missing out	150	1	2	1.87	.341
Valid N (listwise)	150				

Table 3, analysed the descriptive statistics of the study documented that majority of investors think that social learning (Mean= 2.85 and S.Deviation= .972) is the most influencing factor in cryptocurrency impacting the

psychological behaviour of human beings followed by Preoccupation (Mean= 2.39 and S.Deviation= .723). Social reinforcement (Mean=1.12 and S.Deviation=.517) found to be the least impacting factor in the study.

Table 4: One-Sample Statistics

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
The illusion of control	150	1.56	.973	.108
A form of gambling	150	1.79	.422	.116
Social learning	150	2.85	.972	.106
Social reinforcement	150	1.12	.517	.125
Preoccupation	150	2.39	.723	.120
Fear of missing out	150	1.87	.341	.113

Table 4, analysed the one sample statistics of the study documented that majority of investors think that social learning (Mean= 2.85 and S.Deviation= .972 and standard error= .106) is the most influencing factor in cryptocurrency impacting the psychological behaviour of human beings followed by Preoccupation (Mean= 2.39 and S.Deviation= .723 and standard error= .120). Social reinforcement (Mean=1.12 and S.Deviation=.517 and standard error= .125) found to be the least impacting factor in the study.

Table 5: One-Sample Test

One-Sample Test						
	Test Value = 0					
					95% Confidence Interval of the Difference	
	T	Df	Sig. (2-tailed)	Mean Difference	Lower	Upper
The illusion of control	30.021	149	.000	3.680	3.47	3.89
A form of gambling	22.972	149	.000	2.660	2.43	2.89
Social learning	33.947	149	.000	3.440	3.23	3.65
Social reinforcement	19.000	149	.000	3.633	3.39	3.88
Preoccupation	32.335	149	.000	3.593	3.36	3.83

Fear of missing out	32.788	149	.000	3.713	3.49	3.94

Table 5, analysed the one sample t test of the study documented that majority of investors think that social learning (t=33.947) is the most influencing factor in cryptocurrency impacting the psychological behaviour of human beings followed by Preoccupation (t=32.335). Social reinforcement (t=19.000) found to be the least impacting factor in the study.

Table 6: ANOVA

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
The illusion of control	Between Groups	.000	4	.000	3.879	.001
	Within Groups	.000	145	.000		
	Total	.000	149			
A form of gambling	Between Groups	11.211	4	2.803	4.899	.001
	Within Groups	82.949	145	.572		
	Total	94.160	149			
Social learning	Between Groups	87.973	4	21.993	5.103	.000
	Within Groups	.000	145	.000		
	Total	87.973	149			
Social Reinforcement	Between Groups	.766	4	.192	.358	.838
	Within Groups	77.527	145	.535		
	Total	78.293	149			
Preoccupation	Between Groups	17.531	4	4.383	7.183	.000
	Within Groups	88.469	145	.610		
	Total	106.000	149			
Fear of missing out	Between Groups	1.339	4	.335	1.348	.255
	Within Groups	35.995	145	.248		
	Total	37.333	149			

Table 6 analysed the ANOVA analysis and documented that all the variables under study impacting the psychological behaviour of human beings besides variables, namely, social reinforcement and fear of missing out as in all other cases the significance value is less than .005.

Conclusion

Trading in cryptocurrencies is expanding fast and is anticipated to gain popularity among the general public in the coming years. For these two reasons, author thinks the issue is crucial to the study of behavioural addiction. The first is that it has similarities with other forms of high-risk behaviour, such as gambling and excessive use of social media. What makes this kind of speculation stand out from others is its accessibility at all hours of the day and night, its length, the extraordinary volatility of its results, and the weight that sentiment and social influence have on it. For novice investors whose participation in the market has been heavily affected by media coverage or "fear of missing out" attitudes, this might make the market more volatile. Second, several well-established aspects of social and cognitive psychology may be tested in the context of crypto trading. In light of the recent influx of novice investors into the cryptocurrency market, it is possible to profile the unique dangers of crypto trading in comparison to other comparable activities such as day trading and online sports betting. It is expected that debates about consumer safeguards and possible actions for regulation of trading platforms and other activities involving cryptocurrency will be influenced by research initiatives investigating these aspects.

References

[1] Al-Janabi, S., Al-Shourbaji, I., Shojafar, M., & Shamshirband, S. (2017). Survey of main challenges (security and privacy) in wireless body area networks for healthcare applications. *Egyptian Informatics Journal*, *18*(2), 113–122. https://doi.org/10.1016/j.eij.2016.11.001

[2] Anjum, A., Sporny, M., & Sill, A. (2017). Cryptocurrency Standards for Compliance and Trust. *IEEE Cloud Computing*, *4*(4), 84–90. https://doi.org/10.1109/MCC.2017.3791019

[3] Beninger, P., & Ibara, M. A. (2016). Pharmacovigilance and Biomedical Informatics: A Model for Future Development. *Clinical Therapeutics*, *38*(12), 2514–2525. https://doi.org/10.1016/j.clinthera.2016.11.006

[4] Berentsen, A., & Schär, F. (2018). A short introduction to the world of cryptocurrencies. *Federal Reserve Bank of St. Louis Review*, *100*(1), 1–16. https://doi.org/10.20955/r.2018.1-16

[5] Bottoni, P., Gessa, N., Massa, G., Pareschi, R., Selim, H., & Arcuri, E. (2020). Intelligent Smart Contracts for Innovative Supply Chain Management. *Frontiers in Blockchain*, *3*(November), 1–19. https://doi.org/10.3389/fbloc.2020.535787

[6] Brunese, L., Mercaldo, F., Reginelli, A., & Santone, A. (2019). A Cryptocurrency based proposal for protecting healthcare systems through formal methods. *Procedia Computer Science*, *159*, 1787–1794. https://doi.org/10.1016/j.procs.2019.09.350

[7] Chauhan, S. S., & Sharma, M. (2019). Perspectives and Challenges for Bitcoin and Cryptocurrencies (1st ed., pp. 1-9). Kaav Publications. https://www.kaavpublications.org/cpabstracts/perspectives-and-challenges-for-bitcoin-and-cryptocurrencies

[8] Chukwu, E., & Garg, L. (2020). A systematic review of Cryptocurrency in healthcare: Frameworks, prototypes, and implementations. *IEEE Access*, *8*, 21196–21214. https://doi.org/10.1109/ACCESS.2020.2969881

[9] Delahaye, J.-P. (2016). Cryptocurrencies and Blockchains. *Inference: International Review of Science*, *2*(4). https://doi.org/10.37282/991819.16.38

[10] Gatteschi, V., Lamberti, F., Demartini, C., Pranteda, C., & Santamaría, V. (2018). Cryptocurrency and smart contracts for insurance: Is the technology mature enough? *Future Internet*, *10*(2), 8–13. https://doi.org/10.3390/fi10020020

[11] Ismail, L., & Materwala, H. (2020). Cryptocurrency paradigm for healthcare: Performance evaluation. *Symmetry*, *12*(8). https://doi.org/10.3390/SYM12081200

[12] Kotz, D., Gunter, C. A., Kumar, S., & Weiner, J. P. (2016). Cover Feature Security Threats Health It Privacy and Security Challenges. *Computer*, 22–30. Retrieved from http://seclab.illinois.edu/wp-content/uploads/2016/07/kotz2016privacy.pdf

[13] Kshetri, N. (2017). Cryptocurrency roles in strengthening cybersecurity and protecting privacy. *Telecommunications Policy*, *41*(10), 1027–1038. https://doi.org/10.1016/j.telpol.2017.09.003

[14] Momtaz, P. P. (2020). Initial coin offerings. *PLoS ONE*, *15*(5), 1–30. https://doi.org/10.1371/journal.pone.0233018

[15] Ranjan, M. P., & Bajpai, D. A. (2015). EMOTION DETECTION THROUGH FACE & BODY GESTURE FOR TECHNOLOGY ENABLED LEARNING. Kaav International Journal of Science, Engineering & Technology, 2(1), 50-65. https://www.kaavpublications.org/abstracts/emotion-detection-through-face-body-gesture-for-technology-enabled-learning

[16] S, V. K. (2017). Psychological Assessment in Sports: Team Cohesion and Mental Toughness. Kaav International Journal of Arts, Humanities & Social Science, 4(2), 7-11. https://www.kaavpublications.org/abstracts/psychological-assessment-in-sports-team-cohesion-and-mental-toughness

[17] Shi, S., He, D., Li, L., Kumar, N., & Khurram, M. (2020). Applications of Cryptocurrency in ensuring the security and privacy of electronic health record systems: A survey Shuyun. *Computers & Security*, *1*(January), 1–20.

[18] Singh, A., & Madaan, G. (2022). Blockchain Technology in Electronic Healthcare Systems. In *Blockchain Technology in Corporate Governance: Transforming Business and Industries* (pp. 1–23). Scrivener Publishing LLC. https://doi.org/10.1002/9781119865247

[19] Tariq, N., Qamar, A., Asim, M., & Khan, F. A. (2020). Cryptocurrency and smart healthcare security: A survey. *Procedia Computer Science*, *175*(2019), 615–620. https://doi.org/10.1016/j.procs.2020.07.089

[20] Xu, Y., Chong, H. Y., & Chi, M. (2021). A Review of Smart Contracts Applications in Various Industries: A Procurement Perspective. *Advances in Civil Engineering*, *2021*. https://doi.org/10.1155/2021/5530755

[21] Zhang, L., Xie, Y., Zheng, Y., Xue, W., Zheng, X., & Xu, X. (2020). The challenges and countermeasures of Cryptocurrency in finance and economics. *Systems Research and Behavioral Science*, *37*(4), 691–698. https://doi.org/10.1002/sres.2710