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Evaluation and Survey of Security, Privacy Issues of Crypto currency Exchange Application

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ABSTRACT

Digital currencies only exist in digital form. They do not have a physical equivalent. Crypotcurrencies, Virtual currency, Central bank digital currency are the types of digitalcurrencies. Cryptocurrency is decentralized digital money that is based on blockchain technology and secured by cryptography. Blockchain technology is a technology that uses distributed database that is shared among the nodes of a computer network. Blockchain stores information electronically in digital format. In recent years, many businesses around the word integrating blockchain technology. In the present investigation, we have conducted the survey to examine users familiarity, reliance on cryptocurrency, users expectations about security and privacy of cryptocurrency, perception about use, view point of people on different aspect of cryptocurrency and cryptowallet. We have analysed and compared the users responses and expectations. It was observed that there are six commonly used applications for cryptocurrency exchange in india. Based on comparison and survey, It was found that the best crypto currency exchange application which satisfied the user expectations (Parameters selected for comparison) about user friendliness security and privacy of cryptocurrency exchange application.

Keywords: Block chain technology, crypto currency, digital money, security, vulnerabilities, Decentralization

I. INTRODUCTION

Crypto currency is a currency that exists digitally and uses cryptography technique to secure its transaction [1]. Crypto currency can be defined as any medium of exchange, apart from real world money, that can be used in many financial transactions whether they are virtual or real transactions. Crypto currencies represent valuable and intangible objects which can be used electronically or virtually in different applications and networks such as online social networks, online social games, virtual worlds and peer to peer networks [2].

Block chain-based digital currencies are built upon the concept of block chainCrypto currencies use block chain technology to record and secure every transaction [4]. Block chain word is the combination of two words that is "Block" and "chain". "Blocks" that hold sets of information they have certain storage capacities and, when filled, linked to the previous block, forming a chain like structure known as Block chain. Block chain is the fundamental technology underlying the emerging crypto currencies including Bit coin [5]. Block chain technology has become one of the most popular techniques that will change the world, mostly due to its several

features such as decentralization, immutability, and Peer-to-Peer (P2P) transactions. It provides an effective and a coherent solution to some real-world problem [6].

In block chain Header and body are the 2 parts of blocks. The block header with metadata such as merkle tree root, nonce, timestamp, and many more.Whereas, the block body consists of a set of transaction. A block header is a hash of many things determined by the BC, but most often consists of the previous block header hash, the merkle root of the current block, and the timestamp.by including previous block hash blocks are linked together [7].

A Crypto currency is a peer-to-peer digital exchange system. This process involves distributed verification of transactions without a central authority. In this process bit coin transactions are validated digitally on the bit coin network and added to the blockchin ledger. This verification process is called mining. Crypto currencies such as Bit coin, Ethereum, Litecoin, Ripple, Blackcoin , Dash, Decred, Dogecoin, Ark steem and Permacoin are the widely used, and with the greatest capital as well as transaction rates.

Frauds of crypto currencies:

1) Ponzi Schemes: Ponzi schemes only pay users with the funds invested by new users, and therefore implode as soon as new investors stop joining. As a result, most investors in Ponzi schemes just lose their money.
2) Malware: The alleged untraceability of crypto currencies has been extensively exploited by malware developers. There are two types of malware 2.1) Ransomware: After infecting the victim's device, this kind of malware encrypts the data on the device, and locks it until the user 2.2) Crypto loggers: This kind of malware tries to steal information about the victim's accounts on crypto servicespays a ransom.
3) Fake Cryptoservices: Fake exchange Fake exchange frauds deceive users by offering incredibly competitive market prices for purchasing crypto currencies.

II. METHODS AND MATERIAL

For this research study survey based methodology is used.

In May 2022, a pilot study was conducted. Research gives clear picture of active scenario of crypto currency about how many people are aware about crypto currency, how often they invest, legal perspective about crypto currency, also examined how many participants feel secure while investing in crypto currency, participants' opinion about security parameters related to crypto currency and crypto currency exchange applications.

Step 1: For the pilot study on cryptocurrencies, various questions were created in variousaspect of crypto currencies. For that purpose many research paper are helped for forming question on various aspect of Crypto currency like legal, security concern, privacy concern, technical view, future expectations.

Step 2: I distribute survey online using social media. For that I created Google form of 30 questions in three different parts first part 10 questions related to basic awareness about crypto currency was included in second part 10 questions related to technical and legal aspect of crypto currency was included and in third part 10 questions related to security and privacy of crypto currency was provided and various options are provided for record responses of from the people.

Step 3: Google from was circulated in the peoples from various background such as banking sector, teachers, who have interested in treading, Finance, commerce background, information technology sector. To examine the participant's opinion about security parameters related to crypto currency and crypto currency.
Step 4: data of 400 plus people was collected in particular time duration that is 8 days.
Step 5: after that sorting of collected responses was done. In 412 participants 25% people are not having the prior knowledge about crypto currency and 75% people have the knowledge about crypto currency.
Step 6: after that sorting participants who have prior knowledge about crypto currency was considered. And only their opinion is considered for further study.
Step 7: analysis of sorted data is performed, following findings are noted from sorted data.
Step 8: I analysed that many of the participants are in the age group of 21-24 years old and around 67% participants are male. Following are the finding from analysis of survey 1) many participants around 75% participants are aware about crypto currency but only 33% people are invested in crypto currency according to survey. 2) Most of the participants expect central authority, legal legislation to deals with crypto currency offences. 3) Most of the people wants multifactor authentication, multisignature security KYC verification, content backup of personal information, biometric security from particular application are found in survey. 4) According to their opinion bit coin are securecrypto currency than others and coin switch, coin dcx are secure application comparative to zebpay, Cryptoxpress.
Step 9: from that survey got clear idea about people expectation on crypto currency and cryptocurrency exchange application.
Step 10: On the basis of survey analysis some parameters are selected to find out which application is best for exchanging cryptocurrency in digital world.
Step 11: on the basis of selected parameters 6 cryptocurrency exchange application which was mostly downloaded in India are selected. And three different categories are made according to number of downloaders and which application satisfy maximum number of parameters was find out of three different category of number of downloaders are compared and find application which satisfy maximum number of parameters.

Data collection and data analysis:

In 412 participant's 25% people are not having the prior knowledge about cryptocurrency and 75% people have the knowledge about cryptocurrency.
Many of the participants are in the age group of 21-24 years oldand around 67% participants are male.

III. RESULTS AND DISCUSSION

The research objective was evaluating the most secure cryptocurrency application according to user expectations. For that survey is conducted on different aspect of cryptocurrency, according to that various parameters are formed. Selected 6 cryptocurrency applications are downloaded compared according to selected parameters.
Comparison of application was analysed and observed that coinDCX satisfy more parameters compare to other 5, after that wazirX satisfy less parameters than coinDCX but satisfy more parameters than other 4 application.

Zebpay satisfy less parameter than wazirX and coinDCX and satisfy more parameters than other three applications. Bitpay satisfy more parameters than Safepay and CryptoXpress and satisfy less parameters than coinDCX, WazirX, ZebPay, CryptoXpress satisfy less parameters compare to selected all other 4 applications.
According to the survey response Coinswitch is more secure and user friendly after coinswitch,CoinDCX is more user friendly and more secure after coinDCXwazirX is more secure and user friendly after wazirXzebpay is more secure and user friendly

IV. CONCLUSION

Cryptocurrency offer a new, easy, less time consuming method for buying selling exchanging money. A clear picture about cryptocurrency and their application use has been drawn from my conducted study. Pilot study has been conducted with sample of 412 people, but the result showed me an awareness about cryptocurrency, perception about use, viewpoint of people on different aspect of cryptocurrency and cryptowallet, trust of using, expectation regarding security and privacy issues.
According to comparative study of 6 selected application coin DCX satisfy more parameters, wazirX satisfy less parameters than coinDCX, Zebpay satisfy less parameter than wazirX and coinDCX, Bitpay satisfy less parameters than coinDCX, Zebpay, wazirX, safepay satisfy less parameters than 4 selected application, CryptoXpress satisfy less parameters than all the 5 selected applications. According to both survey and comparison of application coinDCX is more secure and user friendly cryptocurrency application.

V. REFERENCES

[1]. J. H. Lee, “Rise of Anonymous Crypto currencies: Brief Introduction,” IEEE Consum. Electron. Mag., vol. 8, no. 5, pp. 20–25, 2019, doi: 10.1109/MCE.2019.2923927.

[2]. S. Jani, “The Growth of Cryptocurrency in India: Its Challenges & Potential Impacts onLegislation Digital Fiat Currency: The integration of Distributed Ledger Technology (DLT)and Fiat Currencies View project,” no. April, 2018, doi: 10.13140/RG.2.2.14220.36486.

[3]. T. R. Sankar, “Cryptocurrencies – An assessment *,” no. March, pp. 9–17, 2022.

[4]. I. O. Adam and M. DzangAlhassan, “Bridging the global digital divide through digitalinclusion: the role of ICT access and ICT use,” Transform. Gov. People, Process Policy,vol. 15, no. 4, pp. 580–596, 2020, doi: 10.1108/TG-06-2020-0114.

[5]. Y. Yuan and F. Y. Wang, “Blockchain and Cryptocurrencies: Model, Techniques, andApplications,” IEEE Trans. Syst. Man, Cybern. Syst., vol. 48, no. 9, pp. 1421–1428, 2018,doi: 10.1109/TSMC.2018.2854904.

[6]. Y. Yuan and F. Y. Wang, “Blockchain: The state of the art and future trends,” ZidonghuaXuebao/ActaAutom. Sin., vol. 42, no. 4, pp. 481–494, 2016, doi:10.16383/j.aas.2016.c160158.

[7]. M. Fartitchou, K. El Makkaoui, N. Kannouf, and Z. El Allali, “Security on BlockchainTechnology,” 3rd Int. Conf. Adv. Commun. Technol. Networking, CommNet 2020, 2020,doi: 10.1109/CommNet49926.2020.9199622

[8]. R. Raju, M. Saivignesh, and K. Infant Arun Prasad, “A Study of Current CryptocurrencySystems,” 7th IEEE Int. Conf. Comput. Power, Energy, Inf. Commun. ICCPEIC 2018, pp.203–208, 2018, doi: 10.1109/ICCPEIC.2018.8525166.