

LEGAL & ETHICAL IMPLICATIONS IN CRYPTOCURRENCY

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Abstract- In this review, we analyzed reviewed scientific publications (2011–2018) that covers various methods which can help in highlighting of illegal activities of cryptocurrency trading. Our study involves various methods which cover most of the illegal activities being involve using cryptocurrency. This study also involves the various areas of illegal activities and categorizes them under legal and ethical issues. It represents the various applications used in various studies to shed some light on the scale and nature of the problem being currently faced using cryptocurrency. It will help other researchers to develop various regulations needed for cryptocurrencies. Our study also covers drug marketing, other illegal activities, illegal trading of weapons and terrorist funding which involve using cryptocurrency along with the various applications that can be used to track the illegal activities.

Key Words—Bitcoins, Money Laundering, Illegal Activities, decentralization, digital wallets, drug market.

INTRODUCTION

Cryptocurrency has now become a global topic known to most people. Cryptocurrencies can adapt to the challenges of both emerging digital economy and funding while engaging communities through crowdfunding and P2P tech platforms^[1]. In 2010, merchants like WordPress, Microsoft and Expedia began accepting bitcoins as their mode of payment, which led to recognition of bitcoins as a proper currency. As it gained popularity, the idea of encrypted and decentralized currencies emerged, and the first alternative cryptocurrency appeared.

While most of the cryptocurrency papers focus on bitcoins, there is no paper that describes various legal and ethical issues in cryptocurrency. This study attempts to provide a glimpse of the various issues of cryptocurrency and the various methods and techniques to use to mitigate these issues.

There is a gap in the regulatory mechanism of tracking users trading and purchasing cryptocurrency due to its anonymity. Many issues like tracing criminals, tax evaders and money launders still remain. Many researchers are developing applications to trace the defaulters and punish the criminals. Most of the researchers have touched a single aspect of the many issues associated with the cryptocurrency.

Cryptocurrency being used in a negative way, helping criminals to escape without trace by the regulatory authorities. We hope that our study will help in reducing the criminal activities going behind the trading of cryptocurrency and assist the regulators in tracking the criminals through shedding light on the dark side of cryptocurrencies.

LEGAL IMPLIMENTATION AND METHODS

1. DIGITAL WALLETS:

Digital Wallets contain the private keys of users and allow them to access the public key. They are secured and are anonymous in nature. Petya cyber-attack targeted the Cadbury chocolate factory in Tasmania demanding bitcoins for ransom money [2]. There are no legal regulations regarding managing and regulating cryptocurrency. Users want to keep their transactions confidential. They don't think that their right to privacy should be affected. In that scenario, gaining the confidence of the masses would be difficult.

To provide security digital wallets implements the concept of Hot Wallet and Cold Wallet. Hot wallets require that the private keys of the user on the other hand, stores private keys offline at any other place.

2. MONEY LAUNDERING:

Money laundering is consider to be one of the main problem as it is consider to be very hard to track money movement from one location to other. . Many loopholes still exist. Money Laundering is illegal regardless of how it is done. To track money laundering a proper authority should be developed where the users who are guilty should be punished.

3. ILLEGAL ACTIVITIES:

Users are combining cryptocurrencies with anonymity for dealing illegal drugs, weapons and other illegal activities. Many countries are being affected through the illegal activities. There is a need to track down the activities and punish the users. Some methods can be involve to control and almost stop illegal activities.

4. DRUG MARKET:

Cryptocurrency is offered for buying weapons. There is a huge trade related to buying drugs, weapons and other illegal things in market websites. It is important to analyze how network works along with associated mining process. There should be a manage organization or authority to track such activities

5. ANONYMITY:

Various ethical issues are caused due to anonymity. Around 100 countries were affected by the Wannacry ransom demanded in bitcoins. Similarly, the Petya cyberattack targeted the Cadbury chocolate factory in Tasmania. The criminals behind such attacks went unnoticed due to anonymity. Accounts cannot be frozen and nobody knows the real identity of the account holder due to anonymity. To prevent this, regulation nodes were implemented.

6. EVASION OF TAXES:

Many countries are suffering from tax evasion problem. Formal meetings are conducted to discuss taxation policy. Government with other officials are working to develop a proper method for the taxation of such currencies. Efforts are made to devise systems to detect indication of tax evasion and making authorities for controlling currency and payment system responsible for taxing transactions. For taxing cryptocurrency, a legal framework is developed in most of the countries. It is advised to cryptocurrency owners to keep proper records of their intentions, transactions and who is receiving payments otherwise, huge penalties would be levied in case of detection. Table 3 depicts the legal implications that involve evasion of taxes.

LEGAL IMPLICATIONS IN INVOLVING DIGITAL WALLETS

No	Author	Technology Used	Methods of Security	Challenges and Benefits
1	Liu, 2017 [3]	Bitcoin Wallet	Hot & Cold Wallets	Thefts and attacks can be mitigated and cannot be effaced out totally. An attempt to study attacks to secure bitcoins. It also suggests bitcoin security algorithms
2	Mehta, 2017 [1]	Bitcoin Wallet	Hot Wallets	Mitigating these risks can be done however, users using bitcoins for criminal activities can't be avoided It attempts to give longitudinal changes in Bitcoin Market, the stresses caused by them and users who use it for fraudulent purposes
3	Meiklejohn, 2013 [10]	Bitcoin Wallet	Hot Wallets	Provides a more insight related to cryptocurrencies and their effects. An attempt to study various cryptocurrencies and taking the most popular among them, namely bitcoins.
4	Shehhi, 2014 [11]	Bitcoin Wallet	Hot Wallets	Mitigating the threats involving cybercrime can be done however, it cannot be eliminated
5	Upadhyaya, 2016 [8]	Bitcoin Wallet	Hot Wallets	Threats can be mitigated and not completely avoided. An attempt to study dark web, ransomware using bitcoin wallet

6	Baravalle, 2016 [6]	Bitcoin Wallet	Hot & Cold Wallets	Mitigation of thefts and attacks can be done however, it cannot be effaced out totally. An attempt to study bitcoins for secure financial transactions.
7	Quamara, 2016 [7]	Bitcoin Core	Hot Wallets	Mitigating the threats involving bitcoin wallets can be done however, it cannot be eliminated. Security risk related to bitcoin wallets are discussed and among them the safest is bitcoin core
8	Kaushal, 2017 [9]	Bitcoin Wallet	Hot Wallets	Mitigating the threats involving bitcoin wallets can be done however, it cannot be eliminated. Investigating security flaws in bitcoins
9	Fraser, 2017 [4]	Bitcoin Wallet	Hot Wallets	There are many security issues related to bitcoins Review of bitcoins used by cybercriminals
10	Shanmugam, 2017 [5]	Bitcoin Wallet	Hot Wallets	Apart from developing strategies implementing and regulating bitcoin trading Swot analysis is conducted to evaluate bitcoins strengths and opportunities while mitigating its weaknesses and threats g is a major issue

DISCUSSION

The main contribution of our study is to focus on the areas of negative and illegitimate activities conducted online through digital currencies like bitcoins. There is a limited ability for policy makers to regulate cryptocurrency and have allowed criminals to take advantage of it to conduct unlawful activities. Our study focuses on areas of illegal activities to help the regulators and policy makers to make regulations and guidelines in controlling the unlawful activities conducted online.

Another contribution of our study is shedding lights on new applications that can be used to identify illicit activities and regulate cryptocurrency. tracking illegal activities and monitoring them through the applications mentioned in our study can deter the illegal activities being carried on.

The study does not discuss the effects of price fluctuations that can occur in cryptocurrencies although it highlights the legal and ethical implications which can affect the prices drastically. For instance, genuine users of cryptocurrency know that it is being used in illegal activities and this has some value in its trading prices online. A strict policy or a regulation by the government can affect prices to a large extent.

CONCLUSION

Many countries have banned bitcoins because governments have no control over the transactions being done using bitcoins. Our study highlights the various applications that can be used to regulate and control the cryptocurrency.

Our study also include preventing of drug marketing, other illegal activities like and more aspect which are currently prevalent in cryptocurrency including with the applications that can be used to track the illegal activities. Our study suggests that users of cryptocurrency can be traced based on their prior transactions. The study reveals that the legal and ethical issues related to cryptocurrency can be solved using various applications. It will help the regulators to curb the criminal activities, restrict the growth of dark web and catch the criminals behind it.

REFERENCES

[1] F. Tschorsch, and B. Scheuermann. "Bitcoin and beyond: a technical survey on decentralized digital currencies," *IEEE Commun. Surv. Tut.*, vol. 18, no. 3, pp. 2084-2123, Mar. 2016.

- [2] S. Nakamoto, "Bitcoin: a peer-to-peer electronic cash system," 2009. [Online]. Available: <http://www.bitcoin.org/bitcoin.pdf>
- [3] Y. Liu, X. Chen, L. Zhang, C. Tang and H. Kang, "An Intelligent Strategy to Gain Profit for Bitcoin Mining Pools", 2017 10th International Symposium on Computational Intelligence and Design (ISCID), 2017.
- [4] M. Hariya, Y. Wagle, A. Desai and S. Deshpande, "Buyer's protection in bitcoin," 2017 International conference of Electronics, Communication and Aerospace Technology (ICECA), Coimbatore, 2017, pp. 713-715.
- [5] N. Kshetri and J. Voas, "Do Crypto-Currencies Fuel Ransomware?", IT Professional, vol. 19, no. 5, pp. 11-15, 2017.
- [6] F. Maurer, T. Neudecker and M. Florian, "Anonymous CoinJoin Transactions with Arbitrary Values", 2017 IEEE Trustcom/BigDataSE/ICSS, 2017.
- [7] Q. Wang, X. Li and Y. Yu, "Anonymity for Bitcoin from Secure Escrow Address", IEEE Access, vol. 6, pp. 12336-12341, 2018.
- [8] K. Toyoda, T. Ohtsuki and P. Mathiopoulos, "Identification of High Yielding Investment Programs in Bitcoin via Transactions Pattern Analysis", GLOBECOM 2017 - 2017 IEEE Global Communications Conference, 2017.
- [9] L. Van Der Horst, K. Choo and N. Le-Khac, "Process Memory Investigation of the Bitcoin Clients Electrum and Bitcoin Core", IEEE Access, vol. 5, pp. 22385-22398, 2017.
- [10] Y. Wang and J. Gao, "A Regulation Scheme Based on the Ciphertext-Policy Hierarchical Attribute-Based Encryption in Bitcoin System", IEEE Access, pp. 1-1, 2018.
- [11] B. Tama, B. Kweka, Y. Park and K. Rhee, "A critical review of blockchain and its current applications", 2017 International Conference on Electrical Engineering and Computer Science (ICECOS), 2017.

