Investigating Factors behind Choosing a Cryptocurrency

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Abstract - **This paper aims to address two challenging questions: "What are the bases on which online users choose to use and/or mine their cryptocurrency?" and "Which factors strongly affect the coin's popularity and value?" We try to answer these two questions for eight chosen cryptocurrencies by conducting an online survey. Results obtained from the online survey indicate that more than half of the participants believe that the currency name and logo affect the choice of using and/or mining a cryptocurrency. Moreover, the majority of the participants stated the ease of mining, having strong, fun and large community along with anonymity, privacy, and the currency's value, popularity, potential and technology as advantages of the currencies they choose to use and/or mine. These results help in observing the people behavior and predicting how successful and promising a cryptocurrency might become in the future.**

Keywords - **Cryptocurrency, survey, human factors**

I. INTRODUCTION

One of the most important aspects of our world that has been greatly influenced by the internet is the global economy in which trading between people in different countries can be carried out online. Money has been taking many different forms overtime, starting from commodities to commodities-backed currency then to fiat currency and recently to the internet-based forms which are electronic money and virtual currencies [1]. The main difference between virtual currency and electronic money is that the latter is defined as a traditional currency unit (e.g. Euro, USD, AED) that is stored electronically to purchase online products while virtual currencies have their own currency units (e.g. Facebook Credits, BTC, LTC, DOGE) and can be used to either purchase only online products, or specific online game products or to purchase both online and offline products [1, 2].

"Cryptocurrency" is a new generation of virtual currencies that caught a lot of attention. It can be bought using real and other virtual currencies and also be sold for real and other currencies according to specific exchange rates. Those rates are specified by the currency owner and such currency can be used to purchase both virtual and real products and services (such as the Linden Dollars in the online game "Second Life"). Currently, there are approximately around 280 cryptocurrencies all over the internet such as Bitcoin, Litecoin, Dogecoin and Kittehcoin [3]. The value and popularity of such currency

vary over time based on how many users are using each coin. Few coins show promising values and have high popularity, while many others do not. Therefore, a challenging task is to find out the reason(s) behind the popularity of cryptocurrencies.

Since the use of cryptocurrency is increasing greatly over time, we aim to investigate the following research questions for now: "What are the bases on which people choose their cryptocurrency?", and "Which factors strongly affect the coin's popularity and value?" Moreover, we verify whether the following hypothesis holds: "The cryptocurrency name and logo affect the choice to use and/or mine". We are investigating these research questions by conducting an online survey which is answered by many users of each of the following cryptocurrencies: Bitcoin, Litecoin, Ripple, Peercoin, Dogecoin, Kittehcoin, Darkcoin, and Vertcoin. We chose this group of coins because it includes coins which have one or more of four major characteristics: popularity, being newly created, having fluctuated valued, and having copycats with different names and logos.

Unlike many previous works on cryptocurrencies [7-15], the main contribution of this paper is that we focus on the behavior and preferences of human when choosing a cryptocurrency to use and/or mine rather than their technological and technical aspects. The results obtained from this study will greatly help in predicting how successful a cryptocurrency can be and grant us a deeper understanding of human preferences when it comes to cryptocurrency.

The paper is organized as follows. In Section II we describe the survey methodologies used to collect the required data which is utilized to answer our research questions. We then observe and evaluate the results obtained from applying the research methodology in Section III. In Section IV, we provide more detailed analysis and insights of the results obtained. Finally, we conclude our work and discuss possible future work to be carried out in Section V.

II. METHODOLOGIES

In this paper we investigated the reasons behind the popularity of eight specific cryptocurrencies: Bitcoin, Litecoin, Ripple, Peercoin, Dogecoin, Kittehcoin, Darkcoin, and Vertcoin. In order to identify the factors on

which people base their judgment to choose a cryptocurrency to mine and/or use, we conducted an online survey using Google Drive. The survey has been posted in the official forum of each chosen coin asking the users to complete it. The survey has been available online for approximately one month, that is, from the 26th of March 2014 till the 1st of May 2014.

The participants of the survey were anticipated to be above 18 years old and to answer truthfully. Both of the prerequisites were ensured using a consent form which should be carefully read and accepted in order to participate in the survey. Moreover, after the survey deadline, filtering procedures were performed in order to exclude dubious answers. The online survey mainly consisted of 3 open-ended questions and 12 multiple-choice questions which include typical demographic questions (such as age, gender, occupation and highest educational degree) and cryptocurrency-related questions (such as how many crypto-currency does the participant mine and/or use and for what reason(s) it is used/mined, what does the participant like/dislike about the mined/used coin, does the participant believe that the coin's name and/or logo affect his/her choice to mine and/or use a cryptocurrency). The answers to these questions helped us observe and recognize the factors which play a role in making people choose a cryptocurrency by finding a link between the answers of both demographic and cryptocurrency-related questions.

In order to collect as many data as possible, the survey did not include any personal questions that might irritate the users or cause them any discomfort. After collecting enough data, we carried out a number of analyses in order to identify interesting results. Our survey helps in understanding people's behavior when choosing a cryptocurrency, which in turn may lead to the success of predicting the future of such coins if no outside factors (such as governments' regulations) interferes with how cryptocurrency systems work in the meantime.

III. RESULTS

There were 134 online users who participated in the online survey. In this section, we start by listing the results achieved from the multiple choice questions and then describe the results observed in the open-ended questions based on the most frequently observed key words.

Several characteristics of these participants have been observed after collecting the answers to the multiple choice questions. Around 26% of the participants are between the ages of 18 and 25, whereas 44% of the participants are between the ages of 26 and 35. In addition, 20% of the participants are between the ages of 36 and 45, while the remaining 10% are over 45 years old. As for when each of the participants started mining and/or using cryptocurrency, 1.5% started in 2009, 1.5% in 2010,

7.7% in 2011, 12.3% in 2012, 58.5% in 2013 and 18.5% in 2014.

Furthermore, we have collected the answers to the occupation of each participant and noticed that 40% of the participants are working as Professional, 37.4% as Self-Employed, and 22.6% as Student. Many other occupations are observed but none of them are significantly frequent. As for the participants' gender, we find that, surprisingly, 95.5% of the participants are Males, while only 4.5% are Females.

Regarding the mining process, 27.6% of the participants stated that they do not mine, but they use cryptocurrency. 23.1% of the participants mine one coin, 15.7% mine two coins, 9.7% mine three coins, and the rest mine more than three coins. Moreover, it has been observed that 77% of the participants mine and/or use Bitcoin, 47.4% of them mine and/or use Litecoin, 32.6% mine and/or use Dogecoin, 31.1% mine and/or use Darkcoin, 18.5% use Ripples, 17.8% mine and/or use Vertcoin, 12.6% mine and/or use Kittehcoin and 6.7% mine and/or use Peercoin.

Also, we have investigated the reasons behind mining cryptocurrency. Results indicated that 62.2% of the participants mine for speculation purposes, 48.9% mine for trading purposes, 46.7% mine for savings purposes, 37.8% mine for purchasing real products, while 20% mine for purchasing virtual products and 26.7% mine for selling their coins to other users.

In addition, we have explored the most frequently stated factors behind choosing a cryptocurrency to mine and/or use. It is observed that 56.3% of the participants choose cryptocurrency based on the currency value, 40% of the participants choose the currency based on its popularity, 27.4% choose the currency based on what they read in articles, advertisements, and the Internet. Moreover, 13.3% and 6.7% of the participants choose their cryptocurrency based on its name and logo respectively. Finally, 54.5% of the participants believe that the cryptocurrency name and logo play a key role in choosing a cryptocurrency to mine and/or use.

Regarding the answers observed in the open-ended questions, we extract the most frequently stated key words in the participants' responses for each question. For the first question, "*What do you like about the coin(s) you use and/or mine?*", most of the participants mentioned the ease of mining as one of the main reasons for liking their coin(s). Moreover, many participants mentioned that having a strong, fun, and large community makes it more possible for the currency to survive. Also, a lot of participants mentioned anonymity, privacy, the currency's value, popularity, potential and technology, especially Application-Specific Integrated Circuit (ASIC)-resistance, as advantages of the coin(s) they use and/or mine. For example, one of the participants stated: "*I like the*

availability and fungibility of Bitcoin, and the potential anonymity and innovations in Darkcoin. I also mine Namecoin to support that project and to maintain my own .bit domains. I also like the community of intelligent innovators that has formed around Darkcoin. I'm sure there are others elsewhere as well, but we seem to have a good mix of supporters who aren't afraid to challenge assumptions or processes within Darkcoin, but who can do so from a context of wanting to see it succeed." Another participant stated: "Real innovations: this is the exception. Only a very few coins really bring something new. These coins are Ripple, NXT and Ethereum (not yet launched) out of which Ripple is the most advanced and has the heaviest momentum. The most common reason to mine these coins is to build a long term position as the fundamentals of the coin are good, and mathematical expectation of gain in long term is very high."

As for the second question, "What do you hate/dislike/wish to change about these coins?", most participants wish for: real innovative coins and not just copycat coins, easier start to mining, less complexity of use, shorter block time for Bitcoin and wish that the supply of coins was proportional to the population and productivity. One of the participants' critical comments is: "Ripples: I hate the fact that people think you need to own XRP or Ripples to use the Ripple network. I want people to understand that that is not true. I hate the fact that Ripple tries to associate itself with Bitcoin and other coins. They have similarities, but Ripple is something completely different. Ripple is a place to exchange ANYTHING of value, not just one coin."

Finally, for the third and last open-ended question, "In your opinion, what attract people to specific cryptocurrencies?", most participants pointed out the following main reasons that make cryptocurrency attractive: Gaining more profit, having more security, following communities which support cryptocurrency, anonymity, cryptocurrency popularity and technology and acceptance, the hope of becoming rich with little effort, and speculation. While few of the participants stated that the coin name and logo play a key role when it comes to cryptocurrency attraction factors. Some of the participants' critical responses are: "If you don't understand cryptocurrency, then yes, you may consider name and logo. If you understand it well, then technology, community and acceptance will guide your choice. If you are trader you may consider all altcoins as risky investment. In this case only current value matters", "I think far too many people see opportunity for short term gains in 'pump and dump' schemes. But the majority of people see a great future in crypto currency, find it an exciting new frontier, and a minority are actually making use of the technology, mostly by using it to send money home without the exuberant costs banks and services such as Western Union charge. This helps the poorest among us, the guest worker who sends money home. This is cryptocurrency at its best", "Anonymous transactions, so privacy, plus security and speed", and "In general, anonymity and distancing from banking institutions. In particular, some have more stability and some have more real-world usability (like Bitcoin, and to some extent Dogecoin). Some are whimsical, like Doge and Kitteh and appeal to the mass dog & cat loving internet population. Each has a gimmick or feature that appeals to some group (though many are just silly named clones)".

IV. ANALYSIS AND DISCUSSIONS

The above results indicate that most of the participants are of the ages between 26 and 35, started using cryptocurrency in 2013, work as professionals, males, do not mine currencies but just use them. Bitcoin, Litecoin, Dogecoin and Darkcoin are the top four cryptocurrencies that are used and/or mined. Also, most the miner mine them for speculation purposes and choose the cryptocurrencies based on their value, popularity, information written on the Internet, articles and advertisements.

The reason behind having many participants who started using cryptocurrency in 2013 is most likely because Bitcoin has exceeded $1000 for the first time in 2013, 27th of November [4], which encouraged many people to mine and use it. Our results are also consistent with a previous observation that males are involved in cryptocurrency way more than females [5]. A possible explanation may be that, as indicated in [6], the fields of expertise required to understand cryptocurrency enough to both mine and use it are mainly dominated by men.

Since one of the main contributions of our research is to investigate the hypothesis of whether the cryptocurrency's name and logo influence choosing a cryptocurrency to mine and/or use, we study the relationships between what the participants think regarding the previously mentioned question and each of the participants' age, starting year to use cryptocurrency and the participants' occupation.

Table I presents the results of the relationship between the participants' beliefs and their ages. It is clearly indicated that young participants tend to believe that both the currency name and logo affect the choice of a currency. This observation is most likely due to the fact that young people do not fully understand and/or care about the technological and technical sides of cryptocurrency while caring more about the attractiveness (stylishness) of the currency's name and logo.

Table II presents the relationship between the participants' starting year to use cryptocurrency and their belief. It is obvious that more participants tend to believe that the coin's logo and name affect the cryptocurrency

choice especially for the late starters (i.e., those who stated in 2013 and 2014). This is mainly because many new currencies of different names and logos have been created since 2013.

Table III shows the relationship between the participants' highest educational degrees and their beliefs. It is clearly shown that college graduate participants greatly tend to believe the influence of currency logo and name on the currency choice. This is most likely because usually people of college graduate as their highest educational degree tend to be young and as we stated previously, young people care more about the stylishness of the names and the looks. The same trend can be observed for high school graduate participants as they also slightly tend to believe the effect of the currency name and logo.

Finally, Table IV presents the relationship between the participants' occupations and beliefs. After investigating the table, students clearly and greatly tend to believe that the coin name and logo affect choosing a coin to mine and/or use. This result is not that surprising especially after investigating the previous three tables as they all show that the majority of young people behave that way. On the other hand, a majority of self-employed participants tend to believe that there is no relationship between the name and logo of a coin and their choice to mine and/or use this coin.

From the above results, we have found that a majority of the participants believe that the currency name and logo play a key role in choosing a coin to use – especially among the young people. Such result alerts us of a potential hazard in which, recently, several coins are being named after specific countries and continents, such as Isracoin and Asiacoin. If the coin name and logo could affect the choice of coins to mine and/or use, some problems may raise when people who belong to these countries/continents start to use and/or mine these coins in an almost exclusive manner. Such an event would involve politics (such as government's control) in cryptocurrency which might endanger the distributed and regulation-free nature of them. It would be interesting to investigate whether such an event has a high probability of happening through studying the relationship of currencies under the name of countries and continents and the nationality of the people who use and/or mine them. The same statements previously mentioned applied to coins named after animals, sports, gaming consoles, hobbies, etc. (e.g., Kittehcoin, Fifa 14).

TABLE I
Participants' Age vs Belief

Age Range	"Do you think that the name and/or logo of cryptocurrencies affect mining and/or using them?"	
	Yes	No
18-25	25	10
26-35	32	27
36-45	13	14
46-54	1	7
55+	2	3

TABLE II
Participants' Starting Year vs Belief

Starting Year	"Do you think that the name and/or logo of cryptocurrencies affect mining and/or using them?"	
	Yes	No
2009	0	2
2010	1	1
2011	5	5
2012	7	9
2013	42	34
2014	17	7

TABLE III
Participants' Highest Educational Degree vs Belief

Degree	"Do you think that the name and/or logo of cryptocurrencies affect mining and/or using them?"	
	Yes	No
High School Graduate	15	11
College Graduate	35	26
Postgraduate/Professional	22	24

TABLE IV
Participants' Occupation vs Belief

Occupation	"Do you think that the name and/or logo of cryptocurrencies affect mining and/or using them?"	
	Yes	No
Not-employed	5	2
Self-employed	15	21
Student	18	8
Professional	24	22

V. CONCLUSION

In this project, we investigate several factors behind choosing a cryptocurrency to mine and/or use through conducting an online survey directed at people who are currently using and/or mining such currencies. The main contribution of this paper is that, unlike most of the previous works about the cryptocurrency, we focus on the users and their opinion regarding cryptocurrency rather than the technology and technical aspects of them. After analyzing the results obtained from the survey, we have made many observations such as the majority of the participants are men (95.5%) who are of the ages between 26 and 35, started using and/or mining cryptocurrency in 2013 and work as professionals. As for the factors behind choosing a currency to mine and/or use, the majority of participants stated the ease of mining, having strong and fun and large community, and finally, anonymity, privacy, the currency value, popularity and potential and technology as advantages of the currencies they choose to use and/or mine. Moreover, most participants wish for the followings in order to mine and/or use cryptocurrencies: really innovative and not just copycat coins, easier to start mining, less complexity of use, and being proportional to the population and productivity supply of coins. Finally, we have found that more than half of the participants believe that the currency name and logo play a key role in choosing a coin to use. This result holds true especially among the young people who participated in our online survey.

Since this is the first time for us to investigate cryptocurrency, some of the survey questions were too specific and limited to currency mining. It will be worthy to carry out a revised survey in the future by generalizing these questions and by adding more questionnaires to get a deeper understanding of the world of cryptocurrency. Another worthy work to be conducted in the future is to investigate the people's opinion regarding cryptocurrency in the Middle East region as this region still lacks significant involvement in cryptocurrency as stated by Ola Doudin, Co-founder of Bitcoin Jordan Group [15].

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