**User Generated Content Analysis**

**Assignment 2**

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1. Use the Python script tweetstream\_location.py (on Canvas) to obtain a total of about 10k tweets on cryptocurrencies such as Bitcoin and Ethereum. You should use keywords like Bitcoin, Ethereum, Cryptocurrency, and Blockchain. Note: The script is being supplied to you for your convenience. You can use any other script to get the job done.

Please find the attached file of tweets used for doing the analysis about Bitcoin and Ethereum cryptocurrencies **without location wise categorization**.



1. For each cryptocurrency, find **THREE** key issues mentioned by the public in the tweets (provide frequencies of mention).

Issues for Bitcoin 🡪

1. Anonymity
2. Security
3. China

Issues with Ethereum 🡪

1. Value
2. Technology
3. Security

Frequency of appearance

|  |  |
| --- | --- |
| **Brand Name** | **Frequency of Appearance in comments** |
| Anonymity | 183 |
| Security | 266 |
| China | 155 |
| Value | 1064 |
| Technology | 463 |
|  |  |

Lift ratio Calculations

|  |  |
| --- | --- |
| **Brand Relation** | **Lift Value based on Association** |
| Bitcoin & Anonymity | 1.339399 |
| Bitcoin and Security | 1.253287 |
| Bitcoin and China | 1.856099 |
|  |  |
| Ethereum & Value | 1.991898 |
| Ethereum & Technology | 1.298978 |
| Ethereum & Security | 1.425648 |

3. Perform a sentiment analysis on each currency and issue and complete the table:

|  |  |
| --- | --- |
|  | **Sentiment** |
| Anonymity (Bitcoin) | Strongly Positive |
| Security (Bitcoin) | Positive with some negative |
| China (Bitcoin) | Strongly Negative |
| Value (Ethereum) | Strongly Positive |
| Technology (Ethereum) | Positive |
| Security (Ethereum) | Positive |

Bar Charts for Sentiment Analysis 🡪

1. Bitcoin and Anonymity (Strongly Positive)
2. Bitcoin and Security (Positive with some negative)
3. Bitcoin and China (Strongly Negative)
4. Ethereum and Value (Strongly Positive)
5. Ethereum and Technology (Positive)
6. Ethereum and Security (Positive)

4. Use the location data to find out the OVERALL sentiment about Bitcoin and Ethereum in the US versus the rest of the world and show the results in a table.

**Part of the original tweets\_without\_Location\_categorization.csv file had been copied into a separate file called tweets\_with\_Location.csv. This location file don’t have the tweets which are without location or any random word like moon or sun used as a location.**

Please find the file use for location analysis,

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|  |  |
| --- | --- |
|  | **Sentiment** |
| Bitcoin & USA | Positive with some negative(Mixed) |
| Bitcoin & Rest of the World | Positive with some negative(Mixed) |
|  |  |
| Ethereum & USA | Strongly Positive |
| Ethereum & Rest of the World | Strongly Positive |
|  |  |

Bar Chart Sentiment Analysis 🡪

1. Bitcoin and USA (Positive with some negative(Mixed))
2. Bitcoin and Rest of the World (Positive with some negative(Mixed))
3. Ethereum and USA (Strongly Positive)
4. Ethereum and Rest of the World (Strongly Positive)

5. What insights would you provide to the two cryptocurrencies based on your analyses in B, C and D above?

1. Issues with Bitcoin
2. Bitcoin and China

According to my sentiment analysis, tweets are pretty strongly negative. I would strongly suggest Bitcoin to improve their market in China. Initially China was sharing a major part of Bitcoin currency transactions. In 2013, when government ministries issued an official notice titled ‘Guarding against the Risks of Bitcoin’, which stated bitcoin may not be used as a currency, Bitcoin price fell by 35% in 40 minutes. This shows the dominance of China over Bitcoin popularity. Secure storage and transmission of bitcoins are the core areas of consideration along with preventing systemic risks to the financial system and preventing financial crimes.

1. Bitcoin and Anonymity

My sentiment analysis shows, tweets about Bitcoin and anonymity are neutral but slightly on a positive side. From my collection of tweets all the tweets are either neutral or positive. So, people are more or less happy with anonymity provided by bitcoin. By now, most Bitcoin veterans know that it is not anonymous, but, rather, pseudo-anonymous. Hence, most people are neutral about anonymity. People are happy because unlike bank accounts and most other payment systems, Bitcoin addresses are not tied to the identity of users on a protocol level. Anyone can create a new and completely random Bitcoin address (and the associated private key) at any time, without the need to submit any personal information to anyone. Bitcoin has come up with better user and their public key storing approach to make anonymity more strengthen. This not only attracts more users across the world but also converts people’s neutral opinions into positive sentiments.

1. Bitcoin and Security

Unlike Ethereum not all investors are happy with the security provided by Bitcoin. According to twitter survey almost 70% twitter users feel secured using Bitcoin digital currency. But rest 30% have some concerns. According to the users, Bitcoin protocol itself may be secure, the wallets and services used to store and exchange Bitcoin may not. Online Bitcoin wallet service inputs.io was hacked twice. Heavy Distributed Denial of Service (DoS) attacks aimed at taking advantage of bitcoin’s transaction malleability being recorded. Security is the main reason that is affecting the reputation of Bitcoin because of which more and more investors are shifting their preferences towards Ethereum, Ripple and other cryptocurrencies. Even though currently Bitcoin is the most famous, most preferred cryptocurrency in the world, these would not last much longer if they wouldn’t improve their security levels.

1. Issues with Ethereum
2. Ethereum and Value

Twitter users are strongly positive about market value of Ethereum. Almost 97% of the surveyed users have positive sentiment about value of an Ethereum. This is because Ethereum has ascended in value in recent years. The increase in the value of Ethereum is prolific. Even though price of an Ethereum is lower than price of a Bitcoin, it is actually good actually a good thing for potential investors who are looking for means of investing other than Bitcoin. The lower price may attract more investors as there is more room for growth. So, Ethereum has to not only maintain its growth but also has to improve it to catch more investors.

1. Ethereum and Technology

Positive sentiment has been observed among the surveyed twitter comments. Only around 6% of the users are not happy but rest are either neutral or happy with the provided technology. While most people are more familiar with Bitcoin, Ethereum has also gained its fair share of the market. However, the key difference between the two lies in the technology used by Ethereum and Bitcoin. The difference in the system would be that Ethereum’s data processing is much faster than Bitcoin, as Ethereum’s system automatically applies the terms and conditions of a contract once it has been agreed upon. There is not only Bitcoin who is competing with Ethereum but also there are other currencies like ripple.

1. Ethereum and Security

According to surveyed Twitter users, they are strongly positive and find themselves secured with the use of Ethereum. Almost 97% of the surveyed users have positive sentiment about security of an Ethereum. The less than two years old digital currency has now become the most secured blockchain to mine. ethereum’s blockchain becomes the most secure out of all proof of work based blockchains, and becomes first to overcome bitcoin in this measurement. In this technological and digital world Ethereum has to maintain some security standards as well as has to improve its security to the next level to attract more investors.

1. Bitcoin location level analysis
2. Bitcoin in USA

Location analysis shows that there are mixed sentiments but more on positive side among the investors in USA about Bitcoin. More precisely, as per the surveyed twitter users’ data almost 68% of people are in favour of Bitcoin and 32% have some concerns with it. People are positive because it’s a oldest and well established brand and therefore safer option to invest. But now Bitcoin is losing its grip because of some issues like security. There are many complaints registered in USA regarding hacking of transactions, loss of money, money laundering. In a current era, Bitcoin is not providing the adequate security to the transactions. Many users lost millions of dollars because of these lack of cybersecurity. So, Bitcoin has to improve security standards also has to work on other prospects like jobs, scaling, speed to maintain their rank 1 position. Because USA is a one of the biggest market in the world.

1. Bitcoin and Rest of the world

Investors from rest of the world have almost same sentiments about Bitcoin. As per my analysis, 72% of the investors are still stick to Bitcoin and have a somewhat positive sentiments about it. But being the most famous choice among the available options of cryptocurrencies for large number of years, analysed percentages are not synched with it. This percentages show that people have started changing their minds and shifting to either other cryptocurrencies or to other means of investments. Issue happened in China in 2014 demolished the growth of Bitcoin up to certain extent. Bitcoin has to cop up with government regulations of different countries. It has to provide more secured environment for transactions. Also has to build a belief in people by scaling, improving market value, controlling frauds.

1. Ethereum and USA

Twitter users from USA are strongly positive about Ethereum. Almost 88% of the surveyed users have positive sentiment about Ethereum. This is because Ethereum has ascended in value, improved security, become more scaled in recent years. The increase in the value of Ethereum is prolific. Even though it’s a just 2 years old cryptocurrency Ethereum is giving tough competition to Bitcoin cryptocurrency. USA is more frightened about security aspects of digital currency and Ethereum is up for it by providing latest technology, better security standards. So, Ethereum has to not only maintain its growth but also has to improve it to catch more investors from USA. As per the current graph of progress of Ethereum in USA, Ethereum is doing great and expected to progress with the higher rate in near future.

1. Ethereum and Rest of the world

Investors from the rest of the world follow the same trend what investors from the USA follow. Investors from all across the world are highly positive with their experience with Ethereum. This positivity is evident from their tweets. Ethereum is growing at a faster rate in every aspect like value, security, scaling, speed etc. as compared to other cryptocurrencies. Issues with respect to Bitcoin raised by China indirectly helped Ethereum to grab more investors. Ethereum’s data processing is much faster than Bitcoin, as Ethereum’s system automatically applies the terms and conditions of a contract once it has been agreed upon. So, if Ethereum work on more providing more security, great market value, reliability then this emerging cryptocurrency will keep attracting the investors from rest of the world and will cross Bitcoin.