Brand Monitoring for Dogecoin Cryptocurrency on Twitter

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Abstract. Dogecoin was started in 2013 as meme coins and considered as a joke. However, it has become a phenomenon when the price was risen to 800% in January 2021 and soared to 400% in April 2021. Despite the skyrocketed price in early 2021, many investors still did not take Dogecoin seriously because it did not have strong fundamental compared to other cryptocurrencies. Nevertheless, many believes that Dogecoin soaring price was influenced by strong Dogecoin community on Twitter and several tweets by influential public profiles like Elon Musk. Cryptocurrency itself also has brand attributes such as names, positioning, and reputation in the market that often affected by public sentiment in social media like Twitter. This objective of this research was to monitor Dogecoin cryptocurrency as a brand. Conversation data on Twitter was collected with Brand24 from 1 April - 23 May 2021 when several important events occurred. The method used in this research was social media analysis combined with brand monitoring. The result of this research implies that Dogecoin gained more positive sentiment than negative sentiment. Also, strong influence from top public profiles, and the use of the right hasthags and cashtags were the important factors that affect the brand reputation.

Keywords: Brand Monitoring, Cryptocurrency, Dogecoin, Twitter, Sentiment Analysis

1 Introduction

From a practical point of view, brand monitoring is an activity to monitor multi channels to look for mentions of a brand and measure what is being talked about it [1]. Social media is often used by companies to monitor public opinions regarding the reputation of their brands [2]. Furthermore, monitoring mentions on social media can help companies to maintain relationship with the customers and assess public reception towards their brands [2]. Both positive and negative value of a brand that related with company reputation could be seriously affected by community on social media [3]. Therefore, brand monitoring is a crucial task to be included in the business intelligence framework for any modern companies, especially in order to monitor products and brands reputation [4]. Brand monitoring could also be used as early detection process to find threats that started to appear in any digital media [5].

Hence, risks could be anticipated before developing into crisis [5]. One of the methods used for brand monitoring is sentiment analysis, especially to observe brand reputation in social media [6]. Sentiment analysis is a process to recognize and classify customer's opinions in order to observe their sentiment regarding specific topics related to a company's products and brands [7]. The sentiment collected from social media could be analysed and categorized into positive, negative and neutral sentiment [7]. Moreover, sentiment analysis could identify attitudes, emotions and opinions of the posts' writers [8]. Sentiment could be triggered by certain topics and issues regarding a brand, therefore topic analysis should be taken in order to get more business insights about topics and issues that actually drive the sentiment [7]. Sentiment analysis could also be utilized to identify the right influencers for a brand and evaluate their performance to promote and increase the brand reputation [9].

Cryptocurrencies are digital properties that are designed as virtual currency in decentralized ledger technology called blockchain [10]. Cryptocurrencies use cryptography to manage several capabilities such as to ensure the security of value exchange process between holders through decentralized network without being controlled by authorities [10]. Despite the decentralized network, several cryptocurrencies are created by companies to be distributed and sold in the market exchanges [11]. At the time of writing, there are more than four thousands cryptocurrencies in the crypto networks [12]. A name of a cryptocurrency could be considered as a brand as long as it is used to identify a single source of creator and distributor of the cryptocurrency [11]. Furthermore, most of the cryptocurrency companies use social media to promote their cryptocurrencies [13]. They publish news, tips, features upgrades, events and other positive publicities to make investors believe that the cryptocurrency has a promising future [13]. Those efforts to create positive sentiment on social media are indeed in line with the fact that many investors rely on social media especially Twitter to check for cryptocurrency price predictions [14]. The investors rely on positive or negative sentiment on social media as one of the indicators for predicting the value of cryptocurrencies [14].

Dogecoin was a cryptocurrency that was initiated by Billy Markus and Jackson Palmer in 2013 and started as a "joke currency" with Shiba Inu dog as its mascot [15]. Even though Dogecoin was only created for fun, but at the time of this writing Dogecoin already ranked #6 with market cap of more than $31,517,644,923 USD [16]. Moreover, in January 2021 Dogecoin's price has soared 800% [17] and was continued with an increase of 400% in April 2021 [18]. The skyrocketed price of Dogecoin was inseparable from the extraordinary support from Dogecoin community at Twitter with popular public figures such as Elon Musk, Snoop Dog, Gene Simmons, and Mark Cuban [15] [19]. Some tweets from those public figures were considered influential in increasing the value of Dogecoin, like tweets from Elon Musk and Mark Cuban that followed by significant increase in Dogecoin price [15] [19]. The Dogecoin community's hype also shown on social media like Twitter with a lot of popular hashtags related with Dogecoin, such as #DogeDay to celebrate Doge Day on April 21st, 2021 [20]. Dogecoin was considered as a risky investment because it has no solid fundamental compare with other major cryptocurrencies such as Bitcoin [21][22]. David Kimberley, an investing app analyst at UK states that Dogecoin's skyrocketing price is a typical case of the greater fool theory, where people buy an investment not because of its value but because of the hype that causes many people will buy until the price up and then sell it to make an instant profit [18]. In addition, Dogecoin network's code was rarely updated compare with Bitcoin that release updates almost every day [22]. The last Dogecoin code update was in February 2018 and that indicates that Dogecoin needs more consistent technical development [22].

2 Problem Statement

Currently, there are not many studies that focused on cryptocurrency as a brand. However, marketing and financial analysts have started to relate the reputation and acceptance of a cryptocurrency with its branding development efforts [23]. David Ogilvy states in his theory about brand image, that a brand consists of intangible attributes, such as name, reputation and advertising practices [24]. Those attributes determine the preference, trust and loyalty from public towards a brand [23]. Cryptocurrencies also have attributes that contribute to branding process, such as positioning on the market and unique names that easy to remember and reputation among specific target communities[23]. Furthermore, as the nature of cryptocurrency as a decentralized ledger, the brand image is not controlled by centralized authorities and the brand value in the marketplace is determined by changing public perception [25]. Despite all the positive phenomena that happened around Dogecoin, there are a lot of doubts about the sustainability of this parody cryptocurrency [21]. Therefore, more research regarding brand monitoring of Dogecoin is needed, especially to monitor public sentiment on social media.

3 Research Questions

This research was done to conduct brand monitoring on Dogecoin cryptocurrency at Twitter to answer these research questions:

1. How is the public sentiment towards Dogecoin?
2. What are the most popular conversation hashtags and topics about Dogecoin?
3. Who are the most influential public profiles that give significant impact towards Dogecoin reputation with their tweets?

4 Purpose of The Study

Purpose of this study is to monitor Dogecoin brand reputation on Twitter. The result of this study will give benefit to both Dogecoin developers and investors. The developers will get suggestions on how to monitor Dogecoin brand reputation on Twitter using brand monitoring tools such as Brand24. The analysis of this study will also give insight for Dogecoin developers about the public sentiment towards Dogecoin as a brand and give useful compilation about popular topics that can drive public sentiment. Furthermore, the study will also give reference about the most influential public figures that can help to improve Dogecoin reputation and give investors more confidence in Dogecoin value. The investors will also get a useful guideline from this study on how to do brand monitoring easily and fast using practical tools like Brand24 to get more valuable insight before deciding to do investment in Dogecoin and other cryptocurrencies.

5 Conceptual Models

As shown on Figure 1, cryptocurrency brand reputation on social media is crucial for investors to determine the right decision for their investment in a cryptocurrency. Dogecoin is considered a cryptocurrency with high volatility based on public sentiment and influential tweets on social media. Thus, it is important for Dogecoin developers and investors to do consistent brand monitoring for Dogecoin on social media, specifically on Twitter.

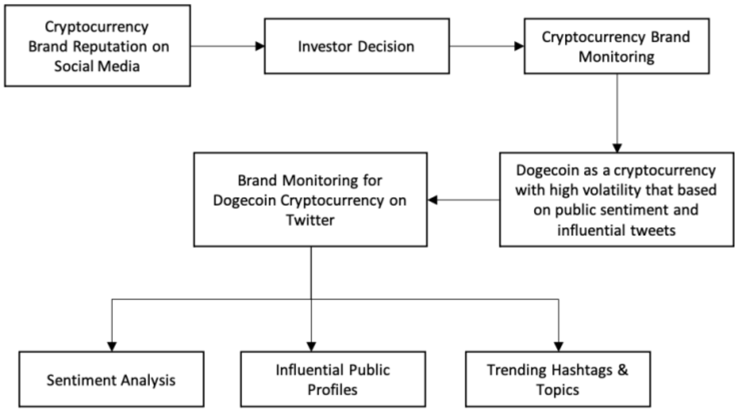

Fig. 1. Conceptual Models - Brand Monitoring for Dogecoin Cryptocurrency on Twitter

6 Research Methods

The methods used in this research were social media monitoring combined with brand monitoring methods. The first step conducted in these methods was collecting conversation data from Twitter with keyword "Doge" using Brand24 as brand monitoring tools. The period for data collecting was between 1 April to 23 May 2021 when several important events occurred. The next step was to analyse the public sentiment toward Dogecoin using Brand24 and categorize the sentiment into positive and negative sentiment. This step also looked for the most popular tweets on each positive and negative sentiment to get valuable insight about tweets that could influence the sentiment. After analysing the sentiment, the third step is to look for the most influential public profiles with tweets about Dogecoin that got high influencer scores at Brand24. Subsequently, the fourth step was to find popular hashtags and topics about Dogecoin that could drive conversation trend in the community. Finally, the last step was to analyse all the data findings and get conclusion about Dogecoin brand reputation on Twitter.

7 Findings

As mentioned before, this research was done using Brand24 as brand monitoring tools that generated several valuable data insights to monitor Dogecoin brand reputation on Twitter. The first data was sentiment categorization with the amount of mentions for each sentiment. As presented on Table 1, there are there are more positive sentiment than negative sentiment towards Dogecoin. Positive sentiment towards Dogecoin will help to boost investors' confidence, as more and more investors look for social media sentiment to predict cryptocurrency price and to decide the right steps for their investment [14][26].

Table 1. Mentions and Sentiment of Dogecoin on Twitter

Total Sentiment	Positive Sentiment	Negative Sentiment
698 K mentions	183 K mentions	139 K mentions

Another finding that closely related to public sentiment was the list of top public profiles on Twitter that have significant influence with their tweets to drive opinion and sentiment towards Dogecoin. Voice of share on Brand24 is the visibility measurement of a public profile on various channels by counting the amount of mentions and engagements such as impressions, share, hashtags, reach and compare it with the whole market [27]. Whereas level of influence on Brand24 is determined by the amount of followers, mentions, reach, and engagements towards a public profile [28]. As we can see on Table 2, there were top 15 influential Dogecoin public profiles on Twitter. In general, there were two types of public profiles that have high level of voice share and influence on Dogecoin. The first type was public profiles who already gained popularity on other area or other cryptocurrencies beside Dogecoin, such as Elon Musk (@elonmusk), Mark Cuban (@mcuban), Meek Mill (@MeekMill), and Changpeng Zhao (@cz_binance). The next type was public profiles that popular because of their accounts and tweets that are dedicated only for Dogecoin without revealing their original identities, such as @DailyDogeUpdate, @DogecoinRise, @Dogecoinvalue, and @itsALLRisky. Those on the first type have been shown to tend to obtain higher voice share and influence score compare to those on the second type. Most of the tweets from these public profiles contain positive sentiment towards Dogecoin such as the tweet from Elon Musk "Doge Barking at the Moon" [29] that followed by 400% increase in Dogecoin price [18]. However, there was also a warning tweet about Dogecoin volatility from Lark Davis (@TheCryptoLark), one of the influential public profiles on the list, that says "When the $doge party stops it won't be pretty." [30]. Tweets from popular influencers could drive people opinion towards issues in a community [31]. Therefore, all those influential public profiles' tweets could potentially shape people opinion and lead to both positive or negative sentiment towards Dogecoin.

moon $doge $xrp $bnb $btc $ltc $link $ada unknown $eth pump elonmusk dogecoinrise bitcoin ethereum eth safemoon dogecoin wallet cryptocurrency dogecointothemoon coin people usd binance buy dogearmy crypto

Fig. 2. Popular Discussion Topics About Dogecoin on Twitter

Table 2. Top 15 Influental Dogecoin Public Profiles on Twitter

	Public Profiles (Twitter username)	**Voice Share**	**Influence**			**Public Profiles (Twitter username)**	**Voice Share**	**Influence**
1	elonmusk	17.078%	115M		9	binance	0.89%	6M
2	bmurphypointman	4.584%	31M		10	DogecoinRise	0.831%	5.6M
3	MeekMill	2.485%	17M		11	Dogecoinvalue	0.802%	5.4M
4	cryptunez	1.504%	10M		12	flurbnb	0.733%	4.9M
5	cz_binance	1.298%	8.7M		13	TheCryptoLark	0.635%	4.3M
6	DailyDogeUpdate	1.241%	8.4M		14	itsALLrisky	0.612%	4.1M
7	davidgokhshtein	0.987%	6.6M		15	TraderWisdom	0.611%	4.1M
8	mcuban	0.949%	6.4M					

Cryptocurrency communities and developers usually use hashtags by putting the "#" symbol in front of the cryptocurrency names or abbreviations in order to categorize conversation and to make the tweets discoverable [26]. For example, hashtag #BTC for Bitcoin and #ETH for Ethereum [26]. As listed on Table 3, there are several popular hashtags to identify conversation on Dogecoin such as #doge and #dogecoin. Furthermore, hashtags #crypto and #cryptocurrency also being used to include Dogecoin conversation as part of cryptocurrency topics in general. Dogecoin has a great support from its community, and hashtag #dogearmy was used to identify tweets that belong the community's discussions.

Table 3. Top 15 Trending Dogecoin Hashtags on Twitter

No.	Hashtags	Mentions		No.	Hashtags	Mentions
1	#doge	221,974		9	#eth	24,662
2	#dogecoin	112,040		10	#dogecoinrise	24,468
3	#crypto	45,931		11	#safemoon	23,155
4	#bitcoin	43,341		12	#elonmusk	22,459
5	#dogearmy	40,479		13	#binance	16,556
6	#btc	33,805		14	#bnb	15,778
7	#dogecointothemoon	32,083		15	#xrp	15,458
8	#cryptocurrency	26,646				

Moreover, there are several popular hashtags that used to encourage all Dogecoin investors to keep holding their investment especially when the price drops, such as #dogecointothemoon and #dogecoinrise. Interestingly, there are several hashtags which belong to other cryptocurrencies that often put in the tweets about Dogecoin. Those hashtags are usually used to identify some of the major or trending cryptocurrencies such as #bitcoin, #btc, #eth, #bnb, #xrp and #safemoon. In addition, there were other hashtags that represent public figures or established finance institutions, such as #elonmusk and #binance. Hashtags can help influencers or companies to spread messages to broader audiences than the existing followers or markets [32]. Therefore, the use of other popular cryptocurrencies hashtags, public figures or institution hashtags can make the conversations on Dogecoin reach more users on Twitters, including the ones that interested in other cryptocurrencies and other related topics.

Another data than can be analysed in Brand24 is context of discussion. With this data we can know what keywords or topics that frequently discussed among the Dogecoin community. Those popular keywords can be seen on Figure 2. Actually, there are not many different topics between the context of discussion and trending hashtags, except the use of cashtags with "$" symbol in front of the cryptocurrency's names or abbreviations. For example, $doge, $xrp, $bnb, $btc, $ltc, $link, $ada and $eth. Twitter provides cashtags to categorize conversation that related to finance such as stocks and cryptocurrencies [33]. Therefore, cashtags can help to reach more people that have interest in finance and may also interested in Dogecoin and other cryptocurrencies.

8 Conclusion

During the research period of brand monitoring and data collecting, Dogecoin cryptocurrency had more positive sentiment on Twitter and that was good for brand reputation as the investors tend to look at the sentiment for their investment decision on cryptocurrencies. There were also several top public profiles on Twitter that can be asked to use their influence to shape public opinion and spread positive sentiment with their tweets. However, public profiles also potentially could spread negativity toward Dogecoin and that is why consistent brand monitoring should be done to detect threats as early as possible so the right countermeasure could be done. Furthermore, using the right hashtags to spread information is needed to reach more audiences besides the existing audiences. It is recommended to not only use hashtags that normally used for Dogecoin, but also hashtags of other popular cryptocurrencies, public profiles, and institutions to make the tweets more discoverable.

Moreover, cashtags also needed to reach audiences that not interested in cryptocurrency but also interested in finance in general. The use of hashtags and cashtags should be utilized to create positive sentiment in the community.

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