

SOCIAL MEDIA INFLUENCE ON SOCIETY DINAMYCS AND PUBLIC POLICY MAKING

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INTRODUCTION

Internet is growing, which was originally used by certain circles, now can be used by much wider audience, its users include individuals from diverse social strata. Internet has spread massively, which originally could only be used by the urban community, now, could be accessed over the remote areas. Initially, it costs comparatively high, now become more affordable. The services offered by the Internet Service Provider was initially restricted, and could only be accessed one directional, now become more diverse. Now people could accessed it interactively.

Social Media is one of the results of the development of the Internet, emphasizing on the concept of social and interactivity amongst users, social media became one of the most widely used services on the internet (APJII, 2015). (Indonesian Internet Service Provider Association, 2015)

Social media users in Indonesia, are one of the highest in the world, with Facebook and Twitter are the most frequently used platforms. (Brand24, 2013). Usage of Social Media today's not only restricted for private purposes, but has been used to express opinions for the greater good. The emergence of particular movement initiated by the public initiated by the time eruption of Merapi took place on 2010, proved that Social Media could be used as an effective communications medium for spreading informatif, when we can't rely on mainstream media at that particular moment.

Microblog is one particular platform, used by many social medias. One of the very first providers of the microblog was a company called Twitter, essentially providing technology that offered a simplified blogging service.

Before its release to the public, Twitter was used as a research and development tool within Obvious, LLC. Twitter has been in the news media over the last year due to its use as a "hyper-grapevine news resources." And has been credited with breaking news about significant current events and natural disasters. (Safko, 2010).

Use of Social Media is now increasingly directed to the emergence of topics marked hashtag (#) to manage information, such as anxiety Yogyakarta citizens concern towards the relatively massive construction of hotels and shopping malls in Yogyakarta, which eventually les emergence of #JogjaOraDidol as trending topics amongst Twitter users surrounds Yogyakarta.

The dramatic rise of text-based social media, millions of people broadcast their thoughts and opinions on a great variety of topics. This research trying to provide answer on 'Can we analyze publicly available data to infer population attitudes towards certain topic?'

The activities for organizing the information in Social Media are often referred to as the 'Campaign'. Each Campaign need to be measured to indicate its effectiveness, until now there is on exact or identical instruments to measure it, so that the stakeholders wasn't able to experienced the campaign impacts, especially among public officials as regional policy makers.

RESEARCH OBJECTIVES

This research is seeks to describe the process of data analysis using particular tool to derive data based on specific keywords or trending topics, and presents those data on statistical graphics and numbers, that can be used as analysis elements to impact public policy process dealing with social issues.

THEORIES AND CONCEPTS

Social Media and User-Generated-Content

Social Media is one application that allows users to organize the production and distribution of information (data) to become much more personal, it is known as a user-generated-content platform. Unlike the mainstream / conventional media in general, where the users could only consume information in one direction. Social Media-based on user-generated-content allows users to communicate interactively.

User-generated content comes from regular people who voluntarily contribute data, information, or media that then appears before others in a useful or entertaining way, usually on the Web—for example, restaurant ratings, wikis, and videos. The use of such content has seen rapid growth in recent years, in part because it's fairly inexpensive to obtain (users normally supply it for no charge). For content suppliers, the process can be rewarding because it lets them receive recognition for their contributions. (Krumm & Davies, 2008).

Use of Social Media that are discussed in this study, related to the phenomenon of user-generated-content is limited to use of the platform Social Media known as microblogging, as applied in the platform Twitter, as a platform of Social Media that can be used as a medium for forming Public Opinion, as described by Elisabeth Noelle-Neumann (1974), public opinion arises from an interaction of individuals with reviews their social environment.

Microblogging is text messaging and a little more. It can be as effortless as sending a text message from your cell phone to a select group of friends. Anyone can microblog as often as they like, and can promptly read posts from other like-minded bloggers. Microblogging includes the ability to send messages, audio, video, and even attached files; it empowers users to make friends; get directions; give and receive advice; review books, restaurants, products and services; update customers; inform clients; send calendar and event notices and news; and more. (Safko, 2010).

Microblogging began with the advent of the web log, or blog. After some time spent writing lengthy, detailed accounts, people began to post more condensed, convenient,

portable, personal versions of their conventional blog posts into something that was termed a microblog. Microblogging was immediately hailed as conventional blogging's easier, and faster. These benefits rapidly made microblogging an increasingly popular form of social interaction and communication, which people began using to seek and share information and daily activities.

Twitter was born in March 2006 as the result of an R & D project at the San Francisco-based start-up company, called Obvious, LLC. It was initially used by the company's own employees to communicate internally, and launched to the public seven months later in October 2006. On March 19, 2007, Twitter's official debut took place at the annual South by Southwest (SXSW) meeting in Austin, Texas---and it won the South by Southwest Web Award in the blog category. Jack Dorsey---Obvious LLC. CEO and the man behind the concept of Twitter---gave a humorous acceptance speech: "We'd like to thank you in 140 characters or less. And we just did." (Safko, 2010).

In accordance to this, Twitter is a microblogging and social networking service that allows its users to send and receive brief (140 characters or less) text-based, micropost instant messages that are referred to as tweets. (Safko, 2010).

Twitter is a social medium specifically created to enhance communication. "Twitter is a service for friends, family and coworkers to communicate and stay connected. "People can "share their current activity or state of mind with friends and strangers." Chris Winfield deems Twitter a "word of mouth engine" for small business or dealing with particular issues to power better relationships. (Safko, 2010.) Users can receive updates through the Twitter web site, instant messaging, SMS, RSS, or e-mail, or through an application such as Tweetdeck or Facebook.

Figure 1 Twitter User Profile Template



There are several important indicators in a Twitter profile page, as shown Figure 1. The indicators are: Tweets, number of posts were uploaded to the Twitter platform. Following, is the number of users of Twitter accounts that you follow, while the Followers is the number of Twitter users who follow your Twitter account. Amount of Following and Followers will move dynamically, if a Twitter account owner does not protect his account, so that it can be seen and followed by others Twitter user account, freely.

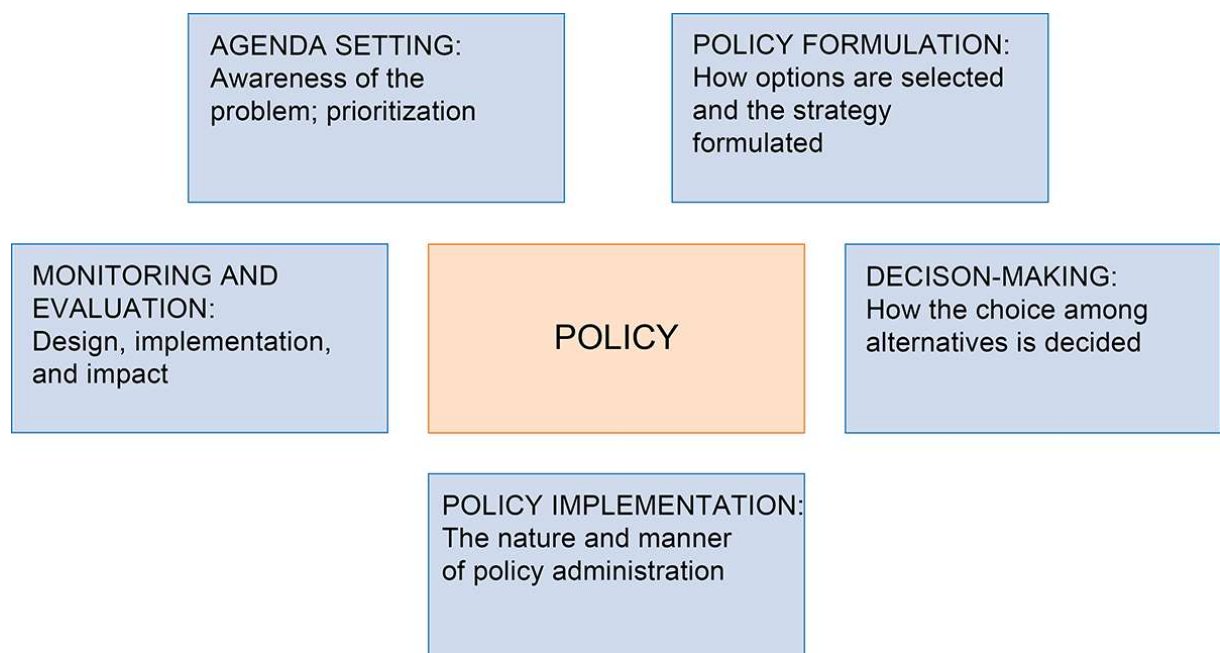
Related to that phenomena, the ways in which people use Twitter may relate to the kind of content posted and hence the issues that emerge from an analysis of trending topics. An early small qualitative study suggested that Twitter was used for informal social interactions (D. Zhao & Rosson, 2009). This was corroborated by a later study of 317 users which found that people needing to informally connect with others were more frequent Twitter users (Chen, 2011). The idea that Twitter is used for interaction rather than just broadcasting was supported by research which found that messages targeted at individuals were often (31% of the time) responded to (Honeycutt, & Herring, 2009). Moreover, although tags seem to be used in most systems to organise content or to aid information retrieval (e.g., Dotan & Zaphiris, 2010), Twitter hashtags tend to help organise conversations rather than content (Huang, Thornton, & Efthimiadis, 2010). Hence there is a wide range of types of information that support the thesis that Twitter is a space supporting significant social interactions. Despite this, however, people may also use it for specific information needs (e.g., Hughes & Palen, 2009).

Public Policy in the Making

Public policy simply defined, “Whatever governments choose to do or not to do.” (Thomas Dye, 2013) even elaborated by Peters, B. Guy (2010) “Public policy is the sum of government activities, whether acting directly or through agents, as it has an influence on the life of citizens.”

Public policy at best derived from issues among citizens, followed up by society needs, and finally defined in accordance with public service spirits. As stated by Court J, Mendizabal., et al (2006) shown by this figure below

Figure 2 Key components of the policy-making cycle



Correlated with this figure above, government at best held collaboration alongside private sector to accommodate citizen interest and aspirations delivered through social media applications are close with government and political issue, using microblog platform, deriving the usage of hashtags to classify issues under several concerns.

RESEARCH METHODS

This research uses qualitative type with consideration of research will be done by qualitative descriptive method. On 'Qualitative Research Methodology' book, Lexy J. Moleong explains the notion of qualitative research, intends to understand the phenomenon of what is experienced by research subjects such as behavior, perception, motivation, action, and others holistically and by way of description in the form of words words and languages, to a specific, natural context and by utilizing natural methods (Moleong, 2009).

The data collected in the qualitative descriptive method is in the form of words, images, and not numbers. Everything collected is likely to be key to what has been studied. Thus, the research report will contain data citations to illustrate the presentation of the report. In writing such a report, researchers analyze the data are very rich and as far as possible in the original form (Moleong, 2009).

Elaborated by Rachmat Kriyantono, in his book, 'Practical Techniques Research Communications', simply stated that qualitative research aims to explain the phenomenon with deeply through the collection of data as deep - in it. This research does not give priority to population size or sampling even population or sampling is very limited. If the data that been collected can explain 22 phenomena studied, then no need to look for other sampling. Here the more emphasis is the problem of the depth (quality) of data rather than the amount (quantity) of data (Kriyantono, 2007). This type of descriptive qualitative research aims to create a systematic, factual, and accurate description of the facts and properties of a particular population or object.

Researcher using third party analytical tools to derived, and classify data, those tools are KeyHole and TweetReach, proceed by analyzing impacts of Tweets on certain topics, using indicators, such as exposure, and impressions, to determine impact degree to form certain public opinion based on trending topics.

Qualitative data analysis starts from the analysis of various data collected by researchers in the field. The data is classify into certain categories. This classification or categorization should consider validity, taking into account the competence of the research subject, the degree of authenticity and triangulation of various data sources. Researchers really have to sort out where the data is less valid because the subject's competence in providing answers doubt, dialogue data with one another, and so on. After classification, the researcher makes a meaning to the data.

RESULTS

Social Issues amongst Yogyakarta Netizen

Yogyakarta known as the favorite destination for tourists, with great deal of tourism potential, with destinations ranging from cultural tourism destination, natural tourism destinations, to a shopping destination. Tourism is one of the pillars to drive economic aspects amongst Yogyakarta citizens, it is not surprising that many aspects that supports tourism sector prepared by the government, even in its management, the government involved the private sector.

Hospitality is an aspect that stands out as supporting the tourism sector in Yogyakarta. So far there have been 1,071 hotels with a variety of types, ranging from hostels, budget hotels, boutique hotels, to the hotel with five-star standard management (BPS, 2015). (Central Bureau of Statistics, 2015). Yogyakarta tourism potential has attracted a number of investors, which majority is networked (chained hotel management) domestic or abroad, such as Santika group, Tjokro group, Ibis, Accor, Hyatt, and many more.

Convenience to arrange travel personally, without assistance of tour & travel agents, supported by the development of the internet and gadgets, makes travelling a lot easier to do, and also easier to arrange based on traveler's budget. It also supports the increasing number of tourists visiting Yogyakarta. Arranging trip to Yogyakarta on regular basis is not impossible to be done.

Yogyakarta, besides known as a leading tourist destination in Indonesia, also known as the 'City of Students', where the majority of it's residents are students, according to the Database of Higher Education (Pangkalan Data DIKTI) on 2015 there were 123.706 students from all educational levels serving on higher Education levels in Yogyakarta, in accordance with this research, students, categorized as a class of people with 'technological literacy' as well trained to think critically.

Yogyakarta is a city marked by the diversity of the cultural background of its citizens (Subkhan, 2007), The phenomena happened as a Renault, Yogyakarta as a designation that draw people to proceed their education in this city, in addition to Yogyakarta as a city that still uphold the Javanese culture, with certain uniqueness that could evoke "sense of belonging" for anyone who ever lived in this city.

Yogyakarta also one of the big cities in Indonesia that contribute largely in the Social Media, thanks to its youngsters. A city with 54 % of internet penetration rates, came second after Jakarta (APJII, 2015). (Indonesian Internet Service Provider Association, 2015)

Twitter and microblogging as part of Social Media phenomenon aren't just U.S. phenomena; where Twitter was invented, nowadays, microblogging is widely popular around the world, according to Nicole (2009), explaining about Sysomos Inc. which is Toronto-based social media analytics company. Company's flagship product, which creates Media Analysis Platform (MAP), mines and analyzes content from social media or user-generated content to create a picture of media coverage. Sysomos, Inc. announced in January Of 2010 that Twitter is still growing in popularity internationally. Growth in countries like Germany,

Brazil, and Indonesia have led to the ever-increasing numbers of users around the world. (Safko, 2010).

According APJII (Indonesia Internet Service Providers Association, 2015), Social Media is an activity that is often performed by internet users, but now its use has begun to shift, simply from personal use, now begin to be used for broader needs. Yogyakarta with all its diversity, has the potential to cause social and urban problems, it would need the participation of the community together with the authorities, resolve social problems. Public officials are the expected authorities to solve these social and urban issues, but without the support of the community, efforts of the government, unlikely achieved.

It most likely carried out by the community to help the government, is to express the aspirations and Concern. The most effective media used to express such aspirations, is the mass media, but due to the limited reach of the mass media itself, this time people began to turn to the use of Social Media which has a wider and direct range.

#JogjaOraDidol are some of the trending topics on social media, which showed public concern about the rampant construction of hotels in Yogyakarta, affecting demographically and socially amongst Yogyakarta citizen.

Social media's topics using hashtag (#), could be considered as information, though hardly worthy, by the lack of definite validity standards. These particular information should not be missed by policy makers who took a significant role in managing Yogyakarta as tourism destinations and also a comfortable city to live for its citizens. Undeniably, Social media has become a source of information that can be selected and used as a basis in determining a campaign strategy in a digital world that discuss social issues in the community.

This research is seeks to describe the process of data analysis using particular tool to derive data based on specific keywords or trending topics, and presents those data on statistical graphics and numbers, that can be used as analysis elements to formulate digital campaign strategy dealing with social issues.

Social Media Analysis

Humans as social beings who need other people to socialize, it is a starting point where people can develop a network of friends who bring up certain topics of intensified conversation. Humans have a distinctive communication patterns, where the proximity factor will determine the extent to which a subject can be explored.

Each technology designed to meet human needs, one of them by adopting habits done by humans. Social Media is a form of technology that adopt one human habits who likes to socialize, to communicate with each other, as in Facebook that connects users with the term 'Friend', while Twitter use 'Follower' as a mark of friendship on the environment. Internet also allows the emergence of virtual communities that found online, while users connected to the Internet.

On online communities especially in new media, encouraging participation is one of the greatest challenges. Even if the social media channel offers the fancy tools for chat or have

great features for fulfilling users need, but if the community members are not participating or interacting each other the community will not flourish. The ecological cognition framework proposes that in order for actors to carry out a participatory action, such as posting a message, there needs to be a desire to do so, the desire needs to be consistent with the actor's goals, plans, values, beliefs and interests and they need to have abilities and tools to do so (Bishop, 2007). It is mean that all the community members should be involved to the issues that developed in the community.

When one community is built by the members of the group, the “buzzer” will be born. The buzzer itself can be defined as the person who brings a big influence on their communities. It can be an artist, a politician, a public figure, a writer, or an only ordinary person who has a certain unique characteristic which can make these people be accepted by whole members of the community. The existence of such communities is often brought about by people who share similar goals, beliefs or values, with such commonality forming the basis of an agreement to form and sustain a virtual existence (Figallo, 1998) on Bishop, 2007).

One of the Internet character is enabling any kinds of data stored in the Internet, it will never be lost, as stated by Professor Viktor-Mayer Schönberger¹ of the Oxford Internet Institute, in his book 'Delete: The Virtue of Forgetting in the Digital Age' in 2011. Mayer-Schönberger citing a statement from Andrew Feldmar, a well-known psychotherapist from Canada, with his infamous case on 2009, this accomplished professional with no criminal records, unfortunately got tangled on the web of law, when he crossed US–Canadian border, as he usually did, he got caught by the local authorities that run a background check on him, unluckily series of informations came up under Feldmar name, which was an incident happened four decades ago, when Feldmar using LSD, which is considered as illegal chemical compound in the United States and Canada. Furthermore, Feldmar commented on that incident, "I should warn people that the *electronic footprint* you leave on the Net will be used against you. It can not be erased." (Andrew Feldmar, 2009, as cited by Mayer-Schönberger, 2011).

The statement confirming assumption of researchers, that the digital trace that we leave on the Internet will only be piled up to almost invisible, but it will never disappear, 'internet never forget', very unlikely compared to the chatter that often occur among men, whereby information after discussion (Chat) came to an end, then the information can't be stored in the long term, while the 'conversation' that occur in Social Media will always be stored and can be accessed again easily, with persistent and reliable data.

'Conversation' that occur in Social Media, was originally designed for a specific community, as what Mark Zuckerberg did when designing Facebook that can only be accessed by the scope of his campus networks alone. (Phillips, 2007).

Over time, the conversation on Facebook can now be accessed by users who are outside the circle of friends, as well as by making a topic on Twitter, with the use of sign hashtag (#),

¹ <http://www.oii.ox.ac.uk/people/?id=174>

in accordance to this, Facebook has provided Facebook page and Facebook group concept community.

Marking "Conversation" on Social Media

Data conversation in Social Media tend to be unstructured linguistically, they appear randomly, irregularly, with unpredictable frequency, except that the data contained in Social Media is owned by a service provider (Twitter) so that anyone who would analyze those informations (datas) will encounter obstacles.

Social Media Data Mining is one method to perform data analysis on social media. Feng, De Andrade Barbosa, and Torres (2012) explains that this method is retrieved from social media websites, analyzed for sentiment, and categorized by topic and user demographics. The information (data) then archived in a data warehouse and various interfaces are provided to query and generate reports on the archived data.

However, the process of reading the information (data) conversation on Social Media is a challenge, Stieglitz and Dang-Xuan (2013) confirms the data in social media tend to be unstructured, researcher would need to utilize tools to make it easier in the reading process.

Several tools are available in the market can already be applied as a reader information (data) conversations, these tools can also display structured data, but there's no monitoring tools that named as the best monitoring tools, so there's need to compare respectively each tool to test the validity of data generated (Stavrakantonakis, Gagiou, Kasper, Toma, and Thalhammer, 2012), on the other hand the available monitoring tools has applied method of processing data (data mining), which includes the process of ETL (Extract-Transfer-Load) so can be considered to be applied as a proper reader information (data) conversation.

Monitoring tools that researchers use are TweetReach² and KeyHole³, which where both monitoring tools are only accessible for a fee, but the Keyhole facilitate trial for three days, while TweetReach provides a free version, limited to 100 first tweet with a span of 8 days. There's also Polaris⁴, as monitoring tools do derived sentiment from the same amount and same characteristic information (data).

Basically, various kinds of Social Media monitoring tools, for example TweetReach and KeyHole could only be accessed with certain fee, but the KeyHole facilitate free trial for three days, while TweetReach provides a free version, limited to first 100 tweets with a span of 8 days.

These monitoring tools, perform the monitoring process which began on 27 November 2015 to 4 December 2015. The expected information (data) is the number of posts, number of authors, number reach, and the amount of exposure, in addition Researchers can track the time range (time frame), which states when #JogjaOraDidol discussed in many coversations, which in turn these informations will be displayed in graphical form.

² <https://tweetreach.com/>

³ <http://keyhole.co/>

⁴ <http://polaris.gdilab.com/>

Onward, researchers will explained about 5 things that will be measured and analyzed, the *Post*, the number of conversations that appear within a certain time frame, components that are associated with *Post*, includes an original post, reply (reply), retweet (spread).

Author is an individual involved in a conversation in a certain time frame, the components related to author is the original author, spreaders, and respons providers.

Tweeting and *Following* constitute the two way communication and trusted network that drive the microblogging community. Any time someone we are following ceases to deliver relevant, "What's in It for Me?" content, we can simply decide to "unfollow" that person. This is the power of permission-based communication, whereby we choose who is allowed to communicate to us. Opting not to follow someone is like having our own built-in, user-controlled spam filter.

Exposure or can be also referred as the *Impression*, the amount messages exposure on the audience, i.e. number of the read message in timeline on limited time.

Figure 3 High Impact Users

	Posts	Avg Follower Engagement	Followers	Impressions	Exposure	Bio	Location
 Anick Rebellion @anick_rebellion	2	7	50	100	363,825	Hidup di negara luar tetap Sentosa dalam puspawarna http://www.anickkamiteoutsider.com	Malaysia
 Dodok #JogjaAsat @dodokpatriatungsa	1	4	2,566	2,566	11,070	#JogjaAsat #SiemanAmbyar #JogjaOralIdol #JogjaKangenKPK http://urbanpoorblog.wordpress.com/perhal	Yogyakarta, Indonesia
 Dana S @yol_myol	2	0	3,941	7,882	7,882	Calon pilot (j) #TolakReklamasiTelukBenoa CP 083867171754	Sieman Yogyakarta 55571
 Handsome Heroes @renomated	1	6	3,740	3,740	7,217	Rizki My Lifestyle for #PUNK! (ml), Admin @KoncoMusiman Allah. -Thanks God My Life is SANGARI Always Support @SID_Official and Stand for Tolak Reklamasi II https://www.facebook.com/itzkioutsiderjogjakararef=tn_mmm/	Umbutharjo, Yogyakarta
 Warga Yogya Berdaya @wargaberdaya	1	2	1,575	1,575	4,532	#SabdaWarga: Mengabdikan kepada WARGA, bukan kepada PENGUSAHA! - TERUS BERKARYA, JANGAN BERHARAP PADA NEGARA http://wargaberdaya.wordpress.com/	Yogyakarta

Reach, is the scope (extent) of the message, i.e. number of people who receive the message within a certain time frame.

The difference between the *exposure* and *reach*, is where *exposure* will count the number of the read message on the same account, while *reach* will count the number of Twitter accounts that received the message, calculated without repetition.

This research also discussing about *sentiment* that can be understood as comments that appear as response to the #JogjaOraDidol topic, where the comments which came from a wide range of Twitter user's that has a positive, negative, or neutral tendency, depends on the perspective applied by users of the Twitter account.

Figure 4 is the result of analysis using Keyhole monitoring tools, while Figure 5 is analisis result using TweetReach for monitoring #JogjaOraDidol. The data obtained from these monitoring tools have a slightly different.



Figure 5 KeyHole Data



Figure 6 TweetReach Data

By monitoring conversations for 8 days the results are that the topic started by dozens of people, its impact could reach hundreds to thousands of people. These particular dozens of people, often known as 'buzzers' or major influencers.

In any media, there will always be some persons who will be identified as major influencers or in some media called "buzzer". The influencer or buzzer is the person who has a large impact to their community, in the real world this kind of person called opinion leader. Likely in the real world, in the virtual world there is some person who has power to influence the movement of the crowd. These people become the opinion leader on their online community. Identifying these influencers or buzzers is easy, those buzzers is always come with a powerful characteristics and famous as an individuals who have the respect and authority among peers and the propensity to make recommendations and frequently interact with their own networks. (Apriyani, 2012).

People in social media, especially on Twitter are tending to be involved on particular issue which they feel related to it. So, when a buzzer shares their personal view about some issue rather than formal info, the interest rates from the friends or followers will also rise. In other way, the audience or in this case the "followers" will be more interest to the issues if the buzzers commented on certain issue using their personal perspective or experience.

These people will keep their followers keep interested in any kinds of informations related to themselves, as listed on figure 3 that indicates some major influencers (authors) on Twitter with the highest impact, often known as buzzers, which is widely known in the realm of Twitter, because of their concern towards urban problems, that occurred in Yogyakarta, related with the rapid and massive construction of hotels in Yogyakarta.

For this reason, each user does not have to be the one who initiated the topic, but sufficiently enough to redistribute those particular information. This is consistent with the percentage that showed the biggest contributor of content with highest rates of *reach* and *impressions* (exposure) as shown on figure 3.

Share of Posts

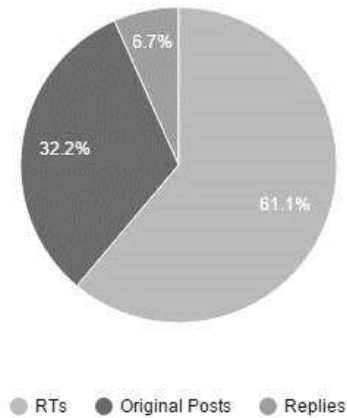


Figure 6 Share of Posts

Figure 6 showing share of post from Keyhole monitoring tools that summarizes than 68 accounts involved in #JogjaOraDidol topic during the last 8 days. These data showed as much as 61.1% or 52 users who perform RT (retweets) related with #JogjaOraDidol information (data), 32.2% or 27 users are the authors who initially posts information containing or related with #JogjaOraDidol, and total users who responds towards this original posts defined by the number of 6.7% or 5 authors.

Based on Figure 7 and Figure 8 also shown that the highest number of conversations were conducted on November 28th, 2015 consisting with the weekend, while December 1st, 2015 concurring with the beginning of the month, there were five (5) users who considered as the major contributors or users with the highest impact on #JogjaOraDidol topic, as can be seen in Figure 3.

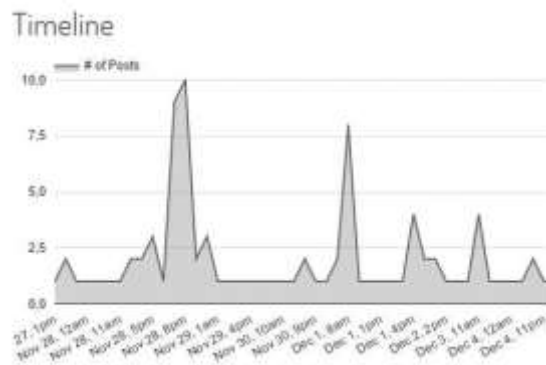


Figure 7 Timeline by KeyHole



Figure 8 Timeline by TweetReach

Furthermore, from the conversation monitoring during 8 days, researchers found 27.9% negative sentiment, 27.9% positive sentiment, and 44.2% neutral sentiment as shown in Figure 8.

Sentiment analysis and *opinion mining* are fields of study that analyzes people's opinions, sentiments, evaluations, attitudes, and emotions from written language. (Liu, 2012).

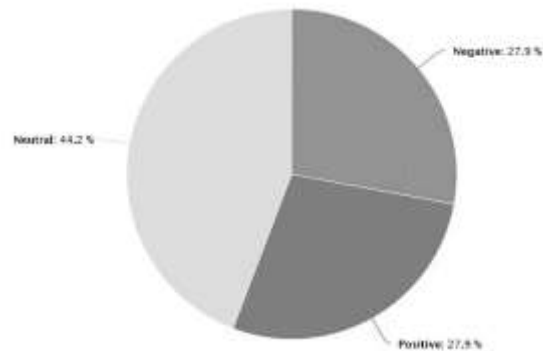


Figure 9 Sentiment Graph

Liu (2012) states, *sentiment analysis* and *opinion mining* are the most active research areas done in *natural language processing* (NLP) and also widely studied in data mining, web mining, and text mining, confirmed by Pang and Lee (2008) that these field of studies are important parts of information-gathering behavior that has always meaning to find out what other people think.

Kouloumpis, Wilson, and Moore (2011) said that displaying the conversation on Twitter using the hashtag (#), proved to be a useful baseline data to determine the sentiment of the conversation. A common approach to *sentiment analysis* is to use a lexicon with information about which words and phrases are positive and which are negative. (Wilson, Wiebe, & Hoffmann, 2009).

Nevertheless, Hirschberg and Manning (2015) states that NLP resources and systems are available only for high-resource languages (HRLs), such as English, French, Spanish, German, and Chinese. In contrast, many low-resource languages (LRLs)—such as Bengali, Indonesian, Punjabi, Cebuano, and Swahili—spoken and written by millions of people have no such resources or systems available.

It then becomes a new challenge to perform *sentiment analysis* in Indonesian language. In this study, researcher need to make adjustments for each outcome sentiment that Spears, to obtained the most accurate results.

CONCLUSIONS

Results from the analysis conducted by researchers, on unstructured conversation, after processing and analysis using monitoring tools, the information (data) can be read easily. A topic that is being discussed in social media also legible through presented data. However, we can not rely on one type of monitoring tool because each monitoring tool has its own benefits

and disadvantages. It is necessary to do comparison test amongst monitoring tools available in the market. Nowadays, people tends to use several monitoring tools proceeded by creating estimation on results of the data gathered. Based on the gathered data on #JogjaOraDidol topic during the last 8 days, from November 28th, 2015 until December 1st, 2015, researchers got that posting was initiated from 5 first or original *authors* that could reach hundreds to thousands of *impressions* or *exposures*, thanks to the massive deployment of social media users. This is consistent with our research early assumption, that social media is a form of technology developed from human behavior socializing with each other to discuss and share any kinds of information, on technological terms nowadays known as 'the big data'.

#JogjaOraDidol topic in the realm of social media can be used as a 'marker' that people of Yogyakarta possessing certain concern for the city they lived in, related to urban problems. These concerns are expected to become reference for public officials who have the authority to regulate administrative regions such as Yogyakarta, as special district.

CITATION AND REFERENCE

- APJII. (2015). *Profil Pengguna Internet Indonesia 2014* (P. Marius & S. Anggoro Eds.). Jakarta: Asosiasi Penyelenggara Jasa Internet Indonesia.
- Apriyani, Ema. (2012). *Are You "Buzz" Enough? The Asian Conference on Arts and Humanities Official Proceeding*. Osaka, Japan. http://iafor.org/archives/offprints/acah2012-offprints/ACAH2012_0161.pdf
- Bishop, J. (2007). "Increasing participation in online communities: A framework for humancomputer interaction." *Computers in Human Behavior* 23(4): 1881-1893.
- Bing, Liu. *Sentiment Analysis and Opinion Mining*. Morgan & Claypool Publishers, 2012.
- BPS. (2015). *TINGKAT PENGHUNIAN KAMAR (TPK) HOTEL BINTANG D.I.YOGYAKARTA BULAN SEPTEMBER 2015 SEBESAR 63,17 PERSEN*. Daerah Istimewa Yogyakarta: Berita Resmi Statistik Retrieved from <http://yogyakarta.bps.go.id/Brs/view/id/201>.
- Brand24. (2013). *Jakarta The Social Media Capital Of The World*. Retrieved 24 November, 2015, from <http://socialmemos.com/social-media-statistics-for-indonesia/>
- Court J, Mendizabal E, Osborne D, Young J. *Policy engagement. How civil society can be more effective*. London: Overseas Development Institute; 2006.
- Dye, Thomas R. *Understanding Public Policy*. 14th ed. Boston, MA: Pearson, 2013
- Feng, J., De Andrade Barbosa, L., & Torres, V. (2012).
- Hirschberg, Julia; Manning, Christopher D. *Advances in natural language processing*. Published on 'Science' 17 Jul 2015: Vol. 349, Issue 6245, pp. 261-266
- Krumm, J., Davies, N., & Narayanaswami, C. (2008). *User-generated content. IEEE Pervasive Computing*, (4), 10-11.
- Neumann, Elisabeth Noelle. (1974) *The Spiral of Silence: A Theory of Public Opinion*. *The Journal of Communication*, 24(2).

- Peters, B. Guy. *American Public Policy: Promise and Performance*. 8th ed. Washington, DC: CQ Press, 2010.
- Phillips, S. (2007). *A brief history of Facebook*. *The Guardian*, 25, 2007.
- Safko, Lon. (2010). *The Social Media Bible, 2nd edition. Tactics, Tools and Strategies for Business Success*. Canada: John Wiley & Sons, Inc.
- Stavrakantonakis, I., Gagiou, A.-E., Kasper, H., Toma, I., & Thalhammer, A. (2012). *An approach for evaluation of social media monitoring tools*. *Common Value Management*, 52.
- Stieglitz, S., & Dang-Xuan, L. (2013). *Social media and political communication: a social media analytics framework*. *Social Network Analysis and Mining*, 3(4), 1277-1291. doi: 10.1007/s13278-012-0079-3
- Subkhan, I. (2007). *Hiruk Pikuk Wacana Pluralisme di Yogya*. Yogyakarta: Kanisius.
- Wilson, Wiebe, & Hoffmann, *Recognizing contextual polarity: An exploration of features for phrase-level sentiment analysis*. Published on *Journal Computational Linguistics*. Volume 35 Issue 3, September 2009. Pages 399-433. MIT Press Cambridge, MA, USA 2009.