Study About The Usage Of Twitter And The Relationship With Tv Show In Indonesia

Noura Hassan Badjened, Alva Erwin, Kho I Eng

Faculty of Engineering and Information Technology, Swiss German University

Corresponding Author:

Noura Hassan Badjened
Email: noura.badjened@student.sgu.ac.id

ABSTRACT

The uses of social media every year has been explodes due to more new social media have invented, including their new function. Twitter has become a well-known social media, as it allow user to share short text message called tweets that can be contain of text or URL, twitter can be used as broadcasting media since every user can create about any topics they desire. And some topics contain TV program conversation, realizing this huge opportunity Many TV station have the official Twitter account to reach their viewers by giving information and creating Hastag to group up the conversation. So the TV station can get indirectly feedback.

Keywords*: Live-tweeting, Micro-blogging, Social Network, Social Television*

1. Introduction

Television has become a well-known broadcasting media and become one of the most widely used information, advertising and entertainment source. Since TV station needs audience and opinion and feedback about the show. Then the audience plays huge role in the success of the program and the TV station, that's one of the reason why TV station wanting as much as possible data about the audience. The information can contain how many audience are watching what is called by TV rating, what age and gander watch specific show and also the opinion that they have about the show or during the show being watched. Information such as how many people watch, what time they watch the most and what gender watch most can be achieved by program called Nielsen Rating. How about the opinion and audience thought that information is so important to improve TV station quality of the show and also the income. Twitter can be used to gain that opinion since many conversation contain TV show topics according to Fabio Giglietto [4].

2. Related Work

Recently twitter has become has grown popular and bigger which give many researcher and developer the big opportunity to use the data that founded from millions of users short message or in twitter they call it (tweets), several research have been done one of them is by Wakamiya et al (Wakamiya et al,2011) ,(Lee, R.,2011) [11], [12], they developed Twitter base TV rating program which rate base on users tweets, and they also make another research on Twitter base TV audience behavior system to measure TV ratings by analyzing TV lifestyles of the public through the microblogging service, Twitter, this type of rating have several benefit like, near real-time monitoring, almost zero-cost, feasibly survey of massive public's opinion.

(Doughty et al.2012)[3], studies about live tweeting search on how users talk on Twitter during different types of television shows (reality TV and a current events show). They found that twitter user talk more about the entertainment show, celebrity gossip and entertainment show.

(Buschow,Cet al, 2014)[2], who alanize the communication on twitter while watching TV.

3.   Methodology

There are five steps to be implemented in this research there are as follow: Define Time of The Program Show, Define sets of Keywords, Data Collections, Identifying TV audience, Analyse TV Related Conversation.
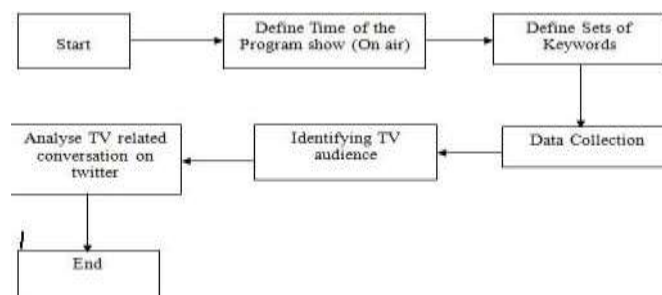

Fig. 1. Methodology Overview

A. Define Time of The Program Show on Air.

This step is crucial because we only need the tweets that in the timeframe of the show begin until the end.   This step is also help to filter the tweets that out of timeframe of the show considering that most tweets that come after the show usually are tweets discussion of the program show. Also considering that there are stages classification on tweets before and after the show end (Buschow,C.,2014) [2], but here we only want to get tweets that when the program on air. The table below is the program show that will be used to experiment to perform TV related Conversation.

Table 1. Program Time Show

Program Show Name	Day	Show Time begin and end
Mata Najwa	Wednesday	20:00 until 21:30
Indonesia Lawyers Club	Tuesday	19:30 until 11:00

B. Define Sets of Keywords.

Find appropriate keywords, since we know that we want to get the data of tweets that contain the program name, topic or the guest of the show then we should figure out the sets of keywords. And to know what the keywords we should search from their official website or on their official twitter. After knowing the topic then we start creating appropriate key words, and also do not forget to use has tag because twitter use hash tag to group the topic to make it easy to find users who are talking about the same topic to (Bruns,A. 2010)[1], also (Wakamiya, S. 2011)[11] state the important to define the set of keywords. table 3 below show the program name the official account and the hashtag of the program itself but that's not enough.

Table 2. Define Sets of Keywords

TV Chanel	Program Name	Official Twitter Account	Official Hashtag
Metro TV	Mata Najwa	@MataNajwa	#MataNajwa , #MN , #matanajwa
TV One	Indonesia Lawyers Club	@ilc_tvonenews	#ILC , #IindonesiaLawyerClub

There are other keywords that will always be change depends on the topic of the show that will be showed as example in table 3.

Table 3. Changeable Keywords

Program Name	Keywords
Mata Najwa	@MataNajwa, Mata Najwa, mata najwa, #MN, #MataNajwa, #matanajwa, @Metro_TV, #MetroTV, #metrotv, #metroTV, Apa kabar KPK,MEMBUKA DAPUR KPK , membuka dapur kpk, Membuka Dapur KPK, blusukan ke KPK, #MembukaDapurKPK, #membukadapurKPK, #membukadapurkpk, apa kabar kpk, Benarkah penangkapan politisi PDIP, Komisi Pemberantasan Korupsi ,@KPK_RI, KPK vs PDIP, kpk vs pdip , #KPKRI, #Blusukan, blusukan ke ruangan di KPKRI , tempat tersangka menghadapi penyidik KPK ,tempat tersangka , Barang bukti kasus korupsi, barang bukti, korupsi ,Korupsi, #korupsi,
Indonesia Lawyers Club	@ilc_tvonenews, #ILCTVONE, #ILCTVone, #ILCtvOne, #ilcTvOne,#ilctvone, #ILCTVOne, Indonesia Lawyer Club, indonesia lawyer club, ILC, ilc, BH Kapolri BG, #BHkapolrivsBG, BHvsBG, BH Kapolri,BG Jadi apa?, BH Kapolri BG Jadi apa?, BH Kapolri BG Jadi apa, BH Kapolri,BG Jadi apa, Kapolri, #Kapolri, #kapolri, #KapolriBH , #BH, BH, BG, #BG,kapolri,

C. Data Collections.

Twitter has already implemented twitter API (Application Programing Interface) and directly use it syntax methods that we can find in twitter4j.com. We start crawling all tweets that have been founded in defined timeframe and with the suitable defined keywords and hash tag, as we know that twitter use Hashtag to group the conversation. and directly store all crawled tweets in the database MySQL.

D. Identifying TV Audience.

In this step after we store the data in database we start filtering the data, to know whether the tweets include in the criteria to be able to rate the TV show,

The criteria are as follow:
- Tweets that found in the timeframe.
- Tweets that mention the TV show Account and the Hashtag.
- Tweets that include keywords from the show, re-tweets also considered as audience according to (Giglietto, F., 2013).

E. Analyse TV Related Conversation.

Base on the data that have been collected and filtered and appropriate with defined criteria, now we start collect all the data imported to excel and creating the graph. To see the result. The result will be on next chapter. In figure 7 show the data that recently collected all tweets that crawled are containing specific and defined Keywords.

According to (Wakamiya, S. et al, 2011) to ensure that the tweets are for the specific TV program the diagram explain as below.
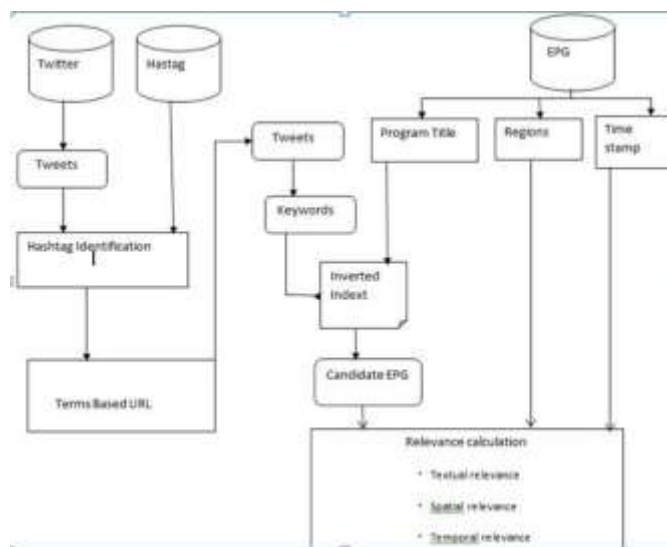

Fig. 2. Analyse TV Related Conversation

Here as clear we can see there are three database Twitter DB, Hash tag DB and EPG DB, so here they differentiate between the tweets and hastag bouth will be combined into

hastag identification then insert to, the term based url identify the tweets that contain specific string which can identify the program name.

Tweets go's to keywords, then go's to Inverted indext combined with program title   to determining relevance between a tweet and program titles. And for EPB DB it consist of program title, ragion and time stamp. All of combination produce.

• Textual relevance, to find tweets that relate to the TV show.
• Spatial relevance, used in when the same TV program are showed in different TV station.
• Temporal relevance, the time stamp of the tweets, to get a meaningful tweets it is. preferable to get it when the show   aired.

But in this thesis we combine twitter DB and Hashtag DB on the same database, and for the EPG DB we do not use any region   we only use program title and timestamp. Then the result will be without Spatial Relevance realizing that the tow TV program Mata Najwa and Indonesia Lawyers Club will not appear on other TV station.

4. Result

Before we show the data, first we should filter the data from the database, we create simple program that filter the program name the date and the keywords that used. The figure of the program is shown below.

Year : – Select Year – ▾ Month : – Select Month – ▾ Date : – Select Date – ▾ Hour : – Select Hour – ▾ TV-Show : – Select TV-Show – ▾

Query!!

Fig. 3. Simple Select Program

After we chose appropriate time stamp and the show name, the program will query and produce the result as shown in figure 8, number of tweets in one hours that divided into 5 minutes figure shown below.

Date	Time	Total Tweets
	20.05 - 20.10	326
22/04/2015	20.10 - 20.15	470
22/04/2015	20.15 - 20.20	493
22/04/2015	20.20 - 20.25	358
22/04/2015	20.25 - 20.30	639
22/04/2015	20.30 - 20.35	495
22/04/2015	20.35 - 20.40	487
22/04/2015	20.40 - 20.45	635
22/04/2015	20.45 - 20.50	479
22/04/2015	20.50 - 20.55	491
22/04/2015	20.55 - 20.60	355
22/04/2015	21.00 - 21.05	383
22/04/2015	21.05 - 21.10	340
22/04/2015	21.10 - 21.15	456
22/04/2015	21.15 - 21.20	605
22/04/2015	21.20 - 21.25	688
22/04/2015	21.25 - 21.30	702

Fig. 4. Mata Najwa Tweets

Then transform the data in to the graph to see the dramaturgy of tweets data.as shown in figure 5.
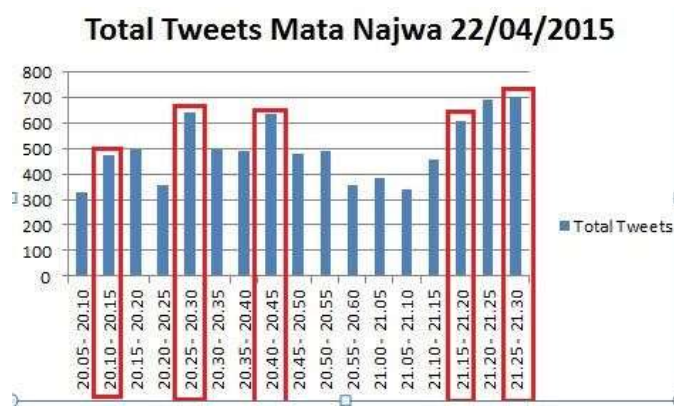
Fig. 5. Dramaturgy of Tweets (Mata Najwa)

Here is the profile of Mata Najwa's Show for this Tweets Result. So we know what the topic and why this tweets happens. Show name : Mata Najwa , Metro TV, Najwa Shihab.

- Topic   : Membuka Dapur KPK
- Date   : 22 – 04 – 2015
- Location   :   KPK Building
- Guest 1   : Irjen Pol. (Purn) Drs. Taufiequrachman Ruki, S.H., Mantan Polisi dan
                    anggota DPR RI, Ketua Komisi Pemberantasan Korupsi.
- Guest 2   : Zulkarnaen S.H., M.H., Mantan Jaksa   Agung,Wakil II Ketua KPK.
- Guest 3   : Imam B. Prasodjo, Sociology.
- Guest 4   : Benny K. Harman. Wakil Ketua Komisi III DPR.
- Guest 5   : Al Muzzammil Yusuf. Anggota Komisi III DPR.

Table below show the sets of keywords that used to crawl tweets.

Table 4. Sets of key Words

TV Show Official Twitter Account :	@MataNajwa , @Metro_TV , @NajwaShihab.
Some Keywords and Hashtag (#) :	Mata Najwa , mata najwa , #MN, #MataNajwa , #matanajwa , #MetroTV ,#metrotv , #metroTV.
Some Related Keyword related to the show :	Apa kabar KPK , MEMBUKA DAPUR KPK , membuka dapur kpk ,Membuka Dapur KPK , blusukan ke KPK , #MembukaDapurKPK , #membukadapurKPK #membukadapurkpk , apa kabar kpk , KPK ,#KPK.

That kind of information above is important to support the analysis.

Fig. 6. Najwa Shihab in KPK Building (Membuka Dapur KPK (22/04/2015)

Table 5. The Peak Time Tweets during The Show

Spike Time	Number Of Tweets
20:10 – 20:15	470
20:25 – 20:30	639
20:40 – 20:45	635
21:15 – 21:20	605
21:25 – 21:30	702

To begin the analysis copy and paste all of the tweets from the specific time frame to www.Wordit.com to create the word cloud to see the most used word in the tweets. The first one it going to be 20: 10 – 20:15.

Fig. 7. Word Cloud Membuka Dapur KPK 20:10 - 20:15 (22/04/2015)

The output of word cloud shows that there are different in colures and the font size of the text, the bigger the size of the text indicates the most used keywords. The keywords that related to part of the show are circled with red line Figure 7.

Table 6. Keywords and Tweets

Keywords	Some Tweets
KPK	RT @MataNajwa: Jika segalanya serba tertutup, bukankah pamor KPK bisa kian meredup? #MN).
Ruangan-ruangan	@asrofatunnisa (RT @MataNajwa: "Ada 86 penyidik dengan 17 admin yang membantu kegiatan penyidik, total 103 di ruangan sederhana." Direktur Penindakan KPK, Wa…)
Masyarakat	@sangpemimpi1922 (RT @MataNajwa: Di Ruang Pengaduan Masyarakat, Wakil Ketua KPK, Zulkarnain menjelaskan bagaimana alur laporan masyarakat yang masuk KPK ?| EKS…).

In table six we found many tweeter that re-tweet the tweets that created by the official TV Show account.   Re-tweets also count as one participation .means that person who re-tweet might have interest in the topic and also help to spread the information.

5. Conclusions

After done with the research there are several conclusion can me made:
1) The relationship between TV audience and Twitter user as the second screen were so strong. evidenced by number of tweets occur every time the show aired, even some of the tweets contain re-tweets that also mean that they are interested in the topic it self.

That behaviour also help in advertising the topic so people who doesn't watch are attracted to watch the show.

2) This research are very useful especially for the TV stations, where they need the feedback of the show form the audience. What tipe of show can interest the audience, and what the show guest that can grab audience attention.

3) Even the tweets were crawled with the help of timestamp and the specific keywords. Still the tweets contain advertisement and tweets that not related to the show but use some keywords of the show.

6. Recommendations

The research also have recommends for the future works in Related Tv Conversation base on twitter data:

1) More TV show at the same time to see which show the audience interested in more.

2) Use variety of genre of the TV show, also to analyse what genre that audiences are interested to share in Twitter.

3) This thesis also can be developed for Twitter base TV Rating, to develop another option on rating. Realizing the benefit of Twitter base TV rating from the side of cost, efficiency , massive audience, and the most important info and opinion form the audience.

The Contributions of this research are:
The study may contribution on several aspect like:

1) Make an input for TV station before they create the show. So they already know what guess that most of people talk about, to gain more audience.

2) As aidea givers where they can predict the user. Audience opinion is use full it can improve the quality of the TV station and improve the income also.

References

Antony, M. (2008). *What is Social Media?*. E-book: iCrossing. http://www.icrossing.com/sites/default/files/what-is-social-media-uk.pdf.

Bruns, A., Burgess, J. (2011). *The Use of Twitter Hashtags in the Formation of Ad Hoc Publics*.

Buschow, C., Schneider, B., Ueberheide, S. (2014). *Tweeting television: Exploring communication activities on Twitter while watching TV*.

Doughty, M., Rowland, D., Lawson, S. (2012). *Who is on your sofa?: TV audience communities and second screening social networks*. In Proc. EuroiTV '12. ACM. New York: NY, 79-86.

Fabio, G. (2013). *Exploring the Correlations between TV Viewership and Twitter Conversations in Italian Political Talk Shows*.

Kwak, H., Lee, C., Park, H., Moon, S. (2010). *What is Twitter, a Social Network or a News Media?*

OECD Economic Surveys INDONESIA. (2015).

Parker. *Real-Time Kinect Player Gender Recognition using Speech Analysis*. Online Available: http://www.radfordparker.com/papers/.

Schirra, S., Sun, H., Bentley, F. (2014). *Together Alone: Motivations for Live-Tweeting a Television Series*.

TV and Social Media Report Overview. (2013).

Twitter UK Internal. (2012). *SecondSync 2012: Tune in with Twitter Driving Discovery and Engagement with TV*.

Wakamiya, S., Lee, R., Sumiya, K. (2011). *Towards Better TV Viewing Rates: Exploiting Crowd's Media Life Logs over Twitter for TV Rating*.

Wakamiya, S., Lee, R., Sumiya, K. (2011). *Twitter-Based TV Audience Behaviour Estimation for Better TV Rating*.

Walker, D., Muchnik, L. (2013).   *Does Twitter Drive Television Consumption? Evidence from a Large Scale Natural Experiment*.

Wickramasuriya, J., Vasudeva, V. *Analyzing Twitter for Social TV: Sentiment Extraction for Sports*.