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PUBLIC OPINION FORMATION: THE ROLE OF INDEPENDENT MEDIA PORTAL DURING CRISIS

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Abstract

Trends in social media had become an approach throughout the world nowadays in spreading an information to the crowd. However, are the information given were the qualified source of information? And, how do they influence the formation of public opinion among netizens? This study aim to investigate the role of independent media portal in social media towards the public opinion formation during Bersih 4.0 Rally. Elements of examination were the distribution of public opinion through comments made on selected Facebook's post. Content analysis on the extracted comments was carried out using the Application Programme Interface (API) webtools to categorize the sentiment polarity while SPSS version 20 to verify the association of the variables. The independent variables consist of 4 sources of information while public opinion was taken as dependent variable. Results showed the correlations and effect among the independent media portal in the social media towards the dependent variable and highest comments found on independent sources of information where it consists of highest positive and negative comments. There were association among the sources of information towards the formation of public opinion in social media, where results showed the $x^2 = 26:814$, df = 6 was significant at $p < 0.05$. The independent media portal proved to be one of the most important source of information during crisis. A strategic use of independent media portal by the organisation during crisis can improve and strengthen the organization.

Keywords: Public opinion, viral issues, social media monitoring, online crisis management strategies.

1. Introduction

With the rapid emerging technology of social media, people are overabundance daily with various types of information. Everyone acts like a social sensor detector and experiencing news, and get to know more and more individuals across the globe by continuously sharing news, sentiments as well as status updates through various platform of social networks. Due to these platforms allow netizens to freely express their feelings and opinions, it might be difficult to control even by the policy makers. Facebook-like services is one of the social media platform which enable users to instantly aware of real-world events and allow them to spontaneously voice their opinions. The dissemination of different ideas, propagation of information and unification of the collective masses attention might ultimately result in online social media trends through the boost of online social interactions such as likes, shares, comments, and views (Borner et al., 2004; Crane & Sornette, 2008). As we can see now social media nowadays have the capability to replace the conventional news portals and providing efficient channels for information exchange and therefore this pattern of information exchange can brought the significant challenges to the existing understandings. Furthermore, this could serves diverse perspective of study to be explore further.

Although social media has become an effective channel for information dissemination, it can also be misused to spread inaccurate information. Thus, the development of social media in recent years has negative consequences on the unity of a country (Tess, 2013) as many consumers misuse the media to propagate false accusations (Tess, 2013). According to Tess Paul (2013), the recent surge in social media usage in Malaysia threatens national security. Nevertheless, this development promotes transparency in government and afford Malaysians the opportunity to discuss political issues of their interest in order to promote democratic values. Therefore, it is imperative that this situation is monitored through postings and comments in social media to rightly shape public opinion.

In previous research, much attention from multidisciplinary fields has been devoted to understand the mechanisms underlying popularity trends. The main focus in recent decades in particular has been on the properties of collective attention and the principles underlying the diffusion of novel items. For example, hashtags on Twitter and its equivalents are frequently used to gain insight into the generation mechanism of social memes by comparing items that succeed or fail to gain social popularity (Lehmann et al., 2012; Chang, 2010; Paradowski & Jonak, 2012, 2011; Bao et al., 2013a). Lehmann et al. (2012) focus on the tracking of hashtags on Twitter and identify discrete classes of hashtags according to their popular evolution over time. The authors also find that exogenous factors are more important than epidemic spreading in establishing hashtag popularity. Jafari Asbagh et al. (2014) propose a streaming framework for detecting and clustering memes in online social networks. Meanwhile, tracking popular topics or emergent events is also an effective way to study the dynamics of collective attention or collective response (Bagrow et al., 2011), which essentially drives the formation of trends or spikes (Asur et al., 2011; Bao et al., 2013b; Wu & Huberman, 2007; Gomez Rodriguez et al., 2010; Lin et al., 2011; Romero et al., 2011b; Bauckhage et al., 2014; Sasahara et al., 2013; Ferrara et al., 2013; Bagrow et al., 2011; Ferrara et al., 2014). Stroud et al. (2014) indicate that a news organization can affect the deliberative behaviour of commenters by tracking and cultivating deliberative norms via news organization involvement.

While the above studies mainly concentrate on the temporal or spatial dynamics of trends in online social media, a discussion on the roles of sources of information in the formation of social interaction

specifically comment is missing. Writing comment to express feeling or opinion is one of the public opinion reflection (Lippman, 1970 & Hennessy, 1970). This gap is the main concern of our study. Public opinion is usually the outcome of many interrelated forces (Lippman, 1946). The mass media which includes newspaper industries, radio and television stations constantly present a flood of information to the public. Usually, the vast majority of people are always kept abreast of daily events. However, some people may be ignorant of the government functions as well as the implication of public policies. Attempts for their opinion to be heard could be a source of the formation of public opinion. Independent news portal and online media as the source of information proven significant in contributing towards the online public opinion formation and negative sentiment built up (Watimin & Zanuddin, 2016)

Many previous studies have the biggest concern on how to target influential in social media such as investigating the dynamics of user influence on topics over time based on three measures of indegree, retweets, and mentions (Cha et al. 2010) where they find that most influential can have a significant influence on various topics. Other study propose an influence propagation model to study the problem of targeting initial influential nodes (Kempe et al. 2005) and finding people with more connections that might exert a greater influence on information dissemination (Luarn et al. 2014). However, who is applicable to disseminate information to online social networks is still unknown. Trends in online social media can be reflected by the popularity of hashtags, topics or even neologisms such as Internet slang (Zhang et. al, 2015). Trending describes a viral issue in social media (Asur, 2011). The collective attention underlying popularity peaks indicate the participation of a massive number of individuals during the diffusion of the relevant information (Zhang et. al, 2015).

Research of trends and public opinion in the social media from the point of public order remains largely untapped. Public order is one of the essential elements in a society of the country and involving a larger population. Therefore, the positive or negative effects of public opinion through social media platforms provide greater impact on the stability (socio-economic) and the prosperity of the country. In line with the sustainability of public opinion research that focuses on public order. To fill these crucial gaps, we argue that studying how different sources of information function in the propagation of information should be embedded in the context of the public order concern. Along this line, taking Facebook as the social media platform, we observe how the sources of information influence the formation of public opinion on the selected case study which is trending or viral. Bersih 4.0 Rally that happened in 2015 was selected as the case study for this research.

This study was conducted via sentiment analysis Application Programme Interface (API) web tools to differentiate and categorized the sentiments projected through extracted comments into 3 sentiments polarity namely positive, negative and neutral sentiment. The parameters measured were an independent media portal source of information which is usually from an unknown source, conventional media source, opinion leader source and monitoring body agency source. The main objective of this study was to investigate how the sources of information influences the formation of public opinion, identify the highest sentiment found in the comments of the selected Facebook postings on the trending issue studied. This was meant to investigate the source of information that is the largest contributor to the comment and its major sentiment found.

This study can assist the private and government agencies to formulate the suitable strategy, depending on the situation, to ensure the effectiveness of monitoring on trending issues in social media and curtailing negative impact of such issues in order to sustain the public order and security of the country. Through effective and efficient monitoring strategy, unhealthy environment which may threaten the unity of a country such as rallying, and riot incitement to "stoke racial sentiments" could be controlled before leading to a complete disorderliness.

Accordingly, the following hypothesis were specifically investigated to verify the study objective: (i) the negative comments is the major sentiments found in the postings of the viral issues studied (H1) (ii) independent media portal is the major contributor for the comments in the selected Facebook's posts for the case study among the other sources of information (H2) (iii) independent media portal is the major contributor on the negative sentiment among the other sources of information (H3) (iv) there is an association between the sources of information towards the public opinion formation in the social media (H4).

1.1. Public Opinion

The formation of public opinion involves five factors namely the presence of an issue, the nature of public, the complexity of the public preference, expression of public opinion and the number of people involved (Hennessy, 1970). An issue can be defined as a contemporary situation that may be difficult to deal with as it may contain an element of controversy and conflict (Hennessy, 1970). Also, the nature of public preference indicates the issue of interest to the recognized group (Hennessy, 1970).. The complexity of the public preference indicates the diversity of public opinion on an issue (Hennessy, 1970).. This opinion is typically expressed by word of mouth or in printed statements / writing or expressed by gestures. Finally, the number of people involved is equally important as a public opinion is a function of the affected population (Hennessy, 1970). Additionally, there are two dimensions of public opinion according to Bernard Hennessy (1970) i.e. "preference" which can be either to support or reject the public opinion/view and the second one is "intensity" that measures the strength of the public preference.

1.2. Sentiment Analysis

The sentiment is a feeling that can be translated into attitudes, emotions, and opinions (Liu, 2012). It is a subjective perception rather than a fact (Liu, 2012). The sentiment analysis is the computational study of people's opinions, sentiments, and emotions through entities and attributes that are expressed in the form of text (Liu, 2012). In a more concise definition, sentiment analysis is concerned with the study of individual sentiment analysis and opinion writing (Malakasiotis et.al, 2013). In sentiment analysis, the sentiment is divided into polarities referring to the texts studied for dismantling the opinion expressed into either positive, negative or neutral element (Pang & Lee, 2008).

1.3. Virality

According to Facebook, virality is defined as the percentage of people who have created a story from your page postings out of the total number of unique people who have seen it (Allen, et. al., 2013). Creating a story is refers to the number of likes, comments, and shares as well as any communication on

the post. The number of communications on a Facebook post include the number of those who have seen the post. Metrics such as the number of likes, comments, and shares were among some of the parameters for PTAT (People Talking about This) metric (Thongmak, 2015). Another measurement for virality is the engagement rate (Cvijikj & Michahelles 2013). The engagement rate refers to the percentage of people who have responded / acted, clicked, or commented on a post to the total number of people who viewed the post. There are several studies that have investigated engagement rate including "Facebook fans: A fan for life? (Nelson-Field & Taylor, 2012).

1.4. Case study profile

Bersih 4.0 Rally is the case study for this research. Bersih 4.0 referred to The Coalition for Clean and Fair Elections as known as Bersih 2.0. It is a combination of non-governmental organizations (NGOs) and civil society groups demanding the reform of the election in Malaysia. Originally, 'Bersih" is represented by Suara Rakyat Malaysia (Suaram), Women's Development Collective (WDC) and Independent Media Writer (WAMI), and led by former Bar Council president Datuk S. Ambiga. Who was the organizer of Bersih 2.0 rally. Bersih which is a multiple series of rally is also had been led by Maria Chin Abdullah, the President of WDC. First assembly of Bersih held On Nov 10, 2007; second gathering occurs On July 9, 2011, both gatherings (Bersih 1.0 and Bersih 2.0) were called as "Walk for Democracy". Third gathering with trademark"Sit In" helds on 28 April 2012. There were five claims for Bersih 4.0, namely:

I. Free and Fair Elections

II. A transparent government

III. To demonstrate Rights

IV. Strengthen parliamentary democracy system

V. National Economic Rescue

Bersih 4.0 begin at 2.00 pm, Saturday, August 29, 2015 until midnight on Sunday, August 30, 2015. The event was held simultaneously in Kuala Lumpur, Kuching, Sarawak and Kota Kinabalu, Sabah. In Kuala Lumpur, five locations have been designated as a safe secure venue to gather before the Independent day event took place at Dataran Merdeka. Other location are Sogo Mall area, Central Market, Dataran Maybank, Brickfields and Masjid Negara. Unlike Kuala Lumpur, there is no rally created in Kuching and Kota Kinabalu. Participants were only assemble and continue their activities in a safe location at their own location (where participants live). Initially, in Kuching assembly were scheduled to be held at Padang Merdeka, while Tanjung Lipat for Kota Kinabalu participants.

The day before the Bersih 4.0 was held, on Friday, August 28, 2015, the Minister of Communications and Multimedia, Datuk Seri Dr Salleh Said Keruak reiterated the Malaysian Communications and Multimedia Commission (MCMC) to monitor all the websites that publish news reports that could jeopardize security and order areas. He commented on the notice of the MCMC Facebook page on Thursday stating that the agency will block all Web sites that publish and disseminate information to encourage people to join Bersih 4.0. Commission decision on the ground that such a report could threaten the country's stability. The Royal Malaysian Police (PDRM) also issued a statement on 26 August 2015. The police insisted on not allowing Bersih 4.0 rally at Dataran Merdeka and the surrounding area. Dang

Wangi police chief ACP Zainol Samah said that Bersih 4.0 is not obtained permission from the Kuala Lumpur City Hall (DBKL) to hold a rally at the location. According to him, the rally was illegal Act 736 and the Peaceful Assembly Act 2010. In addition, on 26 to 31 August 2015, Dataran Merdeka will be used for the preparation for the National Day.

The police have also declared that the organizer of Bersih 4.0 rally are failed to obtain the permission from the owner of the premises for the purpose of using the site for Bersih 4.0 Rally. According to police, the participants were liable to legal action under the Peaceful Assembly Act 2012. The police have suggested the organizers to hold a rally at the National Stadium in Bukit Jalil as it is more appropriate place. City Council has rejected the organizers to use Dataran Merdeka and Padang Merbok for the assembly because it will be used for the preparation of the National Day. City Council also has suggested Bersih 4.0 rally to be held over the weekend after the National Day.

Despite failing to get a permit, Bersih 4.0 rally still continued as planned. The organizer of Bersih 4.0 Rally has rejected the proposal from City Council to postpone the rally. Maria Chin Abdullah, the organizer had made a statement that in terms of safety, Bersih 4.0 has provided its own security force, which were the total of 2,000 people for crowd control and traffic. He added that the public and businesses in Kuala Lumpur can carry out their activities and business as usual. Participants should come and prepared themselves with food and blankets to join the camp at Dataran Merdeka during the eve of the rally. She also warn to those who have the intend to create chaos to disrupt the rally because the event will held peacefully.

2. Problem Statement

How the sources of information influence the formation of public opinion on the selected case study (Bersih 4.0 Rally) which is trending or viral

3. Research Questions

The research questions of this study were to investigate how the sources of information influences the formation of public opinion, which sources of information has the highest sentiment found in the comments of the selected Facebook postings on the trending issue studied and last but not least which source of information is the largest contributor to the comment and its major sentiment found.

4. Purpose of the Study

This study can assist the private and government agencies to formulate the suitable strategy, depending on the situation, to ensure the effectiveness of monitoring on trending issues in social media and curtailing negative impact of such issues in order to sustain the public order and security of the country. Through effective and efficient monitoring strategy, unhealthy environment which may threaten the unity of a country such as rallying, and riot incitement to "stoke racial sentiments" could be controlled before leading to a complete disorderliness.

5. Research Methods

The viral issue related the public order case study selected for this research is Bersih 4.0 rally. This is the prominent negative public opinion formations over the social media which happened in Kuala Lumpur, Malaysia in 2015. The Bersih 4 rally was a series of planned rallies carried out by opposition party on 29 to 30 August 2015, which created political and public tension in Malaysia. Multisampling techniques consisting of purposive and systematic sampling are the method used to screen postings to be reviewed for this quantitative content analysis. Through this analysis the distribution of public opinion were categorized based on polarity of positive, negative and neutral sentiment (Woolley, et. al., 2010). On the first stage of the search for purposive method, the keywords 'Bersih 4' are used in the search box on monitoring body Facebook profile to extract all the posts by monitoring body on the viral issue studied. All the posts are selected to measure monitoring body variable. There are 2 Facebook pages from monitoring body involved which are 'Polis Diraja Malaysia' and 'Polis KL'.

The same keyword search used at the main search box on Facebook application to choose the posts for independent sources, media sources and opinion leader's sources variables. Any posts that has been posted by the official Facebook of conventional media is labelled as a sample of the media sources variable, any posts that has been posted by the official Facebook of public figure such as sportsmen, politicians, artists, preachers and others are referred to as samples for the opinion leader source variable and last but not least, any posting that had been posted by other than monitoring body, media and opinion leader are referred to as independent source variable.

5.1. Data set

The keyword search of "Bersih 4" found 147 posts for independent source, online media and opinion leader's sources variables. Out of 147 postings, there were only 52 posts hit the engagement rate of 2%. From the total of 52 postings, 6 postings each with the highest engagement rate were selected for analysis while for monitoring body, there were 6 out of 37 postings with the highest engagement rate were selected for analysis. There were 24 selected Facebook postings on Bersih 4.0 rally. A total of 5,296 comments were examined within 22th August 2015 to 31st August 2015 monitoring period.

5.2. API web tool analysis.

API Web tools and content analysis were employed to examine the viral influence and the public opinion formation on Facebook from the two cases; and finally data were analysed using SPSS version 20. The comments from all the selected post were then been extracted via API Web tools Facebook comments extraction and stored in PHP software (Hypertext Pre-processer) and mySQI database for further analysis The unit of analysis for this study is the Facebook postings while the unit of measurement is the comments. Highest postings that at least hit a total of 2% percent engagement rate in comments, shares and likes were selected.

After the selection of 48 postings, the next step is to detect the language used in the comments. The step were done via API languages detection. Any comments detected in foreign languages will be detected and translated in English via API translation (after data cleaning). The data and translated date were then transferred to the Software PHP (Hypertext Pre-processor) and mySQI data base.

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The next stage is data cleaning. In the stage, any comments with tagging, image, video or URL will be isolated. This technique uses PHP completely. The next stage is to translate comment in foreign language to English. Translated data were then stored in the PHP and mySQI database.
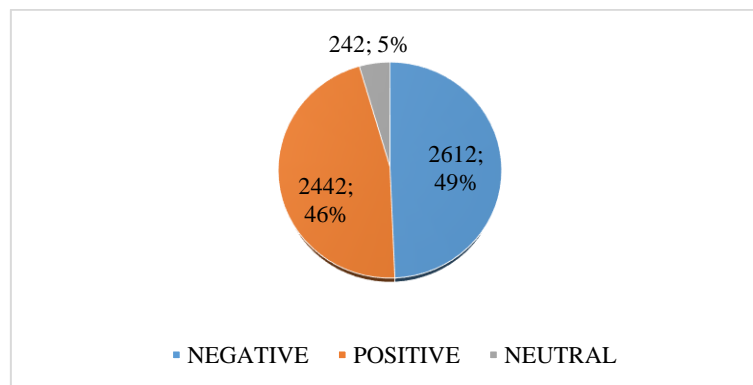
The final stage is the analysis of the sentiment via API sentiment analysis. The data stored in the database and PHP mySQI used to measure the variables analysed for public opinion. Through this software, comments were assessed and divided into three polarities, namely positive sentiment, negative sentiment and neutral sentiment. The breakdown of each polarity were recorded and transferred to the database and mySQI for further analysis using SPSS version 20.

5.3. SPSS Analysis. (Non-parametric chi-square test).

To verify the association of sources of information towards the public opinion formation in the social media, the non-parametric analysis of chi- square were done via SPSS version 20.
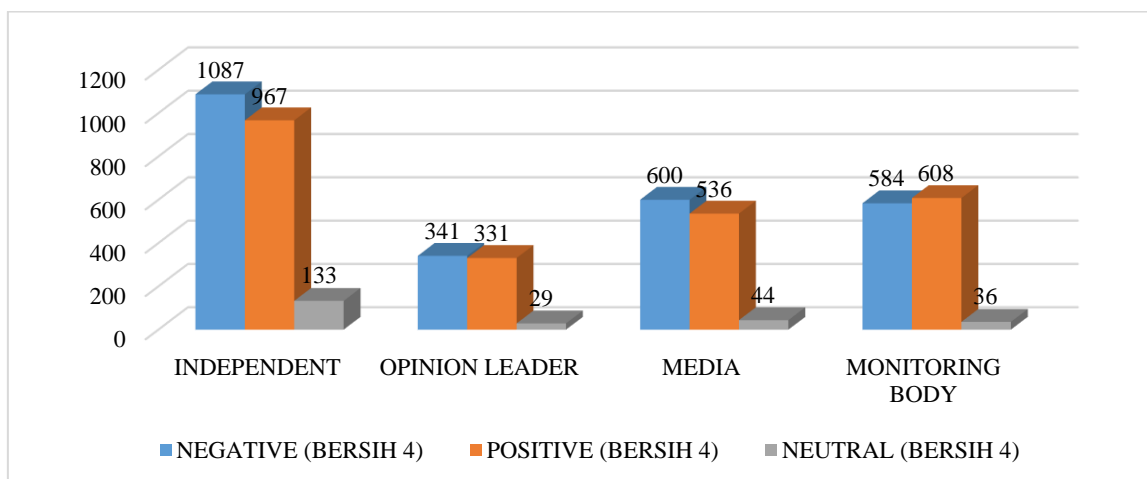
6. Findings

Overall, the total number of Facebook comments for 24 selected posts were 5,296 within 22nd to 31st of August 2015 of monitoring period. The sentiment dimensions divided into three where; negative opinion consisted of 49 per cent, positive comments total to 46 per cent and neutral comments contributed to 5 per cent in total.

Figure 01. Sentiment dimension distribution Bersih 4.0

It is clearly stated that the negative comments showed the biggest breakdown among the other sentiments. Therefore, it is evident that the negative sentiment is the dominant comments and could explain the emotion of the social media users with regards to the case study of Bersih 4.0 (H1).

Figure 2. Distribution of sentiment dimensions based on source of information for Bersih 4.0

The source of information contributed to the highest number of comments and played dominant role in public opinion formation and sentiment directions among the comments. Referring to figure 2, the independent portal media sources of information contributed to the highest number on comments as well as the highest number of negative. Other source of information while contributed to positive and neutral public opinion formation and sentiment directions of comments of Facebook users. It could also be inferred that the independent portal media portal played a significant role as the source of information during Bersih 4.0. It managed to create the largest number of negative sentiments directions in comparison to other sentiments. Thus, it is evident that the social media users tended to prefer the independentmedia portal as sources of information during Bersih 4.0 in comparison to the known media sources. Thus, the effect of independent source of information was greater than the other sources of information (H2 and H3).

Table 01. Chi square result for sources of information toward public opinion formation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.814[a]	6	.000
Likelihood Ratio	26.921	6	.000
Linear-by-Linear Association	15.191	1	.000
N of Valid Cases	5296		

For Table 1, the result from SPSS version 20 on non-parametric chi square test show that the value of $x^2 = 26.814$ was significant at $p > 0.05$, df = 6. Thus the null hypothesis is rejected. This showed that there is strong association between independent media portal source and public opinion formation during Bersih 4.0. Hence, the following hypothesis is accepted and there is a significant association between the sources of information towards the public opinion formation in the social media (H3).

7. Conclusion

The emergence of public opinion as a significant force in the political realm can be dated to the late 17th century. However, opinion had been regarded as having singular importance since far earlier. Medieval *fama publica* or *vox et fama communis* had great legal and social importance from the 12th and

13th centuries onward. Later, William Shakespeare called public opinion the 'mistress of success' and Blaise Pascal thought it was 'the queen of the world.' John Locke in his treatise *An Essay Concerning Human Understanding* considered that man was subject to three laws: the divine law, the civil law, and most importantly in Locke's judgement, the law of opinion or reputation. He regarded the latter as of the highest importance because dislike and *ill-opinion* force people to conform in their behaviour to social norms, however he didn't consider public opinion as a suitable influence for governments. There have been a variety of academic studies investigating whether or not public opinion is influenced by "influentials," or persons or source of information that have a significant effect on influencing opinion of the general public regarding any relevant issues. Many early studies have modeled the transfer of information from mass media sources to the general public as a "two-step" process. In this process, information from mass media and other far-reaching sources of information influences influentials, and influentials then influence the general public as opposed to the mass media directly influencing the public. This research revealed that the sources of information influences the formation of public opinion, identify the highest sentiment found in the comments of the selected Facebook postings on the trending issue studied and to investigate the source of information that is contributed to the highest comment count and sentiment involved, we found that the negative sentiment is the largest sentiments found among the comments generated by the social media users. It was also found that the comments from the independent portal media sources was the major contributor to the comments counts as well as negative sentiments was the main sentiment polarity found among the comments. Referring to this finding we could see that the independent portal media sources of information has the capability to embellish the negative formation of public opinion thus might be able to also associate with unhealthy situation which may threatening to the country. Monitoring agency should be able to identify the potential independent portal media sources of information that hit the engagement rate of 2% and above concerning its sentiment formation especially negative sentiment to avoid unhealthy situation from occur.

The chi-square test, the results showed the there is significant association between the sources of information toward the formation of public opinion in the social media at $p < 0.05$, $df = 6$. Therefore, all the results indicated that the tested hypothesis can be accepted as there is an association between the sources of information towards the public opinion formation in the social media (H4). In order to fully understand the effectiveness of the sources of information for both negative and positive vibes, further studies on the factors affecting the effectiveness of sources of information are warranted.

Independent media portal as the source of information played a different role compared to the conventional media or opinion leader sources of information during Bersih 4.0 rally in Malaysia. They were referred as the crowd who voice out their opinion through their postings, and eventually attract more social media users to voice out the words by commenting through the posting. They were also referred as those who don't have any licensed to publish any form of information just like conventional media. Monitoring independent portal media sources of information required more time and bigger scope as they can be anybody and even anonymous. Thus referring to the result, it is clearly show that, monitoring agency should pay more attention on independent portal sources of information if compared to other sources as it gave big impact on negative sentiments. However this study is only focusing on one case study that narrowing its concern on political issues. Further research on other cases study such as racism, social movement and

many more need to be done in order to observe the relevancy of monitoring independent portal sources of information among other sources of information in order to maintain the public order.

Acknowledgments

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