THE READINESS OF SOCIAL MEDIA BACK-END TO SUPPORT SURABAYA GOVERNMENT’S PUBLIC POLICY

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Abstract. This research aims to investigate the social media used in decision making. Social media has been used by the government to disseminate information to the public and to improve their services behavior. This research used a mixed method using Gephy Application to gain the network analysis to know the correlation of social media cross in each departments. The result has found that all departments of Surabaya government have been integrated with each other using one based system by Twitter, Instagram, and Facebook. Surabaya government always collected and resumed the data information every month, then the government can improve their performance and know what the citizen need or what happen in the real time. The main sub-actors for surabaya government in the social media are Sapawarga Surabaya account, Community Service, Public & Government Service, and the news company that supported the government activity on social media. This research is based on questioner survey and social media analysis so that we can know the analysis in two balancing performance, both their organizational behavior and responsiveness of the government. Furthermore, we can also know the effect of information that come from the government’s social media as part of their policy.

Keywords: Crowdsourcing, Social Media, Decision Making, Surabaya Government.

1. Introduction

In Indonesia, social media has been changing mass communication culture and has an impact on social and political life [1]. Social media is now being considered as a tool by many political elites and corporations to gain public sympathy and interest [2]. The existence of social media has created a digital community that lives and co-exists with the community. Through social media, information related to the well-being of the public will be disseminated in real time, thus the conveyance of ideas and aspirations of the people to the government will be much easier [3]. Social media is an internet-based platform built under the ideology and technology of Web 2.0, and its content comes from the user [4].

Social media has become a significant influence on global development to get an access and information which come from the citizen [5]. Based on the recent survey, approximately 75% of Indonesian population has social media account [6]. Hence, social media such as Facebook, Twitter, and Instagram made communication easier. With the government’s ICT, it has now become easier to communicate to the public and to get feedback in real time [7].

The technology system implemented in the government area has to be supervised to keep the balance between human resources capability and technological development to complete the gap between both without jeopardizing their performance through filtering information cross online system [8] [9]. This research is
intended to gain information on how social media such as Facebook, Twitter, and Instagram is being used by the Surabaya government to disseminate information to the public and to reach the decision making [10]. It was found that Surabaya government has been using social media since 2014 [9].

2. Basic Theory

Crowdsourcing is a method of acquiring good and services from a large, open, and highly-developed group of people [1]. Upon the rise of information technology (IT), the usage of crowdsourcing significantly increased and recognised as a source model emerging from IT. Hence, crowdsourcing is an online activity that is being participated in and utilised by individuals, institutions, nonprofit organisations, and companies [5]. On other hand, Figure 1 showed that social media can act as a tool to provide information for public inquiries [2]. As part of social media, crowdsourcing becomes a model to provide the ability to manage messages from a variety of unstructured public sources [10]. Besides, social media is a new channel of communication, especially in governmental organisations and the public is closely related to crowdsourcing and raises the opportunity to obtain real-time information via user-generated as a society [11]. The process of empowering crowdsourcing is as shown in figure 1.

![Crowdsourcing Process](image1.png)

Source: [5]

Figure 1. Crowdsourcing Process

As shown in figure 1, crowdsourcing is the tool that can be used by different organizations to make the public participate in their respective activities. Hence, the quality of crowdsourcing depends upon the type of business given by its provider and to the effect of its possible result. Therefore, it is affected by the level of accuracy and comprehensiveness of the data obtained [12]. Lenart- Gannsiniee, 2017 argue that crowdsourcing is a method of collecting ideas and other relevant information that may catch the interest of the public. The use of crowdsourcing will also forecast the growth of information and telecommunications traffic through the internet in the emerging future and become a temporary shadow of the dynamic growth of the next internet-based platform.

3. Method

This research used data network analysis using Gephy (version 0.9.2) software. This research was made using mixed-method approaches. Gephy software was used in processing and analyzing the data based on official account of Surabaya government on Facebook. On the other hand, centrality analysis gives a rough indication of the social power of a node based on how well they connect to each other network. A highly centralized network is dominated by one person who controls information flow. Data gathering was conducted since January until December 2017.
and compared with 2016. Since the social media platform receive a big data from the society, comprehensive lexical resources must be used to perform the analyses. The network embeds important information about the level of activity of the users, the centrality of the users, and the density and structure of the network [13]. Policy makers and social scientists will find the information useful for identifying the influential users, the strength of bonding among users, and the key links that contribute to information flows within the network [14].

4. Results

Social media can also be summarized with big data and crowdsourcing. The existing crowdsourcing on social media is the process of getting information with a big data in digital [15]. In some cases, crowdsourcing is used for the institution to distinguish data between negative information and positive information to get good advise or input from the citizens. Since 2014, Surabaya has made an effort to filter information through social media every month.

The research found that the level of education of employees in Surabaya government is also a determining factor for operating social media in each department. This is because of the leadership of Surabaya’s Mayor who is known as a mayor who is visionary and decisive in acting. Another fact is applied in the Department of Communication and Information Services has which formed and recruited specialized employees to manage everything about Information Technology related with the government, especially about e-government and social media in Surabaya's government. Novi implied this acknowledgment as the Head Section of Public Information that the role of Mayor in Surabaya's government had a very significant impact on increasing effectiveness and efficiency for the performance of employees in Surabaya’s government. Surabaya’s government make collaboration on social media for each department to open reform the transformation government that represents the needs of the organization to access new knowledge. Based on the Gephi netvizz, Surabaya government indeed made a collaborative social media on Facebook and Twitter.

Source: Primary data by Gephi software, 2018

Figure 2. Facebook Page Analysis by Gephi Application

According to figure 2, it shows the category of nodes on Surabaya’s government Facebook pages, they are Sapawarga Kota Surabaya, E100 (Community Service), Surabaya Intelligent Transportation System (SITS), Bangga Surabaya and Kabar Surabaya. The categories of social media’s account has a partition such as (Table 1):
Table 1. Facebook Analysis Partition by Gephi Application

| Category                        | Partition (%) | Name of Nodes                      |
|---------------------------------|---------------|------------------------------------|
| Government Organization         | 40            | SITS and Sapawarga kota Surabaya   |
| Community Service               | 20            | E100                               |
| Public & Government Service     | 20            | Bangga Surabaya                    |
| Media/News Company              | 20            | Kabar Surabaya                     |

Source: Primary data by gephi software, 2018

For the result in Facebook, analysis has found that government organization has 40% partition. Government organizations in Facebook pages are always discussed by the citizens by comments, likes and posts on the Facebook pages. Sapawarga Kota Surabaya has access and collaboration with SITS, E100, Bangga Surabaya and Kabar Surabaya. This is the reason why the partition of Government Organization is more significant than the other categories. Community Service is 20%, as shown in Table 1. Community service has an interaction with SITS and Sapawarga Kota Surabaya, and has not communicated with Bangga Surabaya and Kabar Surabaya. But in the Edges show that Sapawarga Kota Surabaya has a connection with SITS and SITS have an interaction just with E100 (Community Service).

The Public & Government Service has a 20% partition because Bangga Surabaya simply receives the information comes from Sapawarga Kota Surabaya. Same case with the media/news company, which is Kabar Surabaya page that has a 20%, because Kabar Surabaya simply receives information that comes from Sapawarga Kota Surabaya. There is such crowdsourcing information that has interaction on each facebook pages of Surabaya’s Government official. Sapawarga Kota Surabaya is managed directly by the Surabaya’s government under the auspices of Department of Information and Communication. Although this number is small, the gephi application is useful to know how much partition is happening on Surabaya’s Facebook pages.

![Public Complain Rate on Social Media](image)

Sources: Primary Data, 2018

**Figure 3. Public Complaint Rate on Social Media**

Figure 3 shows that there are still some insignificant improvements. However, it is interesting that in 2016, the Civil Service Police Unit occupied the fifth position in the recapitulation of the most significant public complaints, and the Civil Service Police Unit had carried out bureaucratic reforms, which provided a special team to handle social media. All data will be entered into the @SapawargaSby account...
whether on Twitter or Facebook to be forwarded and followed up at the relevant department.

5. Conclusion

According to the results, it can be seen that Objective Information Technology, Management, and Human Resources are essential determinants in predicting the management and grouping of information obtained through social media owned by the Surabaya City Government. On the other hand, each department of Surabaya’s government has made efforts to be able to carry out the collectivity of information received through social media where this will also help the government's performance in providing services to the community. Although some researchers say that many government organizations do not explicitly use the valid information, they are increasingly attempting to use outsource ideas and practice to encourage corporate profit solving in operations with external stakeholders [16]. Hence, the study introduces a model that data gathering for the report of Surabaya's government in the field of social media response. Several points must be stressed out regarding how the research was carried out. These points refer to the limitations that mean that the results must be understood with caution and prudence. First, the determination of the sample size was done through purposive sampling, so the application of results should be made with prudence.

The result could then be safely generalized to the whole population. Second, the constructs used for the research model were chosen due to their prominence in the literature. Future researchers may consider investigating other variables and developing constructs which are appropriate in the government organization context. Future researchers could frame other actions deemed to be suitable for the constructs. Third, this study made use of a simple linear regression model in hypothesizing the relationship of the constructs and therefore future research may develop research models that would explore some other nuances in the constructs’ relationships. Strategic planning by each organization or agency to draw up short-term and long-term development plans should be consistently accomplished. Monitoring and evaluation of the plans’ implementation should likewise be done.

References

[1] Brabham, Daren , "Crowdsourcing as a model for problem solving: An introduction and cases," Convergence14.1: 75-90, pp. 75-90, 2008.
[2] Chun, Soon, et al., "Government 2.0: Making connections between citizens, data and governmen," Information Policy, vol. 15, no. 1, pp. 1-9, 2010.
[3] Luhmann, N, "Organization Autopoietic Organization Theory: Social Systems Perspectiv," Norway: Copenhagen Business School Press, 2013.
[4] M. Haenlein and A. M. Kaplan, "Users of the world, unite! The challenges and opportunities of Social Media," Business horizons, vol. 53, no. 1, pp. 59-68, 2010.
[5] Gao, Huiji, et al, "Harnessing the crowdsourcing power of social media for disaster relief," Arizona State Univ Tempe, 2011.
[6] A. Kholid, R. Husein and D. Mutiarin, ”"The Influence of Social Media Towards Student Political Participation During the 2014 Indonesian Presidential Election," Jurnal Studi Pemerintahan, vol. 6, no. 2, pp. 246-264, 2015.
[7] Kieser, Alfred, and Lars Leiner, "Why the rigour–relevance gap in management research is unbridgeable," *Journal of Management Studies*, vol. 46, no. 3, pp. 516-533, 2009.

[8] R. Lenart-Gansniec, "Factors Influencing Decisions about Crowdsourcing in the Public Sector: A Literature Review," *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensi*, vol. 65, no. 6, pp. 1997-2005, 2017.

[9] Lukyanenko, Roman, Jeffrey Parsons, and Yolanda F. Wiersm, ""The IQ of the crowd: understanding and improving information quality in structured user-generated content," *Information Systems Research*, vol. 25, no. 4, pp. 669-689, 2014.

[10] Teng S. L. E, "The Entropy Theory And Information Granularity In Information Syste," *Computer Engineering A Science*, vol. 34, no. 4, pp. 94-101, 2012.

[11] Estellés-Arolas, Enrique, and Fernando González-Ladrón-De-Guevara, "Towards an integrated crowdsourcing definitio," *Journal of Information science*, vol. 38, no. 2, pp. 189-200, 2012.

[12] Kavanaugh, Andrea L., et al, "Social media use by government: From the routine to the critical," *Government Information Quarterly*, vol. 29, no. 4, pp. 480-491, 2012.

[13] Klievink, Bram, and Marijn Jansse, ""Realizing joined-up government—Dynamic capabilities and stage models for transformatio," *Government Information Quarterly*, vol. 26, no. 2, pp. 275-284, 2009.

[14] Wang, Fei-Yue, et al., "Social computing: From social informatics to social intelligence," *IEEE Intelligent systems*, vol. 22, no. 2, 2007.

[15] Vrients, A. D., "Organizations, Social System Conducting Experiment," *Springer*, 2009.

[16] Y. X. Zhong, "Principles Of Information Conversions-An Integrated Theory Of Information, Knowledge And Intelligence," *Chinese Science Bulletin*, vol. 58, no. 14, 2013.

[17] DePaula, Nic, Ersin Dincelli, and Teresa M. Harriso, ""Toward a typology of government social media communication: Democratic goals, symbolic acts and self-presentation," *Government Information Quarterly*, vol. 35, no. 1, pp. 98-108, 2018.

[18] Kietzmann, Jan H., et al, "Social media? Get serious! Understanding the functional building blocks of social media," *Business horizons*, vol. 54, no. 3, pp. 241-251, 2011.