THE CROWDSOURCING MODEL OF SOCIAL MEDIA IN SURABAYA’S MUNICIPALITY

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Abstract

Purpose: Social media has been used by government to disseminate information to the public. As we know that the transformation of organization have a several aspect which are related within values, behaviour knowledge, organization culture and mindset of the employee itself. This research aim to investigate the social media information through out the public policy.

Methodology: The research question is how the government can can be able for using social media to know the main point in the data that crowded. This research using mix method to gathering the data analysis within quantitative and qualitative method. Gephy is the one of application that was using in this research for analysing the integrated system each department by social media especially in Facebook.

Main Findings: The research result is the part of facebook analysis has found that government organization have a 40%. For the partition of Community Service is 20%. For the Public & Government Service has a 20% because Bangga Surabaya just received the information come from Sapawarga Kota Surabaya. As well as the Media/News Company namely with Kabar Surabaya pages that has a 20%.

Implications: The conclusion is on the one hand, the subjective government of Surabaya 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.

Novelty: this research describes about the government practice and implementation on social media to increase their performance and make social media beneficially as the new tool to communicate with public.

Keywords: Crowdsourcing Model, Integrated System, Social Media, Facebook, Surabaya’s Government.

INTRODUCTION

Nowadays, the social media in public organization has become a new tool used by the government to be able for disseminate information for the citizen. The dissemination of this information allows information related to the issues in local, national and international levels that move freely through the internet platform. Social media has been give influence to the change of mass communication culture in Indonesia (Brabham, 2008). Social media is considered as a tool with the masses because it will be loses from the interests of the political elite and some corporations in seeking the information (Rahmawati, 2013). The existences of social media have created a digital community that lives and coexists with the community it self. With this social media that will be generate interaction and allow the dissemination of information, the creation of ideas and the formation of public opinions related to society and form of the government.

Social media is the group based on internet platform that build the new ideology and technology by the applications from Web 2.0. Generally, social media also provide the creation and content to the user (Haelein, 2010). Web 2.0 describe about the prototype of the internet to make user more interactive and participate based on the URL, CSS and also the application in internet. The user of social media call by “User Generated Content”. Organization for Economic Cooperation and Development (OECD) determine the three (3) criteria that classified as the “user generated” which are: first, the user generated should be on the public website access or on an existing social network to select groups. Second, the user generated requires a minimum amount of creative effort; and third, the user generated is made outside of the routine and practice of an expert (OECD, Participative Web and User-Created Content: Website 2.0, and Social Networking18 (2007) [hereinafter OECD Report] (Haelein, 2010).

The government needed the balancing between technology and human resources owned as the one way to reduce the level of gaps that occur in the middle information of technology (Regina & Ganssienic, 2017). Information in social media will be filtered as well which one part of negative or positive content and we called it with crowdsourcing. The existing of crowdsourcing in social media is the process of getting information with a big data in digital. The case of this research is social media applied in Surabaya Government City as the one representative of Indonesia that has been applied the Twitter, Instagram and Facebook to reach the information from citizen. Thus are Twitter and Instagram are used by Surabaya government city to execute public service to the citizen to give the information and get the information come from the citizen itself. Surabaya government city has been used social media last 5 years ago as the one tool of digitalization (Esterina, 2018).
This research as to know that the crowdsourcing is an importance things in the part of social media. Especially, the local government needed more the great resources, skills and the competence to increase a services more effectively to the citizens.

**RESEARCH METHOD**

**Crowdsourcing Model**

Crowdsourcing is a source model whereby an individual or organization acquires goods and services, and also includes ideas and financial resources, from a large, open and highly developed group of Internet users (Brabham, 2008). Crowdsourcing actually existed before the IT with the offline era, but in today's rapidly evolving era, crowdsourcing is becoming increasingly recognized by a source model emerging from IT. Some researchers also say that crowdsourcing is an online activity that gives rise to the participation of individuals, institutions, nonprofit organizations or companies (Estelles-Arolas & Gonzalez-Ladron, 2012). The process of empowering crowdsourcing as shown below:

![Crowdsourcing Process](image)

Figure 1. Crowdsourcing Process [Source: (Gao & Goolsby, 2011)]

By understanding the flow, it will be easy to know how the use of the Internet with social media tools to provide and respond to the response of the community on the circumstances that are happening. In other words, this crowdsourcing model provides the ability to manage messages from a variety of unstructured public sources (Gao & Goolsby, 2011). Social media, which is a new channel of communication, especially in government organizations and the community is closely related to crowdsourcing and raises the opportunity to obtain real time information via user generated as a society (F.-Y Wang et al., 2007). Here are the factors that influence making decisions by using crowdsourcing:

<table>
<thead>
<tr>
<th>Level</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task</td>
<td>Type of Task</td>
</tr>
<tr>
<td></td>
<td>Interactions with the online community</td>
</tr>
<tr>
<td></td>
<td>Openness</td>
</tr>
<tr>
<td></td>
<td>Confidential Information</td>
</tr>
<tr>
<td>People</td>
<td>Number of Employees</td>
</tr>
<tr>
<td></td>
<td>Resources</td>
</tr>
<tr>
<td>Management</td>
<td>Cost-Saving</td>
</tr>
<tr>
<td></td>
<td>Coordination</td>
</tr>
<tr>
<td>Surroundings</td>
<td>Platform Accessibility</td>
</tr>
</tbody>
</table>

Table 1. The Factors of Impacting Making of a Decision on Applying Crowdsourcing

The use of crowdsourcing has its own appeal by the government because it has offered a competitive advantage with knowledge from outside the organization. However, attention needs to be made in the presence of crowdsourcing as it has been shown in the table of factors impacting the making of a decision on applying crowdsourcing.

**Fountain Technology Adopted**

The key of a social system is a communication, which consists of information, speech, and understanding. Luhmann (2013) defines the social system as a maintenance system on the main boundary. There are three components in communication namely: information, speech and understanding. Where these three components each has its own concept. Information is defined as an option of a possible repertoire. Each communication chooses what will be communicated from everything that can be communicated. By utterance, it refers to the form and reason of a communication: how and why something can be said (Luhmann, 2003).
This new paradigm makes government more transparent and accountable because with the existence of digitalization by government by using social media this will put forward the democracy system which many expected by society (Chun, Shulman, Randoval, & Hovy, 2010). Here is a shift from the power of government transformation using social media (Chun, Shulman, Randoval, & Hovy, 2010).

Table 2. Comparison of Traditional Government and Digital Government

<table>
<thead>
<tr>
<th>Traditional Government</th>
<th>Digital Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Provider (Information Sink)</td>
<td>Information Creation (Creation)</td>
</tr>
<tr>
<td>Service Provider Model</td>
<td>Models Require Services</td>
</tr>
<tr>
<td>Policy Enforcement Model</td>
<td>Policy and Negotiation Model</td>
</tr>
<tr>
<td>Decision Making Model/Governance Body</td>
<td>Joint Government</td>
</tr>
</tbody>
</table>

Source: (Chun, Shulman, Randoval, & Hovy, 2010)

Social media have differences with conventional media. First, social media enables users to interact freely as they should interact directly in the real world. Then, the spread of content interaction that occurs in social media is very wide because it operates using the Internet network. Secondly, the real interaction in the real world, interaction in social media can only occur when its users participate actively (Kholid, Husein, Mutiarin, & E.R, 2015). This social existence is a significant innovation in the concept of cyber democracy. The use of social media is perceived to reach the level of efficiency in the dissemination of information as well as in the process of real-time communication among its users which is an important point in providing a forum for the community to participate widely.

Notes: influence

Affect

Figure 2. Fountain’s Technology Enactment Model

This fountain's technology enactment model will affect the organization's form and institutional arrangements that have been influenced by technology. This fontain model appropriately used in the form of organization that at this time many rampant using technology in improving performance and work owned. Some components that need to be considered in accordance with fountain technology enactment table.

Objective Information Technology

This technology is a series of systems used in IT, some of which need to be considered is the hardware, software and the ability of managers and web or telecommunications system. Objectives like this are the main components in public organizations that have been transformed using IT in the form of managerial.

Enacted Technologies

This prevailing technology refers to the use and perception of technology specifically to regulate the provision of IT services that exist within public organizations. Some of the indicators that occur in enacted technology are also used in outsourcing relationships or customizable functions, such as those developed by IT service providers. The current example is the use of electronic procurement services that connect public organizations with vendors or the private sector.

Organizational Factors

In the organizational factors that occur here led to the existence of trust, knowledge and face-to-face meetings. This organizational factor is built on the cognitive and effective components of the interconnected parties. In this case, an
organizational form will also be influenced by the active participation of both parties, whether corporate or public organization.

**Institutional Arrangement**

Institutional arrangement is a mechanism in integrating social or normative values. In the context of aligning the existence of basic assumptions raised jointly between public organizations and service providers. Existing laws and regulations refer to the formal arrangements made by the government in providing the relevant legal framework.

**Outcomes**

The results referred to in this context refers to the performance of public organizations capable of generating the value of efficiency that occurs in the application of this fountain model.

**METHODOLOGY**

The framework of design in this study focuses on two things: crowdsourcing variable as independent variable of fountain on IT as dependent variable. The figure below is describe about this research framework model, how the research will do:

![Figure 3. Research Model](https://doi.org/10.18510/ijmier.2018.423)

This technique analysis of this research made use of mixed method approaches. All variables were operationalized with its resective indicators which were utilized as bases in making the questionnaire and interview guide. Primary data were collected cross sectional survey conducted with crowdsourcing in government’s social media, Surabaya’s Government city. Data gathered from facebook were analyzed using Gephy (version 0.9.2). Gephy is one of the tools that provide user for knowing the analysis data from social media or to gather the data from big data. After gather the data, the next step is analysis using interview deepth to cross the result and the data.

**RESULT AND DISCUSSION**

In the organizational factors that occur here led to the existence of trust, knowledge and face-to-face meetings. This organizational factor is built on the cognitive and effective components of the interconnected parties. In this case, an organizational form will also be influenced by the active participation of both parties, whether corporate or public organization.

Focus of this research in social media by government office scattered in 15 agencies in surabaya city. This research in order to know how are 15 agencies can work together for integrating social media system in surabaya city. In each agencies have a social media and have an admin to working the social media system. But all the agencies who have a social media can be conected under by Department of Information and Communication service, especially in the Sub-department of Information and Public Communication for make it simple to integrated. But in other hand, its not working yet as well because the integrating system for social media still used a manually working by the employee who handle it, not by system yet (Rini, 2018). This is also as an effort to realize the one of mission of the surabaya city under the leadership of Tri Rismaharini, which is to realize integrated spatial planning and pay attention to the carrying capacity of the city.

Nowadays, social media has opened up unprecedented new possibilities of engaging the public in government office. Many organizations are adopting social media systems and expect to gain improved employee engagement, internal communication and the formation of internal and external communities for more effective business. Also a great portion of government’s use of social media is for symbolic and presentational purposes. Social media are not only tools for democratic transparency and citizen participation, but also tools for self-presentation, the exchange of symbolic gestures and also the marketing of products and services (De Paula, Dincelli, & Harrison, 2018). One of the most visible uses in the using of social media in surabaya is democratic transparency and citizen participation to connected the products and
services between government and citizens. So, between government and citizens have a good relationship to realizing democracy transparency through social media.

The one of the results by this research found that the level of employees’s education in Surabaya city is also a determining factor for operating social media in each department. This has been carried out since the leadership of Surabaya’s mayor who was known as a mayor who is visionary and decisive in acting. Another facts is applied in Department of Communication and Information Services has formed and recruited specialized employees to manage all about Information Technology that related with government especially about e-government and social media in surabaya’s government. This acknowledgment was implied by Novi as the Head Section of Public Information that the role of mayor in surabaya’s government had a very affected and impacted on increasing effectiveness and efficiency for performance of employees in Surabaya’s Government. The followong below is description of interview part with head section of public information:


Surabaya’s government make a collaboration on social media for each departments in order to open innovation that represents the needs of organization to access new knowledge. Based on the proven by Gephi netvizz, show that surabaya’s government truly make a collaborative social media on Facebook and Twitter. First, on Facebook page of Surabaya’s government namely Sapawarga Surabaya show like in graph below.
Based on the figure above show the Categories of nodes on surabaya’s government facebook page which is Sapawarga Kota Surabaya, E100 (Community Service), Surabaya Intelligent Transportation System (SITS), Bangga Surabaya and Kabar Surabaya. Each of the categories have a partition on the social media as below:

<table>
<thead>
<tr>
<th>Category</th>
<th>Partition (%)</th>
<th>Name of Nodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Organization</td>
<td>40</td>
<td>SITS and Sapawarga Kota Surabaya</td>
</tr>
<tr>
<td>Community Service</td>
<td>20</td>
<td>E100</td>
</tr>
<tr>
<td>Public &amp; Government Service</td>
<td>20</td>
<td>Bangga Surabaya</td>
</tr>
<tr>
<td>Media/News Company</td>
<td>20</td>
<td>Kabar Surabaya</td>
</tr>
</tbody>
</table>

For the result in facebook analysis has found that government organization have a 40% partition. Government organization in facebook pages always discussed by the citizens who always send a comment, like and post on the facebook pages. Sapawarga Kota Surabaya have an access and collaboration with SITS, E100, Bangga Surabaya and Kabar Surabaya, its the reason why the partition of Government Organization is bigger than other category. For the partition of Community Service is 20% such as figure 5.1 show that community service has an interaction with SITS and Sapawarga Kota Surabaya and have not an interaction with Bangga Surabaya and/or Kabar Surabaya. But in the Edges show that Sapawarga Kota Surabaya have an interaction with SITS and SITS just have an interaction just for E100 (Community Service).

For the Public & Government Service has a 20% partition because Bangga Surabaya just received the information come from Sapawarga Kota Surabaya. As well as the Media/News Company namely with Kabar Surabaya pages that has a 20% partition because Kabar Surabaya just received the information come from Sapawarga Kota Surabaya. There are such a crowdsourcing information that have an 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 just a little, but the gephi application is very meaningful to know how much partition is happening on Surabaya’s facebook pages.

Sarmandi as an admin social media in Satpol PP(civil service police Unit) told that many information everyday come with a reasons such as demonstration, riot, homeless and many more related to Satpol PP. Not infrequently there are also people who send fake news. Its make social media as the new source for the generation of new ideas which contribute to organizational learning and its used to share, reuse, recombine and accumulate knowledge to achieve external and internal innovation. The following below is the conversation with Sarmandi that happened:

“dengan adanya social media ini sebetulnya banyak membantu sekali ya mbak karena kita akan mudah untuk menjaring mana-mana hal yang harus kami lakukan dilapangan. Dulu kan agak susah ya karena kita harus muter-muter dulu untuk menemukan kasus dan gak sering juga bisa tertangkap. Misalnya ada keributan di titik A, kalau dulu kan ya
pas misal baru perjalanan kesana nanti udah pada bubar. Kalau sekarang kan meskipun kita tetep ke lokasi TKP Cuma info itu ada yang ngeshare di social media lalu biasanya ada foto yang dilampirkan nah itu kan akan memudahkan kita juga siapa siapa saja yang disitu, siapa tau dia jadi korban atau dia malah tersangka keributan disitu. Lebih sangat membantu lah mbak adanya sosial media. Kita juga mudah share ke masyarakat, kita juga mudah mendapatkan informasi dari masyarakat juga” (Interview with Sarmandi, admin of Satpol PP; October 10, 2018).

Figure 6. Top Fiveth Institutions Got an assessment from Citizen (Source: the data from Dinkominfo, 2017)

The figure above shows a comparison of the top 5 departments that get complaints from citizen in Surabaya in whole 2017. In the year of 2017, the department most frequent complaints from the citizen of surabaya city are the Public Works Agency of Highways and the city of Surabaya which reached 410 complaints.

Although the surabaya’s government still have not a new specify technology to filter the information in social media. But in this new era, have so many platform that can be used to drag and filter the information which come. The crowd information which come in social media name with crowdsourcing. Crowdsourcing information in Surabaya’s government build the collaborative initiative as a coordination and collaboration mechanism. The collaboration mechanism that occurs in the surabaya government is to solve the problem in the citizen’s life. The government performance depends on the firms social or the trust worthy relations with the society through government identity and reputation. Within the social media shapes the firms brand and reputation of surabaya’s government. With the proliferation of the internet access and mobile technologies, social media and crowdsourcing offer a wide range of possibilities for surabaya’s government. As the surabaya’s mayor, Tri Rismaharini have a big power for improving surabaya’s administration with the right leadership and management, and her innovation can lead to successful, progressive outcomes, increased profits and even inspire employees to take the initiative and innovate within their roles (Rini, Department of Information and Communication of Surabaya’s Government, 2018). The following below is the conversation with Rini that happened:

“sebetulnya semua ini tidak hanya datang begitu saja mbak, sejak bu risma menjadi walikota banyak sekali perubahan-perubahan yang terjadi misalnya aja dimulai dari management birokrasi, adanya perbaikan gedung dan pengefektifan dan efisiensian pegawai sampai masuknya teknologi. Tidak sedikit juga pegawai yang hampir kewalahan sama kemauan ibu, khusus nya Diskominfo ini mbak. Sekarang hampir semua sosial media punya admin masing-masing yang pegang. Apalagi semuanya sekarang sudah harus berkembang dari jaman tidak menggunakan teknologi sampai semua sekarang ini menggunakan teknologi seperti adanya absen online, surat online, penilaian kinerja juga online dan saat rapat juga surat undangannya dalam bentuk Online. Beberapa pegawai yang sudah tua usianya juga nggak jarang ada yang bisa, hampir semua yang kesulitan. Tapi ya dari diskominfo yang akhirnya memberikan sosialisasi pelatihan. Segala sesuatu yang memang dirasa Ibu Risma kurang beres itu langsung dieksekusi sendiri mbak, sampai datang ke setiap instansi pun dilakukan” (Interview With Rini, admin of Sapawarga Surabaya, October 10, 2018).

On the facts, to make a new ideas and improvement its not easy need a big power to change the better future especially on bureaucracy. The improvement of the government also need the power of their leader, its not happening in many cities in Indonesia, Surabaya is the one of not much city that has been improved their bureaucracy management (Bloch & Bugge, 2013).

The institutional arrangements carried out by the Surabaya’s Government city in using social media have achieved user integration, where dinkominfo has a virtual network in the Whatsapp application which is intended as a means and forum for discussion and coordination between official admin in each government agency. The following are the results of discussions obtained through dinkominfo related to coordinating complaints services, reporting and information from the
public through social media whose purpose is to find out what is needed by the community and what happens to the environment in the city of Surabaya.

According to Dorward and Kydd (2005) explain that the aims of institutional arrangement is not about minimizing cost transaction but for minimizing the risk of transaction itself. Also, for understanding the vision perception for each department in the organization especially for Surabaya’s Government city (Dorward, Kydd, & Poulton, 2005). Although indeed according to the results of the hypothesis, the institutional arrangement have not a significant strength in crowdsourcing arrangements that appear on social media.

**IMPLICATION RESEARCH**

According to the result, it can be seen that Task, Management and Human Resources are important determinants in predicting the management and grouping of information obtained through social media owned by the Surabaya city government. Furthermore, the influence of Objective Information Technology (OT) was also revealed in this study. OT is a facility owned by the government in its efforts to support launching and grouping information.

On the one hand, the subjective government of Surabaya 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 outsourcing ideas and practices to encourage collective profit solving in operations with external stakeholders (Wang, Mao, Wang, Rae, & Shaw, 2018). Hence, the study introduces a model that data gathering for report of surabaya’s government city in field of social media respond.

**CONCLUSION**

The study shows that in the some cases, crowdsourcing be used for the institution to filtering the information in negative information and positive information to get a good advise or input from the citizen. This is evidenced by the dissemination of information through the department of information and communication website related to the analysis of information through social media and classified based on the type of information, related with the institutions, related social media and also the amount obtained from crowdsourcing. In the January period up to December 2017, the most
The media use of public complaints is through the Website (e-wadul), which amounts to 1427 pieces and social media (Twitter), which amounts to 890 pieces.

The three of variables below has mostly positive and on all three variables it has a range that is quite high from each average of variables. The greater of standard deviation value, the sample data will increasingly spread (vary) from the average. The result of model 2 is argue that subjective information technology affected in social media.

In the Surabaya’s Government, an increase in collaborative activity is being driven by many factors. Three aspects of technology are important for Department of Information and Communication. The hardware, software and ability of user is considering for the system who applied in government agencies. As we know, the aims of surabaya’s government is to increasing the good government in their office to the citizen.

The one of the results by this research found that the level of employee’s education in Surabaya city is also a determining factor for operating social media in each department. This has been carried out since the leadership of Surabayas’s mayor who was known as a mayor who is visionary and decisive in acting. Although the surabaya’s government still have not a new specific technology to filter the information in social media. But in this new era, have so many platform that can be used to drag and filter the information which come. Crowdsourcing information in Surabaya’s government build the collaborative initiative as a coordination and collaboration mechanism.

At the aggregate level, Besides, the result of model 3 is argue that crowdsourcing moderate the organizational form consist on social media. The Surabaya’s Government city has integrated and coordinated between systems and their organization in managing information from the citizens set by Department of information and communication under Whatssap Application. This part is appealing because the government willingness to access and reach what is informed, complained of and reported directly by the public in real time. Although indeed in managing information through social media it has not reached a high level of system capability.

Although indeed according to the results of the hypothesis, the institutional arrangement have not a significant strength in crowdsourcing arrangements that appear on social media.

Based on the results that appear in the hypothesis this research is related to the output obtained from the use of social media. The hypothesis shows the value that the existence of information obtained through social media does not have the power of value in influencing or making public policy. It's just that with the arrangement of crowdsourcing and carried out by the city of Surabaya it has an impact both to be used as advice and input in the policy making process even though what is issued is not in the form of policy but rather a suggestion, recommendation and also material in the policy formation process. Hence, the output information in the social media is not commonly applied for the policy making, it refer for the public services and increase a performance of each department to able provide public service.

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