

## **Measuring The Effectiveness Of Government Communication On Bandung Smart City (The Study On @Ridwankamil Twitter Account During The Period Of 16 September 2013 To 31 July 2015)**

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**Abstract:** *The fruitfulness of Smart City implementation influenced by the active role of the leader especially in establishing communication with the surrounding society. This study intention was to describe the performance of Ridwan Kamil in communicating Bandung Smart City programs. The method employed in this study was qualitative-descriptive method by utilizing the data of Ridwan Kamil's personal twitter account (@RidwanKamil) during the period of 16 September to 31 July 2015. As the result, this study manage to revealed that, based on communication intensity, the effort of Ridwan Kamil spent toward each area of Bandung Smart City (BSC) were unevenly distributed. The findings provide important insights toward the performance of Ridwan Kamil on obtaining support of Bandung citizen toward Bandung Smart City implementation.*

**Keywords -** *Smart City, Twitter, Leaders, Communication*

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### **I. INTRODUCTION**

Bandung City is in the middle of Smart City implementation under the leadership of It's Mayor, Ridwan Kamil. Bandung was a city that originally designed for only several hundreds of thousand citizen. However, in 2012, the citizen of Bandung has reached 2 million people [17]. This situation brought numerous issues to the citizen of Bandung. Since the beginning of His tenure - 12 days after being appointed as The Mayor of Bandung - Ridwan Kamil managed to address 300 issues that must be solved in Bandung. Those issues were expected to be solved by using Smart City programs [16].

As the initiator of Smart City concept, IBM asserted that the existence a strong leader is the key for the success of Smart City initiatives. The leader must create a sense of urgency, publicize achievements, and aggressively expand the development. Therefore, the leadership of Ridwan Kamil was a deciding factor in achieving Bandung Smart City (BSC). One of the innovation that is being pursued by Ridwan Kamil was the utilization of Twitter as a medium to establish communication with the citizen of Bandung [11]. During the period of November 2012 to July 2015, the average number of daily and monthly tweet of @RidwanKamil (personal Twitter account of Ridwan Kamil) is 15 and 417 consecutively. Until 15 September 2015, @RidwanKamil had 1.202.455 followers, 38.315 tweets, following 2.653 twitter accounts, and 20.040 accounts that were selected as favorite. The importance of leadership role held by Ridwan Kamil in supporting the success of BSC Program and the utility of Twitter as one of the primary communication media were an interesting phenomenon that was worthy to be further researched.

### **II. LITERRATURE REVIEW**

#### **2.1 Bandung Smart City (BSC)**

Smart City can be described as a concept of the development, application, and implementation of technology for a geographical territory, especially in urban regions, as a complex interaction between various systems exist within that territory. Smart City encompasses 3 primary dimensions: people, technology, and community [12]. One important aspect of Smart City emphasizes on the planning and controlling of the entire city through the utilization of information and communication technology (ICT), a digital system, that enable us to gather and retrieve data from heterogeneous sources such as a sewer system, parking lots, security cameras, and traffic lights [5].

For Bandung City, Ridwan Kamil initiated several programs as the implementation of the concept of smart city. Those programs are:

- a. SAKIP or governmental institutions performance accountability system was an information system that built to report the performance of governmental institutions. This program was initiated in order to enhance the performance and accountability of governmental institutions. In this information system, the citizen assumed an active monitoring role [18].
- b. Sabilulungan, or called as *gotong royong*, initiated by the municipal government of Bandung City to facilitate transparency in the implementation of social aid program that achieved through online media. The whole process of Sabilulungan could be monitored by the citizen [19].
- c. LAPOR System is the first social media application in Indonesia which involving public participation in two way communication, so in this application the public can interact with government directly with the principle of simple and unified supervision of construction [20].
- d. SIP Bandung Juara was an information system to facilitate public participation in performance monitoring of service encounter that took place in district or sub-district level [21].
- e. Online permit (HAY.U) was a public service system that supports permit issuance process [22]
- f. Smart Digital Class was facilities that was sponsored by PT. Telkomsel. It is consist of interactive touchscreen 88 inch, smart teacher's desk, library within school server, and internet school area (wifi zone). Smart Digital Class was initiated in SMAN 3 Bandung as one of the most prominent high school in Bandung [23].
- g. Smart Parking System, parking system that utilized automated machine and was located on Braga Street as one of the most famous tourist destination in Bandung [23].
- h. Command Center was a city surveillance system that connected to CCTV and GPS and scattered on various critical points in Bandung City [23].
- i. City Apps was planned to be implemented in order to manage the city and governance that can be accessed online via a smart phone or computer. At time this article was written, at least there were 300 computer applications that related to BSC have been developed [23].
- j. Free Wifi Bandung Juara was a program that was created as a result of cooperation of Telkom and Bandung Municipal Government. In this program, there were 5000 free wifi access point built on various public facilities such as mosques, city gardens, and public schools [23].
- k. Bandung Teknopolis was an industrial region that were managed by employing technology and has been built on East Bandung [23].
- l. Bandung Integrated Resources Management System (BIRMS) was a system that was developed to manage government resources in integrated fashion in order to support financial accountability. Some applications of BIRMS were e-Project, e-Planning, e-Procurement, e-Rup, e-Contract, e-Swakelola (independent management), e-Progress, e-Performance, and e-Asset [24].
- m. E-Puskesmas was an information system that was developed to manage health services for the citizen of Bandung. It was the result of the cooperation of Public Health Office and PT. Telkom Indonesia [25].
- n. Cloud Computing E-Kelurahan was an application that was connected the mayor's office with all government departments and agencies, 30 districts and 151 villages in Bandung [23].

## **2.2 Leadership in Public Sector**

IBM, as the company that initiate the concept of Smart City asserted that a strong leader is the key toward the success of Smart City. A leader must have a vision as a winne and able to break trough obstacles in every element of the city such as business organisations, public institution, local interest groups, religion leaders, businessmen, and social workers [13]. There were four theories of leadership in public sector: Grassroots Leadership, Servant Leadership, Collective Leadership, and Collaborative Leadership [11].

## **2.3 The Role of Government Communication**

The role of communication in leadership are of paramount importance. In brief, communication can be defined as is the transfer of meaning in order to influence the behavior of others [7]. Indeed, several literatures indicate strong correlation between communication and effective leadership. For example, communication have been identified as one of the most important skill in demonstrating effective leadership [14] and subsequently influence organizational performance [26].

Providing communication to the public was also perceived as one of the responsibility of the government [1]. Moreover, the governments were expected to realize the importance of communication since weak communication will only produce negative consequences to their effective functioning [7]. According to Barrett the importance of government communication rest on three rationale [7]:

- 1) To obtain support and legitimacy for government programs.
- 2) To identify and respond toward citizen needs.
- 3) To explain government stewardship and to provide mechanism to maintain government accountability.

From the above elucidation, it is safe to remark that communication convey positive influence toward the achievement of organizational goals and the government is not an exception.

#### **2.4 Social Media, Governance, and Society**

The adoption of social media by the Government was intended to reach the society and other stakeholders, to share vital information among various government institutions, to increase society participation in decision making or voting, and to increase transparency in governance [6]. In governance, media was perceived to be able to change the power relationship between society and organisations to achieve a more open and transparent government; new media possess the potency to change a governance system in cities as well as nations [3]

#### **2.5 Participation and Society Cooperation**

Society participation and cooperation described in four levels: communication, consultation, engagement, and collaboration [4]:

- a. Information, information exchange is a vital requirement that guarantees society participation.
- b. Consultation, serves as an information processing device and an institution in which the process of information infusion take place.
- c. Engagement, serves as an information processing device and in several cases acted as a tool of shared decision making.
- d. Collaboration, a process to build a capacity to facilitate cooperation between groups and policy implementation.

### **III. THE METHODOLOGY**

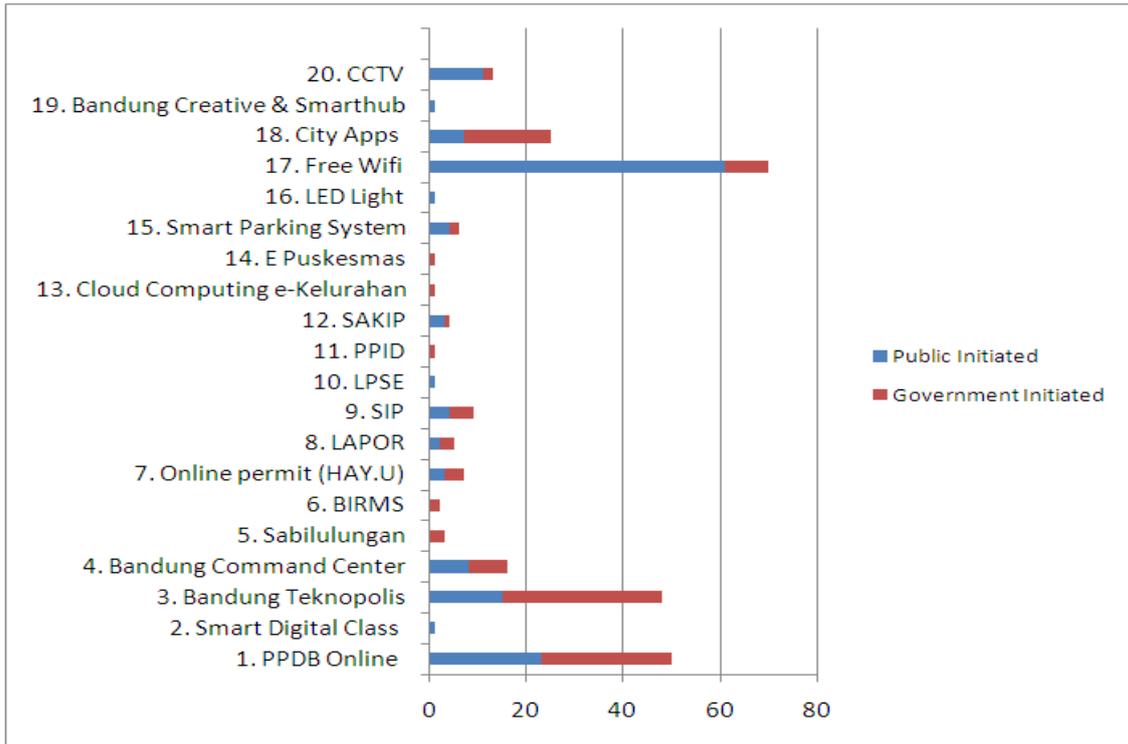
This study was conducted by using qualitative-descriptive method, a research method that aims to explain, transform, interpret, and describe meanings, not frequency, of social phenomenon that take place in natural setting [9]). The object of this research is personal Twitter account of Ridwan Kamil (@RidwanKamil). The data used were the relevant tweets of @RidwanKamil that discussed Bandung Smart City programs during the period of 16 September 2013 to 31 July 2015. Furthermore, the tweets were analyzed by using qualitative content analysis method [10] to produce detailed depiction of Ridwan Kamil performance.

This study also utilized ATLAS.Ti software as supporting tools in the analysis phase [8]. Trustworthiness test also being conducted in this study by means of interview with Dinas Komunikasi dan Informatika (Communication and Informatics Officials of Republic Indonesia) or Diskominfo and Badan Perencanaan dan Pembangunan Daerah (County Planning and Development Body of Republic Indonesia) or Bappeda to revealed areas of priority of Bandung Smart City programs.

### **IV. THE FINDINGS**

#### **4.1 Ridwan Kamil's tweet to support communication and socialization of Bandung Smart City Programs**

During the period of 16 September 2013 to 31 July 2015, there were 20 programs of BSC that communicated between Ridwan Kamil and the citizen of Bandung via Twitter. The following figure displays the number of tweets of Ridwan Kamil on each of the programs of BSC.



Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Public-initiated	23	1	15	8	0	0	3	2	4	1	0	3	0	0	4	1	61	18	1	11
Government-initiated	27	0	33	8	3	2	4	3	5	0	1	1	1	1	2	0	9	7	0	2

Figure 1 Number of Tweets on Each of Bandung Smart City Programs

The type of communication related to BSC that took place on @RidwanKamil can be categorized as two main activities: Government-initiated communication and Public-initiated communication. Information sharing consists of activities on which Ridwan Kamil provide information regarding BSC to Bandung citizen by using Tweet. As for providing response consist of activities on which Ridwan Kamil provide a response to questions or suggestions imposed by the society through Reply and Retweet. The proportion of each of the categories was depicted in Figure 2 as shown below.

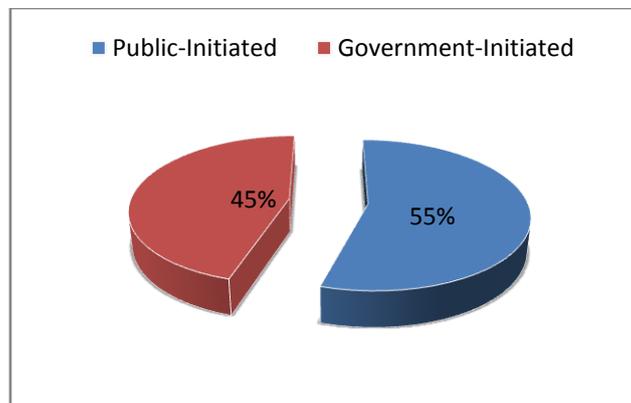


Figure 2 The Proportion of Communication Activities Related to Bandung Smart City on @RidwanKamil

As have been showed in Figure 2, the proportion of communication activities related to Bandung Smart City on @RidwanKamil during the period of 16 September 2013 to 31 July can be explained as follows:

- a. As much as 45% of communication that took place on @RidwanKamil consist of information sharing regarding 16 programs of Bandung Smart City that revolved around such topics as PPDB Online, Bandung Teknopolis, Bandung Command Center, Sabilulungan, BIRMS, Online permit (HAY.U), LAPOR, SIP, PPID Online, SAKIP, Cloud Computing e-Kelurahan, e-Puskesmas, Smart Parking System, Free Wifi, 300 City Apps, and CCTV. This type of communication, from this point forward, would be called as Government-initiated communication.
- b. As much as 55% of communication that took place on @RidwanKamil consist of Reply and Retweet toward 15 programs of Bandung Smart City that revolved around such topics as PPDB Online, Smart Digital Class, Bandung Teknopolis, Bandung Command Center, Online permit (HAY.U), LAPOR, SIP, LPSE, SAKIP, Smart Parking System, Lampu Jalan LED, Free Wifi, City Apps, Bandung Creative & Smarthub, dan CCTV. This type of communication, from this point forward, would be called as Public-initiated communication.

**4.2 The Evaluation of Ridwan Kamil Performance On The Implementation of Bandung Smart City**

As has been discussed earlier, there were two types of communication that took place on @RidwanKamil during the period under study. There were communication that initiated by Ridwan Kamil with 45% share (Government-initiated communication) and there were also communication initiated by other parties with 55% share (Public-initiated communication). In the Public-initiated communication, the role of Ridwan Kamil was to facilitate and / or to respond other communication stimuli initiated by other parties. The measurement of communication effectiveness of @RidwanKamil was primarily based on three indicators: the degree of communication resources spent on each BSC program, the degree of feedback received by each BSC program, and the congruity between communication resources spent on and the feedback obtained by BSC programs.

**4.2.1 The Degree of Communication Resources Spent on Each BSC Program**

This section tried to measure the effectiveness of government communication by using the degree of communication resources that were spent by Ridwan Kamil on each of BSC programs via @RidwanKamil. The degree of communication resources spent were measured by comparing the actual communication effort spent by @RidwanKamil on each BSC program and the communication effort that supposed to be spent by @RidwanKamil on each BSC program. The data being used in the measurement of this indicator was the number of Government-initiated communication spent on each BSC program. The groupings of communication resources received by each BSC program was calculated by using distribution of frequency[15].

$$\text{Width of class interval} = \frac{\text{next unit value after largest value in data} - \text{smallest value in data}}{\text{total number of class intervals}}$$

The highest number of tweet was 33 tweets and the lowest number of tweet was 1 tweet. The number of class interval using 5-point Likert scales ; very low, low, moderate, high, and very high [9]. Table 1 below showed the result

**Table 1 Communication Resources Received By Each BSC Programs**

Categories	Range of tweet number	The number of programs in range	Programs
<b>Very Low</b>	1-6	15	Smart Digital Class, Sabilulungan, BIRMS, Online permit (HAY.U), LAPOR, SIP, LPSE, PPID, SAKIP, Cloud Computing E-Kelurahan, E-Puskesmas, Smart Parking System, LED Light, Bandung Creative Smart Hub, and CCTV.
<b>Low</b>	7-12	2	Free Wifi and Bandung Command Center
<b>Moderate</b>	13-18	1	300 City Apps
<b>High</b>	19-24	0	-
<b>Very High</b>	25-30	2	Bandung Teknopolis and PPDB Online

According to Diskominfo and Bapeda, e-Government was a BSC area on which Ridwan Kamil put the greatest emphasis. However, Smart Commerce as a part of Bandung Teknopolis and PPDB Online as a part of Smart Education received the highest communication resources. Several e-Government programs, such as LAPOR (online reporting), Bandung Command Center, BIRMS, received either low or very low communication

resources. This findings indicated ineffective use of communication resources by Ridwan Kamil via twitter account.

**4.2.2 The Degree of Feedback Received by Each BSC Program**

This section tried to measure the effectiveness of government communication by using the degree of feedback obtained by each BSC program via @RidwanKamil. It was proposed earlier that one important functions of government communication was to obtain public support [7]. It was logical to propose that public support would be reflected on the number of communication initiated by the public, i.e. Public-initiated communication. At the very least, the number of feedback obtained could be serve as an indicator of the interest or priority that the citizen place toward each BSC program. The groupings of feedback received by each BSC program can be seen on Table 2.

**Table 2 Feedback Received By Each BSC Programs**

Categories	Range of tweet number	The number of programs in range	Programs
<b>Very Low</b>	1-12	17	Smart Digital Class, Bantuan sosial Online, BIRMS, Online permit (HAY.U), LAPOR, SIP, LPSE, PPID, SAKIP, Cloud Computing E-Kelurahan, E-Puskesmas, Smart Parking System, LED Light, Bandung Creative Smart Hub, 300 City Apps, Bandung Command Center dan CCTV.
<b>Low</b>	13-24	2	PPDB Online and Bandung Teknopolis
<b>Moderate</b>	25-36	0	-
<b>High</b>	37-48	0	-
<b>Very High</b>	49-60	1	Free Wifi

According to the groupings (see Table 2), Free Wifi was one of BSC programs that drew very high attention and support from the public. Free Wifi was a program that was part of Smart Society area. Several programs that were initially launched under e-Government area only received a slight of attention from the public. Again, since e-Government was a BSC area that Ridwan Kamil put the greatest emphasis on, this findings indicate poor government communication via twitter account.

**4.2.3 The Congruity of Communication Resource and Feedback of BSC Programs**

The last measure of communication effectiveness that can be utilized was the degree of congruity between the resources spent on each BSC program and the feedback received by each BSC program. According to Table 1 and Table 2 showed the degree of communication each BSC program. Ideally, the communication was congruity if it's representative the equal value of a degree between the resources spent on each BSC program and the feedback received. Table 3 below depicts the comparison of degrees each program.

**Table 3 The comparative degree between the resources spent on each BSC program and the feedback received**

Program	Government Initiated	Public Initiated	Match
1. PPDB Online	Very High	Low	X
2. Smart Digital Class	Very Low	Very Low	√
3. Bandung Teknopolis	Very High	Low	X
4. Bandung Command Center	Low	Very Low	X
5. Sabilulungan	Very Low	Very Low	√
6. BIRMS	Very Low	Very Low	√
7. Online permit (HAY.U)	Very Low	Very Low	√
8. LAPOR	Very Low	Very Low	√
9. SIP	Very Low	Very Low	√
10. LPSE	Very Low	Very Low	√

11. PPID	Very Low	Very Low	√
12. SAKIP	Very Low	Very Low	√
13. Cloud Computing e-Kelurahan	Very Low	Very Low	√
14. E Puskesmas	Very Low	Very Low	√
15. Smart Parking System	Very Low	Very Low	√
16. LED Light	Very Low	Very Low	√
17. Free Wifi	Low	Very High	X
18. 300 City Apps	Moderate	Very Low	X
19. Bandung Creative & Smarthub	Very Low	Very Low	√
20. CCTV	Very Low	Very Low	√

According to Table 3 representative programs of Smart Digital Class, Sabilulungan, BIRMS, Online Permit (HAY.U), LAPOR, SIP, LPSE, PPID, SAKIP, Cloud Computing, E-Puskesmas, Smart Parking System, LED Light, Bandung Creative and Smart Hub, and CCTV had the equal value of degree in very low.

## V. CONCLUSION

Based on the findings of this study, several valuable insights can be offered as follows:

- According to Bappeda and Diskominfo, Municipal Government of Bandung was placing high emphasis on Smart Government area such as PPDB online and Bandung Command Center. However the programs that received significant communication resources were Bandung Teknopolis (Smart Commerce) and PPDB Online (Smart Education). This might indicate ineffectiveness of government communication conveyed by Ridwan Kamil via @RidwanKamil.
- There were programs that received scant communication resources including Free Wifi, Bandung Command Center, 300 City Apps, SIP, Online permit (HAY.U), Sabilulungan, LAPOR, BIRMS, Smart Parking System, CCTV, PPID, SAKIP, Cloud Computing, e-Kelurahan, e-Puskesmas. Even though these programs require significant participation from Bandung Citizen in order to be effectively executed. \
- There were also several programs that have not been executed yet received large communication effort, i.e. Bandung Teknopolis.

As for the suggestion that can be extracted from the findings of this study that were targeted toward Ridwan Kamil were as follows:

- The communication resources, received by each BSC program must be aligned with the importance or emphasis that been placed by the Government. This suggestion requires improved planning activities regarding the communication of each BSC program.
- The naming of each BSC program must be simplified to further facilitate their communication in an efficient manner. This suggestion can reduce communication effort and the corresponding resources that must spend by Ridwan Kamil.

As for the suggestion that can be produced from the findings of this study for future research was to further narrowing the scope of improvement area that must be pursued by Ridwan Kamil in order to improve government communication of BSC programs.

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