Mapping Communication Priority of Local Government Leaders through Instagram Captions in Publicising Smart City Programmes

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Abstract. *Currently, social media is required to inform the public about local government programmes related to smart city. Advances in technology require the government to provide fast, precise and accurate information services. Local government leaders' communication patterns are crucial factors in the successful implementation of the smart city technology. This study aims to map the communication priorities of DKI Jakarta government leaders in publicising the smart city programmes using Instagram. The study, using a qualitative method with a content analysis approach, employs a case study involving an Instagram account owned by Anies Baswedan as the head of the DKI Jakarta regional government, analysing captions posted between February 2019 and February 2020. The ATLAS.Ti program was used for data processing. The study results reveal that the highest priority area for communication regarding the smart city programmes was Smart Economy. Moderate priorities included Smart Living, Smart People, Smart Governance and Smart Mobility. Lastly, Smart Environment had a low priority. This study demonstrates that Instagram can be an effective medium for building interaction between leaders and the community in delivering smart city programmes with balanced communication intensity for each programme. Thus, this study's findings are expected to provide a reference for local government leaders in balancing communication priorities for all smart city programmes.*

Keywords: *Analysis content, instagram, local government leader, smart city, social media*

1. Introduction

A smart city optimises the use of technological tools by integrating interconnected technology and available information to manage and maximise city assets (Anggadwita et al., 2020a). The importance of using social media in managing a city while progressing towards becoming a smart city is clear because in the current era of globalisation and digital technology, the public demands that the government provide fast, precise and accurate information services (Hasibuan & Krianto, 2019). According to Budiarti et al. (2016), social media has a significant influence on a person's life. Social media can

be defined as online media that people use to express their feelings to maintain and improve their existence (Kapoor et al., 2018). Currently, local governments widely use social media to communicate about government programmes and interact with the public by facilitating open feedback, comments and sharing information quickly on an on-going basis.

The use of social media is one example of governmental efforts to bring public services closer to society by employing information technology. One of the Indonesian government's efforts is to encourgae local government leaders to communicate about smart city programmes through Instagram.

For example, Anies Baswedan, the governor of DKI Jakarta from 2017 to 2022, has consistently used Instagram as a communication tool to inform the people living in DKI Jakarta about government programmes and interact directly with the community. Currently, Baswedan's Instagram account has as many as 4.8 million followers (@aniesbaswedan, 2020), an indication that his followers have received information about the work programmes of the DKI Jakarta regional government based on Baswedan's uploaded content.

DKI Jakarta as a smart city is in the process of implementation under various development programmes. Transparency and easy access to government data continue to be maximised. Moreover, easily accessible media (including social media) provide information related to community activities in the capital city of Jakarta. Social media is a vital tool supporting the initiation of the smart city technology in Jakarta, one facet of which is its function as a human sensor. Additional applications include relying on electronic sensors to monitor river conditions, including water levels, traffic, air quality and weather. Social media can facilitate collecting real-time information about these qualities via citizens who report conditions on Instagram, Twitter or Facebook faster (Jakarta Smart City, 2020). The data under consideration can also convey information about unexpected events such as natural disasters or riots.

Members of the public also use social media daily to obtain the latest information. Thus, social media can be the key to disseminating information, providing an effective tool for sharing information from the government concerning policy or development and public facilities, attracting public attention (leMadestam & Falkman, 2017). Social media can also provide a platform for citizen complaints, for example, reporting damage to facilities such as roads and sidewalks, unsatisfactory public services, illegal parking and lack of cleanliness. Another application of social media entails receiving useful ideas and suggestions for the development of a smart city in Jakarta.

According to the results of the WeAreSocial.net and Hootsuite (2020) survey, Instagram is the sixth largest social media platform in the world. In Indonesia, Instagram is the fourth most used social media site after YouTube, Facebook and WhatsApp. This study provides communication priority mapping of information dissemination by Anies Baswedan through Instagram captions. Content analysis was employed as the study's data analysis technique by gathering and evaluating data based on Baswedan's captions from February 2019 to February 2020.

2. Literature Review/ Hypotheses Development

2.1. Smart City

IBM defines a smart city as a city that optimises the use of integrated information technology and to give better understanding, control, and optimise in the use of limited resources (Cosgrove et al., 2011). Benevolo et al. (2016) defined a smart city as a complex, long-term vision of a better urban area, aiming at reducing its environmental footprint and creating a better quality of life for its citizens. Meanwhile, Letaifa (2015) described a smart city as a city that monitors and integrates all critical infrastructure conditions, including roads, bridges, tunnels, rails, subways, airports, ports, communications, water, electricity and large buildings, thus managing resources better, planning preventive maintenance activities and monitoring security aspects while maximising services to its citizens. In a similar vein, Lombardi et al. (2012) distinguished six types of smart city components: smart economy, smart mobility, smart environment, smart people, smart living and smart governance. Nevertheless, according to Wang (2020), the definition of smart city can vary widely and is based on the dynamics of the needs of city residents.

Smart city approach creates an innovative ecosystem that combines several different strengths. This holistic approach encourage entire communities to go online to connect all local government agencies, schools, businesses, citizens, health services and social services to address and assist in advancing collective skills and city capacities (Bresciani et al., 2018). According to Pelton and Singh (2019), a smart city is a city design and function that results in a better life and a higher quality of living standard for its people, demonstrating that such a city provides quality health and educational opportunities, higher security against natural disasters, social and political stability and freedom, growing economic and business prosperity, better housing and transportation, communications, networks, energy and all other essential utilities. The seven key elements of a smart city, according to Pelton and Singh (2019) include meeting the needs of its citizens, sustainability, jobs and competition, community support, infrastructure and resources, technology and artificial intelligence, and security. In conclusion, combining these various definitions reveals that a smart city has various kinds of access that incorporate technology to bring changes, such as easy access to public facilities. A smart city thus involves a process of becoming a city with online presence that is integrated with various information technology infrastructures.

2.2. *Social Media and Instagram*

According to Kotler and Keller (2016), social media provides a way for consumers to share text, images, audio and video information with each other and with companies or vice versa. This tool also allows marketers to establish a common voice and presence on the web and amplify other communication activities. According to Priansa (2017), internet-based social media has changed the pattern of information dissemination from one-to-many audiences to many-to-many audiences. Thus, this tool could make the dissemination of information more effective and more efficient.

The social media environment was categorised based on human interactivity and media interactivity (Lee & Hong, 2016). Data from Kemp (2019) revealed that the social media platforms based on social networks that have the most active users are Facebook, YouTube and Instagram. Instagram, a popular social media platform, was launched in 2010 as an application designed to allow users to share images from mobile devices. Its users employ this platform as a channel to connect with people around the world (Chen, 2017). According to Sulianta (2015), Instagram is an internet-based service and social network for sharing stories via digital images; moreover, smartphone users often use this social network to directly share their photos on the platform. Anggadwita et al. (2020b) identified Instagram as one of the most powerful, profitable and effective social media platforms for organisations to engage with the public. Therefore, social media is basically an effort to build initiatives to increase government–community cooperation (Lee & Hong, 2016; Medaglia, 2012).

2.3. *Leadership and Communication*

Leadership is a process of influencing others to behave in accordance with the wishes of the leader; hence, leadership effectiveness can be measured by the willingness of others to behave in accordance with the goals of the leader and the organisation without any sense of coercion (Badeni, 2014; Ruben & Gigliotti, 2016). Successful leadership describes a leader who manages to achieve organisational goals regardless of whether other people feel compelled (or not) to do so. Leadership will create a dilemma in achieving organisational effectiveness. Therefore, effective leaders must also pay attention to the human aspect in an effort to increase support.

Brett (2019) asserted that leadership is about expertise and authority. Great leaders have deep knowledge of their field and encourage people to seek them out for answers to difficult challenges. According to Suwatno and Priansa (2014), a leader is a symbol or a

pioneer as a person who is willing to advance into an unknown situation. A leader with a clear vision can act as a guide in carrying out his duties and main functions as a leader.

Hersey and Blanchard (1996) assumed that effective and successful leaders adopt styles or behaviours that are appropriate to the situation. Such situational leadership is effective with followers by utilising behaviour orientation and being task-oriented (Cote, 2017; Northouse, 2016). Therefore, effective leadership depends not only on the person or group being affected but also on strategy.

Leadership and communication are closely related. Communication is part of a leader's strategy to achieve goals. However, Ruben and Gigliotti (2016) assumed that communication is more than merely a tool or strategy. Instead, they saw communication as an orientation, a worldview, where the leader focuses broadly on the process of social influence.

Information and communication technology (ICT) offers a new approach for open government, including the use of social media (Bertot et al., 2010; Kim et al., 2017). ICT gives the public an opportunity to interact and discuss with their leaders using social media. Men et al. (2018) defined attributes of leadership communication as responsiveness and authenticity that strongly and positively influence perceptions of leadership effectiveness and the quality of government-public relation. Therefore, social media in the public sector is becoming a powerful strategy for administrative reform at all levels of government. That also directly increases public trust and satisfaction regarding government (Lee & Hong, 2016; Men et al., 2018; Picazo-Vela et al., 2012).

Conceptual Model

The previous research presented the leadership model as the art of influencing other people or how a leader becomes influential in society based on what he does and says (leMadestam & Falkman, 2017). The context of this study is the use of Instagram by local leaders as a tool for conveying information to influence the public by providing an understanding of government programmes related to smart cities. According to leMadestam and Falkman (2017), social media can build an image of leadership from a broader perspective where social media changes the way people connect and turns everything into bound. Social media can also change and influence leaders' communication patterns in new ways.

The application of the smart city concept uses technology and communication to realise better community services (Hasibuan & Krianto, 2019). This study focuses on Baswedan's Instagram, which the governor has used as a means of communication regarding Jakarta Smart City programmes to inform the people of Jakarta. The six priority areas involved include the following (Jakarta Smart City, 2020):

1. Smart Economy
2. Smart Environment
3. Smart Mobility
4. Smart People
5. Smart Living
6. Smart Governance

This study uses Baswedan's Instagram captions to describe the mapping of his communication priorities in publicising of programmes in the six priority areas of Jakarta Smart City. Figure 1 displays the conceptual framework of this research.
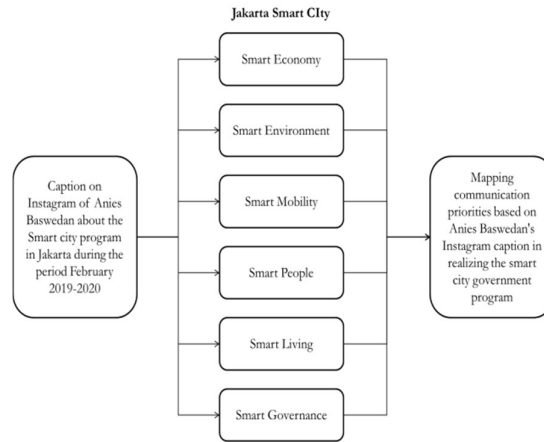
Jakarta Smart CIty

Smart Economy

Smart Environment

Smart Mobility

Smart People

Smart Living

Smart Governance

Caption on Instagram of Anies Baswedan about the Smart city program in Jakarta during the period February 2019-2020

Mapping communication priorities based on Anies Baswedan's Instagram caption in realizing the smart city government program

Figure 1.
Conceptual Framework

3. Methodology

This study employed qualitative research methods. In general, qualitative methods involve personal observations of situations, events, individuals, interactions and transactions, document analysis (including quantitative data) and open interviews that produce in-depth oral and written testimonies (Dana & Dana, 2005). This research focused on Anis Baswedan's personal Instagram account (@anisbaswedan).

Data were obtained via captions from @anisbaswedan discussing the Jakarta Smart City programmes between February 2019 and February 2020. These captions were then analysed using content analysis techniques to produce an overview of the communication priorities presented by Baswedan regarding smart city programmes in Jakarta.

Content analysis is a research methodology used for gaining an understanding of message content (often unstructured) in the form of text, images, symbols or audio data (Anggadwita et al., 2020a). This method is used to determine textual meaning (Gheyle & Jacobs, 2020). This study's content analysis process followed several steps, as explained by Krippendorff (2004), entailing unitising, sampling, recording/coding, reducing, drawing conclusions and narrating.

ATLAS.ti was used to process the study data, which involved encoding data from all captions, and helped provide insight in conducting content analysis. Specifically, ATLAS.ti facilitates organising raw research data and helps provide coding for each portion of data that has been categorised.

The stages of using ATLAS.ti were as follows:
1. Text related to the topic smart city was sorted into quotes. A citation involved a segment of a document that was of interest or importance to the research
2. Sorted quotes were categorised and entered into the software, then marked into a list of codes that had been previously created (six components of a smart city);
3. The coding results were analysed by linking the relevant code to each quote. Various data findings to be presented are strengthenedby the relationship between the code and the quotations that have been identified.

In categorising priority areas as high, moderate, and low, the calculation was based on the accumulated number of smart city programmes using three quartile calculations, as follows:

n (Number of smart city programmes) = 6

$$Q1 \text{ (Low)} = \frac{1}{4}(n+1) = \frac{1}{4}(6+1) = 1.75 \approx 2$$

Q2 (Moderate) $= \frac{1}{2} (n + 1) = \frac{1}{4} (6 + 1) =$ 3.5 $\approx$ 4

Q3 (High) $= \frac{3}{4} (n + 1) = \frac{1}{4} (6 + 1) =$ 5.25 $\approx$ 5

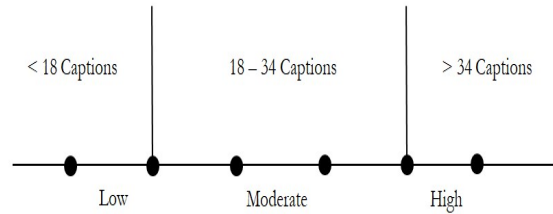The results of the classification can be depicted in the form of a continuum, as shown in Figure 2.

Figure 2.
Priority Categories

4. Findings and Discussion

4.1. Anies Baswedan Caption Overview in Communicating and Disseminating Information on the Jakarta Smart City Programmes

Instagram was one form of social media that Baswedan used in communicating with the people of Jakarta. Through his personal account, he conveyed much information regarding the development of Jakarta and government programmes, including the Jakarta Smart City programmes. Table 1 displays Baswedan's caption data between 10 February 2019 and 10 February 2020 concerning the Jakarta Smart City programmes. The table also presents the priority areas of these programmes.

Table 1.
Priority Areas of Jakarta Smart City Programmes

No	Priority Area	Programmes
1	Smart Economy	1. Online street food 2. Food info Jakarta 3. Jakarta One
2	Smart Mobility	1. Electronic parking 2. Transjakarta application
3	Smart Environment	1. Smart public lighting 2. Standard pollution index
4	Smart Governance	1. PTSP (One-stop services) 2. Portal 3. E-budgeting 4. CRM (Fast community response) 5. Open data
5	Smart Living	1. Flood monitor 2. CCTV city surveillance 3. Integrated low-cost apartments
6	Smart People	1. Jakarta Smart Card 2. I-Jakarta 3. Co-working space

4.2. Mapping of Jakarta Smart City Programmes Communication Priorities

We conducted communication mapping to determine priorities, which were divided into high, moderate and low categories of the Jakarta Smart City programmes based on Baswedan's Instagram captions. The priority areas for Jakarta Smart City include smart people, smart living, smart governance, smart environment, smart economy and smart mobility (Jakarta Smart City, 2020). ATLAS.ti was used to facilitate identifying the number of captions related to programmes that were categorised as supporting the Jakarta Smart City priority area by calculating the number of codes in the quotation for each Jakarta Smart City programmes.

In categorising priority areas reflecting high, moderate, and low priorities based on accumulated captions, a continuum line range with calculated average values was used.

The following list shows the number of captions that Baswedan posted for each Jakarta Smart City programmes.
1. Smart Economy: 44 captions
2. Smart People: 34 captions
3. Smart Living: 32 captions
4. Smart Governance: 26 captions
5. Smart Mobility: 18 captions
6. Smart Environment: 6 captions

The category value was estimated by calculating the three quartiles, where the caption score per variable was assumed to be the number stepping distance. Table 2 illustrates the score classification used in this study.

Table 2.
Priority Category Classification

No	Priority Category	Number of Captions
1	High	> 34 captions
2	Moderate	18–34 captions
3	Low	< 18 captions

Based on the data comprising captions from @aniesbaswedan on Instagram between 10 February 2019 and 10 February 2020, the priority of each programme was determined as high, medium or low. The mapping priority was taken from the ATLAS.ti results showing the quantity of information appearing via the captions.

High Priorities
The area of highest priority was Smart Economy. During the period of interest (10 February 2019 to 10 February 2020), in Instagram-based communications posted on @aniesbaswedan to the people of Jakarta, > 34 captions mentioned this area. Thus, Smart Economy could be labelled a priority area compared to the other five under consideration. In other words, more mentions of an area suggested a higher priority.

As the centre of the economy in Indonesia, Jakarta is a destination for people from various regions who are seeking work. The most widely mentioned Smart Economy programme was Jakarta One (26 captions), a multifunctional card that can be used for various expenditures, including payments for Transjakarta buses, hospitals, flats, taxes, user fees, parking meters, MRT and health insurance (Jakarta Smart City, 2019).

Moderate Priorities
Three moderate priority areas emerged in the study process: Smart Mobility, Smart Governance, and Smart Living and Smart People. The analysis revealed that @aniesbaswedan posted 18–34 Instagram captions for these three areas between 10 February 2019 and 10 February 2020. Thus, these areas were ranked second after the highest priority, Smart Economy.

The Jakarta Smart Card (26 captions), one of the Smart People programmes, assists students, including marginalised students, by supporting monthly education costs through ATM cards. Similarly, flooding represented equally crucial information conveyed through 26 Instagram captions. Floods are an annual problem that remains the Jakarta government's responsibility. As part of the effort to prevent flooding, the government uses 5,600 closed-circuit television (CCTV) surveillance cameras that are connected to the Jakarta Smart City portal in real time through a command centre equipped with an intelligent operational centre (IOC) system that monitors and analyses all events in Jakarta (Jakarta Smart City, 2019). Meanwhile, Transjakarta, which received 17 mentions, is a smart mobility programme comprising an integrated application that provides transportation information.

Low Priorities
One area, the Smart Environment, was assigned the lowest priority. Between 10 February 2019 and 10 February 2020, @aniesbaswedan posted <18 captions related to this area in Instagram-based messages to the people of Jakarta. In other words, this area featured fewer communications by the @aniesbaswedan Instagram account than the other five areas. Conceivably, fewer mention concerning an area suggestive a lower priority.

Discussion
The success of smart city development involves environmental, economic and technological aspects as well as upright behaviour on the part of citizens (Benevolo et al., 2016). The most often mentioned (high priority) programme by the @aniesbaswedan Instagram account was the Smart Economy programme, with 44 total captions. This programme creates an ecosystem supporting community economic activities that are in line with the regional leading economic sectors that adapt to the changes occurring during the current advances in information technology (Astutik & Gunartin, 2019). Jakarta, as the capital city of Indonesia, is the economic centre of the Indonesian population. The circulation of economic movements in Jakarta has become the spearhead of the economy in Indonesia. However, developing a smart city requires being instrumented, interconnected and intelligent (Kim et al., 2017).

The Smart People programme, with 34 Instagram mentions, was ranked as a moderate priority. Ramdani and Habibi (2017) described Smart People as a programme that builds tolerant urban communities that are also aware of maintaining the city in social structure. This programme supports the efforts of the DKI Jakarta Provincial Government by strengthening the development of Betawi culture in synergy with other multicultural cultures. The smart city concept concerns urban innovation, mainly based on ICT (Anthopoulos, 2017). Thus, the development of a modern city does not abandon the indigenous culture of the region while maintaining tolerance between elements of society.

The Smart Living programme, which was the subject of 32 captions posted on the @aniesbaswedan Instagram account, was included in the category of moderate priorities. This programme concerns the quality of life and culture of the community, involving easy access to education services, health services, and the development of the role of the media, the availability of all needs, a sense of security, safety, ease and comfort of life (Widharetno, 2017).

The Smart Governance programme, mentioned 26 times in Baswedan's Instagram captions, was also included in the moderate priority category. This programme involves the government's role in issuing policies by taking into account the principles of the rule of law, humanity, justice, democracy, participation, transparency, professionalism and accountability, as well as the effectiveness and efficiency of policies. According to Meijer and Bolívar (2016), "Smart city governance is not a technological issue, is a

complex process of institutional change and acknowledge the political nature of appealing visions of socio-technical governance." However, smart governance also plays a role in the development of e-governance and the use of information and communication technology, allowing people to participate in planning, implementing and monitoring development (Abella et al., 2017).

Smart mobility actions have an impact on citizens' quality of life and on the public value created for the city as a whole (Benevolo et al., 2016). However, the Smart Mobility programme, mentioned only 18 times in Instagram captions on the @aniesbaswedan account, was assigned a low priority. Smart mobility has the goal of providing access to various modes of transportation and prioritising environmentally friendly transportation and non-motorised vehicles which integrated with ICT (Molinillo et al., 2019). Moreover, the role of ICT is pivotal in supporting smart mobility actions (Benevolo et al., 2016).

The last category, Smart Environment, was also deemed low priority. This category featured in only six captions on Baswedan's Instagram account during the time frame under discussion. Smart Environment involves an environmentally friendly development plan, environmentally friendly energy, environmentally friendly buildings accompanied by the application and utilisation of IT-based environmental management, IT-based natural resource management and the development of new energy sources. A smart environment provides a comfortable environment in the present and future, known as environmental sustainability, both in physical and non-physical conditions (Astutik & Gunartin, 2019). Therefore, the government should provide a user-friendly platform for a smart environment (Lee & Hong, 2016).

The communications of the regional leader of Jakarta City, Anies Baswedan, suggest that he has employed a situational leadership style, as can be seen from his use of Instagram as a means of communication to the community, especially millennials. Situational leadership depends on followers; therefore, social media will affect the public's evaluation of the effectiveness of leadership (Man et al., 2018). However, this study's results differed from Anggadwita et al.'s (2020) findings indicating that the smart environment was a high priority communicated by Bandung city leaders on their Instagram accounts. Moreover, a previous study by Nadapdap et al. (2016) revealed that as many as 38 captions concerning the Bandung Smart City programmes were conveyed through the personal Twitter account of Ridwan Kamil, a pioneer in the Bandung Smart City programmes who aims to solve the problems of the Bandung city in an integrated manner.

5. Conclusion

The study results reveal that from 10 February 2019 to 10 February 2020, the regional leader of the City of Jakarta, Anies Baswedan, provided information to the public about 18 Jakarta Smart City programmes in captions posted on his personal Instagram. In these captions, the Smart Economy programme had the most frequent mentions, indicating high priority. Some programmes that received frequent mention were Jakarta One (26 captions) and Food Info Jakarta (16 captions).

Meanwhile, areas with moderate priority included Smart Living, Smart People, Smart Governance, and Smart Mobility. The often mentioned Smart Living programme was the Flood Monitor (26 captions). Meanwhile, the Smart People programme included in Baswedan's Instagram captions was the Jakarta Smart Card (26 captions), while Smart Governance was represented by e-budgeting (4 captions). Lastly, the Smart Mobility programme mentioned was the Transjakarta application (17 captions).

Smart Environment represented the low priority category. Specifically, the captions posted on Baswedan's Instagram account during the time frame in question almost never mentioned the smart public lighting programme and the standard pollution index.

This study provides an understanding the importance of leader communication in smart city governance. The study highlights the prioritization of social media by balancing quantity and quality as successful keys of a smart city programme. The quantity of communication that local leaders provide through social media has an impact on the success of the programme being implemented. This research is expected to be helpful to the governor of DKI Jakarta, Anies Baswedan, who made the effort to inform the people of Jakarta City about the Jakarta Smart City programmes. Therefore, increasing interaction with users and making an effort to communicate with users is a vital point to consider for the government leader.

In addition, the results of this study are expected to provide input about balancing future communication patterns to support the implementation of the Jakarta Smart City programmes and to bring about other programmes that are not yet implement. The future strategy concerns how to build a mutual connection between active users in managing a smart city that focuses on public values. To optimise the process, the government should provide suitable messages concerning for the new programmes and support a social media environment that encourages collaboration. Future studies can validate this study's results by directly interviewing local leaders. The methodology and findings can also be used as a reference in studies related to the effectiveness of social media and the communication patterns of local leaders.

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