


# The Sentiments of Indonesian Urban Citizens Regarding the Lockdown-Like Policy During the COVID-19 Pandemic: A Path Towards an Urban E-Planning Process in a Pandemic Situation

## INTRODUCTION

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### ABSTRACT

Indonesia implemented large scale social restrictions (LSSR) to cope with COVID-19. This policy generated various opinions between people that demonstrated their sentiments in daily life and social media. This study aims to analyse the sentiments of Indonesian urban citizens with respect to the policy. Using Drone Emprit Academic, a data mining tool that retrieved data from Twitter, this study examined tweets that mentioned “Pembatasan Sosial Berskala Besar” or “PSBB” from March 2nd, 2020 to January 11th, 2021. It reveals that significant events in the real world influence the sentiments pattern and classification during that particular period. The spatial distribution of the tweets reveals that the conversation is concentrated in cities throughout Java. Twitter-based sentiment analysis can be an alternative method for the government to monitor and evaluate its policies in the future, specifically in a pandemic situation.

### KEYWORDS

Digital Planning, E-Planning, Grassroots Planning, Large-Scale Social Restrictions, Machine Learning, Planning Process, Sentiment Analysis, Smart Cities, Social Media, Twitter, Urban Planning

The world is currently fighting the Novel Coronavirus Disease 2019 (COVID-19), which was initially reported by the World Health Organisation (WHO) China Country Office after it detected an unknown pneumonia virus in Wuhan City, Hubei Province, China, on December 31<sup>st</sup>, 2019 (WHO, 2020a). The disease became an outbreak when on January 13<sup>th</sup> – 20<sup>th</sup>, 2020, Thailand, Japan and the Republic of South Korea confirmed similar cases (WHO, 2020a). Since then, most countries have confirmed cases of the virus. As of January 2021, virtually every country was exposed to this pandemic, with more than 80 million confirmed cases and approximately 2 million confirmed deaths (WHO, 2021a). In March 2020, the WHO announced that COVID-19 was a global pandemic. Subsequently, most countries implemented various policies to combat the spread of this virulent disease.

With regard to Indonesia, the first case was reported on March 2<sup>nd</sup>, 2020, in Depok City. Since then, confirmed cases increased, as of January 2021, more than 900,000 cases were confirmed and more than 25,000 deaths confirmed (WHO, 2021b). On March 31<sup>st</sup>, 2020, the President issued a “lockdown-like”

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policy by means of Government decree number 21/2020 on the implementation of “Large Scale Social Restrictions” (LSSR) to manage the COVID-19 pandemic. The policy has become a guideline for government officials across Indonesia to reduce the spread of the virus domestically on a large scale. However, the policy does not imply a lockdown because it only limits the mobility and activities of people within a city. The policy stated that the minimum restrictions for limiting the spread of COVID-19 is the closure of schools and offices (working/studying from home), limiting religious activities, along with restricting activities in public places. The decree does not mention the minimum number of COVID-19 cases within a city to implement the LSSR. It can be enforced by the Governors and the Regents/Mayors by assessing the situation in their area of authority. On account of this procedure, several issues emerge, such as the fragmented policies pertaining to the implementation of the LSSR throughout provinces and cities in Indonesia and the challenges related to restricting office-related activities (i.e., services-based offices), besides those performed in public places (i.e., traditional markets).

The policy generated discussion between people, with people revealing their sentiments on social media and in daily life. According to data provided by Wearesocial & Hootsuite (2021), 57% of people live in urban areas and 345.3 million people use mobile connections (125.6% of the total population), comprising 202.6 million internet users (73.7% of the total population), whereas 170 million people are active social media users. Twitter is a social media commonly used by most Indonesians, with more than 60% of Indonesians being active social media users (Wearesocial & Hootsuite, 2021). Demographically, people aged 18-34 dominate the use of social media (more than 50% of total users), with male users dominating (Wearesocial & Hootsuite, 2021). Furthermore, Indonesian users typically use Twitter to conduct conversations on prominent actual events on a text-based post, making it much more straightforward to track sentiments that emerge from each tweet. However, there is a dearth of studies concerning Indonesian urban citizens’ sentiments towards the LSSR policy and how this could affect urban management decision-making during COVID-19. From the perspective of urban planning, these sentiments could provide a more profound sense of how urban citizens react to a situation, which overlaps with aspects within the urban area, such as economy, social, activity and mobility. This study aims to analyse the sentiments of Indonesian urban citizens on the subject of the lockdown-like policy throughout Indonesian cities. Two research questions were raised to achieve the objective: (1) What is the pattern of Indonesian urban citizens’ sentiments regarding the lockdown-like policy? (2) What is the spatial distribution of the sentiments? It should be mentioned that the data and analysis on the sentiments and its spatial distribution primarily employed the Drone Emprit Academic (DEA) tool, which will be explained in section 3.

## **THEORY**

### **Sentiment Analysis**

An urban area is a field of social practice where people interact and share their views towards current things occurring in a city. They need to communicate to make the interaction happen. A type of communication is an opinion that becomes a form in relation to revealing their views towards a city. It can include an opinion on the quality of city services, current and future urban policies, besides urban issues (Ciuccarelli et al., 2014). In this digital era, opinion can be stated via social media. An opinion that is expressed by way of social media is commonly recognised as sentiment that can be further analysed (Pozzi et al., 2017). According to Liu (2012), sentiment analysis focuses on mining and investigating people’s opinions regarding certain objects, such as products, organisations, issues and trends. The term sentiment refers to a person’s positive, negative or neutral feelings that appear as a result of their opinion (Liu 2017). Liu (2015), explained that a neutral feeling can be assumed as a “no opinion.” In the context of urban planning and management, this sentiment can be a valuable material used to make a shrewd planning decision (Thakuriah et al., 2017; Liu, 2015).

Sentiment analysis is a natural language problem (see Liu, 2012) and is commonly analysed using lexicon-based or machine learning approaches. The lexicon-based approach focuses on the collection of the

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