Artificial Intelligent Model: The Mapping of Social Assistance Distribution for Handling COVID-19 in DKI Jakarta

Yusriah Dzinnun, Dyah Mutiarin, Suswanta, Achmad Nurmandi
Universitas Muhammadiyah Yogyakarta
Yusriahdzinnun9@gmail.com

Abstract

This research was conducted to find out how to map the problems in the distribution of social assistance by the DKI Jakarta government. This research uses qualitative research methods based on field studies, which is a research method that is oriented towards primary data collection which is taken through data owned by the DKI Jakarta government and processed using Tableau engine to determine field mapping. The results of this study attempt to provide an overview of the mapping of the distribution of social assistance in cases affected by COVID-19 which uses big data as the database for recipients of the aid. It was found that East Jakarta was an area with several residents who received social assistance due to the impact of the COVID-19 outbreak. This research implies that cooperation, coordination, and harmonization between the central government, regional governments, and private institutions are needed to be right on target, effective and efficient, and supported by a good, integrated, transparent, and accountable system in the distribution of social assistance.

Keywords: Artificial Intelligent, Model Distribution, Social Assistance, DKI Jakarta

1. Background

At the beginning of 2020, the world was shocked by an extraordinary incident, because of a mysterious virus that spread in China which was later known as the coronavirus, or in the medical scientific language, it was called the 2019 coronavirus disease. The 2019 coronavirus disease was first known to exist in December 2019 in Wuhan, China [1]. The government of China on December 31, 2019, conveyed several cases of pneumonia that occurred in his country to the World Health Organization (WHO). Then, WHO designated this incident as a pandemic after 114 countries. For this reason, as an effort to overcome the spread of the virus, the government has implemented several policies, including establishing the COVID-19 virus outbreak as a national disaster [2] [3].

Through Presidential Decree number 2 of 2020 concerning the Determination of Non-Natural Disaster The spread of coronavirus disease 2019 (COVID-19) as a national disaster [4]. The government also implements Large-Scale Social Restrictions for areas that are included in the red zone through the Minister of Health Regulation Number 9 of 2020 concerning PSBB Guidelines [5]. After the COVID-19 outbreak was declared a national disaster and pandemic, several regions implemented large-scale social restrictions to prevent further spread. This has had a significant impact on the survival of the community, due to limited social interaction which ultimately disrupted economic activities, making daily work impossible, and many
waves of layoffs by companies due to the company's inability to retain employees in a pandemic situation [6]. Not to mention due to the decrease in income, the crime rate increased so that the government finally chose a policy to provide social assistance as a form of state responsibility to the community to anticipate all socio-economic problems related to COVID-19 [7] [8].

The government has not stayed silent in facing this unpredictable condition. The government should immediately handle the impact of the economic downturn, such as providing social assistance to the community by issuing financial policies as a fast and extraordinary step in dealing with COVID-19 [9]. The Ministry of Home Affairs issued the Minister of Home Affairs Regulation Number 20 of 2020 concerning Handling COVID-19 [10]. For local governments, this regulation is a follow-up to the President's instruction instructing the Minister of Home Affairs to take further steps to accelerate the use of the Regional Revenue and Expenditure Budget (APBD). This regulation provides a legal basis for the government regions to change regional head regulations regarding the elaboration of the APBD to accelerate the handling of COVID-19. In the regulation of the Minister of Home Affairs, it is explained that the Regional Government needs to prioritize the use of the APBD to anticipate and manage the impact of COVID-19 transmission, especially the provision of social assistance to affected communities. Providing social assistance to the community is not something new to be done by the government. In the event of a disaster in a region, for example, this social assistance is often carried out by the central government and regional governments, but the public response to the realization that has occurred has caused disappointment over its distribution. Routine activities provided to the community are carried out following the poverty level of the community as recipients of social assistance in various forms. During the COVID-19 pandemic, the government, both central and regional, was confused in distributing social assistance to the community [11].

Social assistance is part of a social safety net during the COVID-19 pandemic, which distribution has not yet reached all affected parties. This is due to inaccurate data held by the government. For this reason, a system is needed that can assist the government in updating data in the hope that policies issued by the government can run effectively [12]. Therefore, this study aims to map the problem of distributing social assistance during the COVID-19 pandemic. The two main questions that will be answered through this research are: (1) how did the government map the social assistance subsidies in an accurate manner using the back-end encryption owned by the DKI Jakarta government during the pandemic period? (2) What are the main factors that cause the problem of inaccuracy in the distribution of social assistance for COVID-19 in Indonesia? The results of this study are expected to provide an understanding of the main problems related to the distribution of COVID-19 social assistance so that further research can further elaborate on alternative solutions.

2. Basic Theory

Social Assistance Program

The provision of assistance by the Government, including the Central and Regional Governments, seemed confusing, was slowly accepted by the affected communities, and was not well-targeted [13]. Has this problem of social assistance been hereditary in the flow of
government in Indonesia or is it because the government is very far away from the community and the distribution system or the provision of assistance that consists of various doors? The number of doors for social assistance creates different schedules and perspectives and sometimes the data provided is invalid [14]. There are several studies related to the distribution of social assistance both during the COVID-19 pandemic and before the pandemic occurred. From some of these studies, there are differences in the variables and research results, such as overlapping government policies related to the COVID-19 social assistance issued, causing confusion and confusion in its implementation [15]. On the other hand, the implementation of the direct cash assistance policy has been rejected by the community [1]. The distribution of social assistance to the community is not optimal due to the government's unpreparedness and the inadequate decision support system to determine which poor families should be assisted [16]. From all these studies, a common thread can be drawn that previous studies only focused on one-sided discussion, so no research summarizes all the social assistance problems of COVID-19 in Indonesia which provides a map and a comprehensive picture of these problems [17].

Artificial Intelligent in Mapping Social Assistance

Mapping is a system in which there is a database with a special ability to represent data spatially or in the form of geographic coordinates and a set of operations that manage the data [18]. Various types of data such as medical records, contact history, and travel history of a person are analyzed using big data and artificial intelligence techniques to identify potential transmission of the SARS-CoV-2 virus in a community [19]. Technological advances that can capture specific preferences regarding valence issues such as security and health, for example through big data analytics, it is important to accelerate the bottom-up mechanism in a matter of minutes. Exercise on data becomes an entry point in ascertaining whether the rhetoric of policies conveyed by regional heads truly represents the real substance of policies [20].

Geographical Information System (GIS) technology is a technology that can geographically collect, manage, manipulate and visualize spatial (spatial) [21] [22]. The data is related to the position of the earth's surface on the map according to the actual position of the earth's surface with coordinate information points and can produce geographic information in the form of digital maps [23]. In the expert's opinion, it can be concluded that digitalized mapping is very important because it can see or translate data into a form of mapping visualization.

3. Methodology

In this paper, we based our research on big data which referred to a large volume, complex, growing data set with multiple, autonomous sources. We mined the data from government regulations, the ministerial acts. The collected data were classified based framework of resource files using the NVivo engine. To analyze how the government mapping the social assistance aids to society. After the data classification, we validated the materials with information from other sources. Data validation is critical in qualitative research-based to examine its reliability. As the basis of this study using big data analysis, we never confirmed the validation of the data through the interview with the editorial team of the online media
which can also be considered as the weakness of this study. However, with the fast
development of networking, data storage, internet access, and data collection capacity, big
data through data mining has helped the reliability of studies such as biomedical, physics, and
health those are related to this research.

4. Result and Findings

Seeing the many social assistance problems that have occurred today in the Central and
Regional Government, it can be seen from the criticism that occurs regarding the process of
distributing social assistance [24]. This criticism does not only come from the community but
Central and Regional Government Officials, as conveyed by DKI Jakarta Governor Anies
Baswedan [3] where he stated criticism to the Central Government in the distribution of this
social assistance. The criticism relates to data that is not integrated into the Central
Government. Especially each Ministry has its survey data which results in data that is owned
by the Central Government and Regional Government out of sync [3].

If seen from the description above, it can be concluded that the problem with the distribution
of social assistance from the Central Government is data on aid recipients [25]. Data on social
assistance recipients should be updated and verified annually so that if a disaster occurs or
does not occur, the Government is ready with data on who should be given social assistance
under the criteria for providing social assistance following the regulations stipulated in Law
Number 13 of 2011 concerning Handling of the Poor, as explained in Article 8, that the
determination of the criteria for the poor is carried out by the Minister. After that, the
Minister carries out a process of verification and validation of data on the poor which is
carried out periodically at least once every two years. The results of the verification and
validation of the data collection are then reported to the Regent/Mayor. The Regent/Mayor
then reports to the Governor to be forwarded to the Minister.

The problem with the distribution of social assistance is not just a problem with data. The
Coordinating Minister for Human Development and Culture Muhadjir Effendy in a press
conference after a limited meeting with President Joko Widodo, Tuesday (19/5/2020) said
there were three problems in the distribution of social assistance, such as (1) The problem of
budget allocation is different for each Ministry. (2) Data problems require careful data
collection so that the distribution is not misdirected, therefore the distribution becomes a bit
slow.
Figure 1. The Mapping of Social Assistance Distribution

**Source: primary data 2020**

The DKI Jakarta Provincial Government through the DKI Jakarta Province COVID-19 Handling Acceleration Task Force conveyed the latest developments as of April 17, 2020. Head of the Health Resources Division of the DKI Jakarta Provincial Health Office, who is also the Coordinator of the DKI Jakarta Province COVID-19 Handling Acceleration Task Force Post, Ani Ruspitawati, explained, as many as 204 people were declared cured, out of a total of 2,819 positive cases, with a total of 248 patients who died. Meanwhile, related to the implementation of social assistance during the Large-Scale Social Restrictions (PSBB), since April 9, 2020, social assistance has been distributed to poor and vulnerable people affected by COVID-19. The target of social assistance recipients is 1.2 million families living in DKI Jakarta. Social assistance is distributed every day until April 24, 2020. This social assistance program originates from the reallocation of the DKI Jakarta Province APBD budget.

Ani representing the DKI Jakarta Provincial Government also expressed his appreciation to various parties who have helped and collaborated in dealing with the COVID-19 pandemic. As of Thursday, April 16, 2020, there are a total of 80 collaborators who have participated, with details of 41 collaborators coming from Business Institutions; 19 collaborators are NGOs / CSOs, United Nations Agencies, and Universities; 16 collaborators are individuals; 4 collaborators are Ministry and Ministry level.

Meanwhile, for people who want to collaborate, the support/assistance that is still needed is Personal Protective Equipment, masks, gloves, disinfectants, and regulations. Support can be delivered directly to the Jakarta Development Collaboration Network (JDCN) through the Secretariat of the DKI Jakarta Province COVID-19 Acceleration and Handling Task Force, City Hall, Blok G Floor 2 or through the jdcn.jakarta.go.id channel and Chat Center at 081196000196 and 081196000197.

The Provincial Government of DKI Jakarta through the DKI Jakarta Provincial Social Service implemented the Social Assistance program during the Large-Scale Social Restrictions (PSBB) period, aimed at the poor and vulnerable to the poor who were affected by COVID-19. The target of social assistance recipients is 1.2 million families living in DKI Jakarta. This social assistance is distributed every day, during 9-24 April 2020. Head of the DKI Jakarta Provincial Social Service, Irmansyah, explained that the poor and vulnerable
people/communities in the DKI Jakarta Province who receive the social assistance including 1) Citizens or the community recorded in Integrated Social Welfare Data (DTKS); 2) Recipients of the existing DKI Jakarta Social Welfare Card (KJP Plus, KJMU, Jakarta Elderly Card, Disability Card, Child Basic Needs Fulfillment Card (KSD), PMT-AS, and Jakarta Cheap Food); 3) Have an income of less than IDR 5 million/month; 4) Being laid off or sent home with a reduction or not receiving a salary; 5) Close business/cannot resell; 6) Income/turnover has decreased drastically due to the COVID-19 pandemic.

As is well known, the assistance provided was in the form of packages of staple food commodities (5 kg one sack of rice, two cans of protein food, one pack of 0.9-liter cooking oil, two packs of biscuits), two cloth masks, and two sticks of soap. No cash assistance was provided. This social assistance program originates from the reallocation of the DKI Jakarta Province APBD budget. In the process of organizing the PSBB COVID-19 Social Assistance Program, the DKI Jakarta Provincial Government has implemented a data collection mechanism (data collection, verification, and data validation) following applicable regulations. The provision of public information regarding the list of recipients of social assistance will follow the applicable rules and mechanisms under the mandate of the Republic of Indonesia Law No. 14 of 2008 concerning Freedom of Information. Information regarding the list of social assistance recipients can be accessed by the public through the mechanism for requesting public information by excluding data related to the personal information of social assistance recipients or other information that is excluded under the Law on Public Information Disclosure.

5. Conclusion

No cash assistance was provided. This social assistance program originates from the reallocation of the DKI Jakarta Province APBD budget. In the process of organizing the PSBB COVID-19 Social Assistance Program, the DKI Jakarta Provincial Government has implemented a data collection mechanism (data collection, verification, and data validation) following applicable regulations. The provision of public information regarding the list of recipients of social assistance will follow the applicable rules and mechanisms under the mandate of the Republic of Indonesia Law No. 14 of 2008 concerning Freedom of Information.

6. Acknowledgment

We would like to express our gratitude to the Governor of DKI Jakarta and the Regional Secretary of DKI Jakarta. Also, we would like to express our gratitude to all Agencies that are involved in the COVID-19 policy in DKI Jakarta such as, the transportation agency, the communication and information office, the health department, the director of the Koja Regional General Hospital and the director of the Tarakan Regional General Hospital in Jakarta, and all the teams that have helped in completing this research.
7. Reference

[1] A. Joharudin, M. A. Septiadi, S. Maharani and T. D. Aisi, "panic syndrome covid-19: penekanan terhadap kebijakan yang diberikan," *jurnal perspektif*, vol. 4, no. 1, pp. 44-53, 2020.

[2] Li, Q., Guan, X., Wu, P., Wang, X., Zhou, L., Tong, Y., ... Feng, Z., "early transmission dynamics in wuhan, china, of novel coronavirus-infected pneumonia.,” *new england journal of medicine*, vol. 382, no. 13, pp. 1199-1207, 2020.

[3] Mufida, A, "polemik pemberian bantuan sosial di tengah pandemic covid 1," *adalah buletin hukum & keadilan*, vol. 4, no. 1, pp. 159-166, 2020.

[4] Arifin D, "presiden tetapkan covid-19 sebagai bencana nasional," *bnpb*, June 24, 2020. [online]. Available: https://bnpb.go.id/berita/presiden-tetapkan-covid19-sebagai-bencana-nasiona.

[5] Disantara, F. P., "the large scale social restrictions policy for handling the covid-19 pandemic," *jph*, 2020.

[6] Andriani, H, "effectiveness of large-scale social restrictions (psbb) toward the new normal era during covid-19 outbreak: a mini policy review," *journal of indonesian health policy and administration*, vol. 5, no. 2, 2020.

[7] Mukti, A., & Ramdhani, M. W., "lockdown policy as a corona disease (covid-19) management efforts asked from the environmental aspect of life based on law act no. 32 of 2009 concerning protection and management of environment," *veteran law review*, vol. 3, no. 1, 2020.

[8] Kang, M., Choi, Y., Kim, J., Lee, K. O., Lee, S., Park, I. K., ... & Seo, I., "covid-19 impact on city and region: what’s next after lockdown?," *international journal of urban sciences*, vol. 24, no. 3, 2020.

[9] Nicola, M., Alsufi, Z., Sohriabi, C., Kerwan, A., Al-jabir, A., Iosifidis, C., ... & Agha, R., "the socio-economic implications of the coronavirus pandemic (covid-19): a review," *international journal of surgery*, vol. 78, 2020.

[10] Williams, C., covid-19 and undeclared work: impacts, challenges and policy responses, Sarajevo: Regional cooperation council, 2020.

[11] Salari, N., Hosseimian-Far, A., Jalali, V., Vaisi-Raygani, A., Rasoulpoor, S., Mohammadi, M., ... & Khaleedi-Paveh, B., "prevalence of stress, anxiety, depression among the general population during the covid-19 pandemic: a systematic review and meta-analysis," *globalization and health*, vol. 16, no. 1, pp. 1-11, 2020.

[12] Tosepu, R., Gunawan, J., Effendy, D. S., Lestari, H., Bahar, H., ... "correlation between weather and covid-19 pandemic in jakarta, indonesia," *science of the total environment*, 2020.

[13] Nasri, L. A., Nunung, N., & Budhi, G, "social assistance program of local culture-based hope family program in south Jayapura district, Indonesia," *Russian journal of agricultural and socio-economic sciences*, vol. 81, no. 9, 2018.

[14] Lustig, N., Martinez-Pabon, V., Sanz, F., & Younger, S. D., "the impact of covid-19 lockdowns and expanded social assistance on inequality, poverty and mobility in Argentina, Brazil, Colombia and Mexico. Center for economic policy research (cepr) covid economics; vetted and real-time papers*, vol. 46, 2020.

[15] Suryahadi, A., Al Izzati, R., & Suryadarma, D, "estimating the impact of covid-19 on poverty in Indonesia," *Bulletin of Indonesian economic studies*, vol. 56, no. 3, 2020.

[16] Mogi, A., Rahayu, K. P., Sanjaya, R., Nurmono, N., & Sulistiyantri, S, "bantuan sosial bagi warga terdampak covid-19 kampung parigi rw 005.," *jurnal abdi masyarakat humanis*, vol. 2, no. 1, 2020.

[17] Rahmansyah, W., Qadri, R. A., Sakti, R. R. A., & Ikhsan, S., "penetapan permasalahan penyaluran bantuan sosial untuk penanganan covid-19 di Indonesia," *Jurnal pajak dan keuangan negara*, vol. 90, no. 102, 2020.

[18] Martinez, M. A., Cobo, M. J., Herrera, M., & Herrera-Viedma, E, "analyzing the scientific evolution of social work using science mapping," *Research on social work practice*, vol. 25, no. 2, 2015.
[19] Ahamad, M. M., Aktar, S., Rashed-Al-Mahfuz, M., Uddin, S., Liò, P., Xu, H., ... & Moni, M. A, "machine learning model to identify early stage symptoms of SARS-COV-2 infected patients," *Expert Systems with Applications*, vol. 160, 2020.

[20] Sun, T. Q., & Medaglia, R, "Mapping the challenges of artificial intelligence in the public sector: evidence from public healthcare," *Government Information Quarterly*, vol. 36, no. 2, 2019.

[21] Bonham-Carter, G. F., "Geographic information systems for geoscientists: modelling with GIS," *Elsevier*, 2014.

[22] Burrough, P. A., McDonnell, R., McDonnell, R. A., & Lloyd, C. D., "Principles of geographical information systems," *Oxford University Press*, 2015.

[23] Zhou, C., Su, F., Pei, T., Zhang, A., Du, Y., Luo, B., ... & Song, C, "Challenges to GIS with big data. Geography and sustainability.," *Elsevier*, 2020.

[24] Tangkudung, A. G., & Sugiharto, A, "Policy conflict between president Joko Widodo and governor of DKI Jakarta Anies Baswedan in fighting the spread of COVID-19.," *Jurnal Syntax Transformation*, vol. 1, no. 9, 2020.

[25] Pramanik, N. D., "Dampak bantuan paket sembako dan bantuan langsung tunai terhadap kelangsungan hidup masyarakat Padalarang pada masa pandemi covid 19.," *Jurnal Ekonomi, Sosial & Humaniora*, vol. 1, no. 12, 2020.