

Journal of Peace, Development and Communication



Volume 05, Issue 03, Sep 2021
pISSN: 2663-7898, eISSN: 2663-7901
Article DOI: <https://doi.org/10.36968/JPDC-V05-I03-14>
Homepage: <https://pdfpk.net/pdf/>
Email: se.jpdc@pdfpk.net

Article:	SUPER APP: MOBILE GOVERNANCE ANALYSIS IN MANAGING PANDEMIC IN INDONESIA
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Published:	30 th Sep 2021
Publisher Information:	Journal of Peace, Development and Communication (JPDC)
To Cite this Article:	Nafi'ah, A, Binti. "Super App: Mobile Governance Analysis in Managing Pandemic in Indonesia." <i>Journal of Peace, Development and Communication</i> , vol. 05, no. 03, 2021, pp. 149–160, https://doi.org/10.36968/JPDC-V05-I03-14
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Abstract

The government has launched a COVID19 data integration system to solve the chaotic COVID19 data problem in Indonesia. Unite Against COVID19 (BLC) is a database system on COVID19 as the basis data to determine policy. Now, the Indonesian government requires the use of the PeduliLindung application in every activity of the community in accessing public services. So this paper focuses on the strategy for implementing the PeduliLindung application in pandemic management. Researchers used qualitative analyzes, with primary and secondary data collection. Researchers interview three information from the Ministry of Communications and Information Technology as a public communications team in the working group to accelerate the management of COVID19. The results showed that the PeduliLindung application implementation strategy is expanding the internalization of PeduliLindungi into local government application platforms; tightened supervision/control during data input; Integration of population data with PeduliLindung so that it is automatic; Increasing digital access by providing internet to remote areas; using a physical card for people who don't have a smartphone.

Keywords: Strategy; Data Governance; COVID-19; Application

INTRODUCTION

The China-based COVID19 outbreak has spread to more than 100 countries around the world, changing the status of a global health emergency. The COVID19 outbreak has become the fastest, most widespread, and most difficult infection to overcome in China in the past 70 years (Sun et al., 2020). The virus is spreading rapidly from person to person, with a total of 249,743,428 confirmed cases and 5,047,652 deaths worldwide as of November 8, 2021, causing fear and panic in the public (World Health Organization, 2021). However, a vaccine has so far been tested and there are still many uncertainties such as the origin, type and details of the virus.

Although the origin of the coronavirus cannot yet be determined, there are three characteristics that can define this new virus. These characteristics are a very rapid rate of spread, the elderly and immunosuppressed are more susceptible to this virus, and different recovery rates (Shaw, 2020). These traits make people worry more and panic. Recovery rates for patients are relatively different. The global recycling rate is relatively low, 28% to 30%. The cure rate of China, Korea, and Japan has a relatively higher cure rate than that of European countries, Iran, and the United States.

But at this time, digital developments in helping post-pandemic recovery have been going well. The role of digital in tackling pandemic is very large. Even some countries rely on digital as a weapon against covid (eHealth Network, 2020). After the wave of covid in January-May 2021, health applications increased sharply. Every country has a mobile health application, at least containing data on the number of infected, the area of the virus spread, where the vaccine is, how to get the vaccine, and others related to the pandemic (Adeniyi et al., 2020). Singh, et al (2020) identified a research article discussing mobile health applications across countries. As a result, there are 46 articles discussing applications used by the countries studied. Singh, et al showed 52% of applications were on contact tracing, 24% of applications on quarantine, 24% on symptom monitoring, and 3% on information provision. More than half came from government sources, only 10% came from private organizations, and 10% from universities. There are 6 (21%) apps available on Android or iOS, and 10 (34%) available on both platforms.

The use of health mobile applications is not without reason. The pandemic has a serious impact on physical and mental health. Several studies inform that the COVID-19 pandemic has an impact on people's mental health. Stress (8%) and Symptoms of anxiety and depression (16-28%) are common psychological reactions to the COVID-19 pandemic (Rajkumar, 2020). These symptoms affect the quality of sleep so that it affects immunity. People's habits also turn into panic. Panic behavior can be demonstrated such as accessing the browser using keywords about COVID-19 rising and panic buying. The source of this behavior and mental change in society is misinformation as in Vieira's paper, et al (2020). One priority that has not been forgotten during the COVID-19 pandemic was misinformation (Mesa Vieira et al., 2020).

Disinformation not only indicates inaccuracies in the information, it can also be the result of information from non-experts and commercial interests. Misinformation can lead to increased anxiety and emotional tension. Excessive anxiety due to information about the disease leads to erratic behaviors such as panic when buying food. Therefore, the availability of valid information from researchers, academics, and even policy makers is needed (Xue et al., 2020)(Alamiyah et al., 2021; Rahman et al., 2021).

Policymakers must predict the future of a pandemic, assess the impact of current interventions, and evaluate the effectiveness of alternative life-saving containment strategies (Xue et al., 2020). This requires COVID19 data. The government has implemented a COVID19 data integration system to solve the chaotic COVID19 data problem in Indonesia. Unite Against COVID19 (BLC) is a database system on COVID19 as reference data when setting guidelines.

Unfortunately, however, it is estimated that the number of people monitored (ODP), patients monitored (PDP), deaths in Indonesia due to COVID19, diseases caused by the SARSCoV2 virus are much higher than the official figures (Arif et al., 2020). Delays in testing and treatment have resulted in the death of many ODP and PDP before the test was performed, so it was not recorded in real time.

In Indonesia, health mobile applications have been used, namely the PeduliLindung application. This paper focuses on analyzing how the PeduliLindung application can overcome the pandemic and become a super app during the pandemic. This is related to government policies that require the use of the PeduliLindung application for every citizen who has activities outside the home. Although previously, the government used the BLC application.

LITERATURE REVIEW

The focus of our review literature is on the topic of data governance, where this topic will lead to how governments manage COVID19 data to manage COVID19 outbreaks through data publication. We reviewed a variety of data governance literature and decided to use the concept of data governance that was studied by Abraham, et al., (2019). The definition of data governance according to Abraham, et al. (2019) is data governance that establishes a multifunctional framework for managing data as a strategic asset of the company. In doing so, data governance determines the rights and decision-making responsibility for organizational data decisions. Additionally, data governance formalizes data policies, standards and procedures and monitors compliance. Abraham et al. explains that the definition of data governance has six parts. First, data management is a collaborative effort between functional areas and data areas. Second, data governance is a framework that provides structure and formalization for data management. Third, data governance focuses on data as a strategic business asset. Fourth, data governance determines what rights and accountability decisions need to be made about the data, how these decisions are made, and who within the organization has the right to make these decisions. Fifth, data governance develops data policies, standards and procedures. Sixth, data governance monitors compliance, which means that data governance is the implementation of controls to ensure compliance with data policies and standards.

These six sections show the difference between data governance and data management. Data governance refers to the decisions that need to be made and who makes them, while data management is about making those decisions as part of the day-to-day implementation of data governance policies (Hagmann, 2013; Khatri & Brown, 2010; Otto, 2013). COVID19 data governance shows decisions using the integration of data from various sources, both online and offline, and work teams as decision makers. This is why researchers use the concept of data governance.

Abraham et al. (2019) explain that data governance has 6 dimensions, namely governance mechanisms, organizational scope, domain scope, data scope, antecedents and consequences. In this article, the author focuses on governance mechanisms where this dimension is vital and strategic for the development of COVID19 data governance. Additionally, following the study's objectives, the researchers focused on how the COVID19 data governance mechanism provides a single COVID19 data across all sectors.

The governance mechanism consists of a formal structure that connects data management, IT and business functions; formal processes and procedures for decision making and monitoring; and practices that support active participation and collaboration between stakeholders. Abraham et al.

(2019) conclude that the data governance mechanism consists of a structural mechanism, a procedural mechanism and a relationship mechanism.

First, structural mechanisms include (i) roles and responsibilities and (ii) assignment of decision-making authority. The primary function and governing body are made up of executive support, data governance leaders, data owners, data administrators, data governance boards, data governance offices, data producers and data consumers. The attribution of decision-making authority determines which organizational units have the mandate for actions related to data governance.

Second, procedural governance mechanisms aim to ensure that data is accurately recorded, securely stored, used effectively and adequately shared (Borgman et al., 2016). Procedural mechanisms consist of (i) data strategies; (ii) policy; (iii) standard; (iv) process; (v) procedure; (vi) contractual agreements; (vii) performance measurement; (viii) compliance monitoring; and (ix) problem management.

Third, the relational governance mechanism facilitates collaboration between stakeholders (Borgman et al., 2016). Relational governance mechanisms include (i) communication; (ii) training; and (iii) coordinate the decision-making process.

The conceptual framework attached by the authors aims to understand the vital position of governance mechanisms in the broader framework of data governance. The study's approach uses the concept of governance mechanisms, including structural mechanism, procedural mechanism, and relational mechanism to explain how implementing the COVID19 data governance mechanism provides COVID19 data across all sectors.

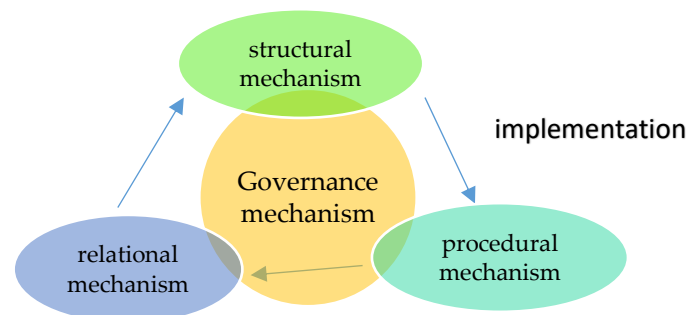


Figure 1. A conceptual framework for the COVID-19 data governance mechanism in Indonesia
Source: Abraham, et.al (2019)

In addition to examining BLC governance, researchers analyzed the TOWS super app PeduliLindung. This application is a manifestation of the seriousness of the Indonesian government in tackling the pandemic. The use of this digital application has entered or is integrated into many applications and is used by almost all public services. Researchers analyzed the TOWS policy of using the PeduliLindung super app. The TOWS (Threats, Opportunities, Weaknesses, Strengths) analysis is based on this proven SWOT model. It allows us to think of strategies around the internal and external areas.



Figure 2. TOWS analysis

A TOWS analysis should be performed at all levels of company, the entire organization, a department, or even a team. In addition, you can use it to carry out processes in your team, a communication campaign or even yourself. This tool is a great way to see the big picture and start developing some strategies. As with all strategies. It is important that you and your team be specific and avoid unfamiliar areas. When looking at the external business environment or even other campaigns, always use the PESTLE analysis and a Porter Five Forces model, as these simplify the macro environment analysis.

METHODS

This study used the qualitative method. The purpose of this study is to analyze the COVID19 data governance mechanism to support the data integration policy. By understanding the existing structural, procedural, and relationship mechanisms, the researcher can infer the weaknesses for providing COVID19 data to the public. This weakness could later become a suggestion for the Indonesian government to provide COVID19 data with good data governance. In this study, intentional

was used as a technique to determine whistleblowers. This technique takes into account the direct participation of whistleblowers in the governance mechanism. Whistleblowers were determined based on their roles in governance mechanisms, up to three whistleblowers from the Ministry of Communications and Information. Informant was chosen as the public communication team in the national working group for the management of COVID19 data. The researchers conducted telephone interviews and asked questions via WhatsApp. The researchers collected primary data in the period November-November 2021. The limitation of this research is that the researchers only explore primary data from the central working group and have not yet extracted the data from the point of view of the regional evaluation working group.

The procedures for data collection in this qualitative study involved three types of strategies, namely qualitative observations, qualitative interviews, and qualitative documents (Creswell, 2010). Once the data was collected, the validity of the data was confirmed using triangulation techniques. The researcher used source triangulation and data collection techniques. The data obtained from the data collection results were then presented and analyzed through interviews, observations and documentation studies at the research sites. The data analysis used Miles and Huberman's approach to qualitative analysis technique, which includes data reduction, data modeling and completion phases. Therefore, the researchers collect the data from the interviews and then classify them according to the third component of the mechanism. Next, we analyze it by comparing it with secondary data. And then analysis TOWS of implementation super app PeduliLindungi. So we come to a conclusion like the strategic implementation super app PeduliLindungi.

IMPORTANT FINDING

To avoid incorrect information and data, through the working group's COVID19 acceleration management channel, access to information on a single COVID19 real data is provided (Indiyati et al., 2020). This organization was formed under the name of the Task Force for the Acceleration of the Management of COVID19. Based on the decision of the executive director of the working group for the acceleration of the management of COVID19 n. The Ministry of Health with its online hospital supports the data on <https://data.covid19.go.id> through the working group team (Suratnoaji et al., 2020). The Ministry of Information and Communication Technologies supports the application of the care and protection of the creation of the <https://covid19.go.id> portal. BLC is an integrated information system to speed up data recording in order to speed up the management of COVID19 in Indonesia. This system will make it easier for the public to see the distribution of COVID19 cases in real time, promote data integrity and accuracy, and connect the flow of logistics distribution to hospitals, laboratories and the health service (Kemenkes RI, 2020). With regard to the management and publication of data relating to COVID19, the working group publishes the portal <https://covid19.go.id>. This portal provides the public with information on COVID19 data. The Ministry of Communications and Information has become a COVID19 data management center through the portal <https://covid19.go.id>.

Decision-making authority on COVID19 data centers with the president. The President uses his authority to issue a presidential decree to expedite the handling of COVID19 through a task force. Through the amendments to the decree of the President of the Republic of Indonesia n. 9/2020 on the amendments to the presidential decree n. 7/2020 on the Working Group to Accelerate the Management of COVID19, the Working Group Group has accelerated data collection. The working group made up of Penta helix between ministries, intersectoral and intersectoral agencies, has implemented a new application, namely the Unite Against COVID19 (BLC) system to facilitate the analysis and formulation of future policies. This system is a subdomain of the covid19.go.id portal. To facilitate and accelerate the delivery of daily data and information from public health centers, hospitals and regional health offices, the working group provides several channels for reporting. Daily COVID19 patient / suspected / close contact data at the Community Health Center can be reported directly from the Public Health Center to the Task Force via the Task Force Information System website (<https://data.covid19.go.id>) or using a paper form for which it is possible to send the summary of the data via WhatsApp or email datacovid19@bnpb.go.id.

Coordination of the decision-making process is very fast. This is in line with the development of increasingly numerous and massive positive patients (Roselina et al., 2021). Various technical and unspecified issues were communicated to the team and decided together quickly and responsively. This can be seen from the field of public communication, where the data collection process is carried out in a massive, complete, fast and accurate way involving different channels that can be done by various 'fields' of users (Sugihamretha, 2020). The public communication task force team also managed to integrate various variant data (online or manual) into an integrated COVID19 data. This certainly makes it easier to make additional decisions based on the integrated data. Something positive that can be learned from decision-makers in emergency conditions such as the COVID19 pandemic in Indonesia is the clarity of a single data that is in real time like a database to formulate policies quickly and accurately (Santoso et al., 2021).

Second, procedural mechanisms consist of (i) data strategies; (ii) politics; (iii) standard; (iv) process; (v) procedure; (vi) contractual agreements; (vii) performance measurement; (viii) compliance monitoring; and (ix) problem management (Abraham, et.al, 2019). Regarding

procedures, COVID19 Indonesia data management has implemented strategies, policies, standards, processes, procedures, and handling of data issues.

The data management strategy is performed online or manually. COVID19 data was provided by the Ministry of Health and the Bnpb team of experts. The online COVID19 data management strategy is done through the public communications team providing users and IDs to log into each region. Each region then reports the progress of the COVID19 case every day through the website by entering a username and ID to log in. Manual data management strategy by manually recording each region's data using WhatsApp, phone, email and health search forms.

Although many data collection channels still exist, they are always integrated both manually (by submitting data or automatically via the application programming interface (API)) and online. Regions have COVID19 web subdomains respectively. According to data from the Ministry of Communications and Information, up to 73.80% or 30 local governments already have COVID19 subdomains. This shows that the provision of COVID19 data services in regions mainly uses website media, in addition to regions using call centers as well.

The latest strategy to create integrated data through the use of a channel is the website <https://covid19.go.id/> for accessing the browser and the Unified Opposition COVID19 (Bersatu Lawan COVID19 / BLC) application for access to mobile phones. Through the app, the public can view information such as the vulnerability level at the sub-district level, looking for background information and other up-to-date information. BLC has a system function which is to accelerate the data recording flow at the level of health centers, hospitals, laboratories and health offices of the regions. Not only that, but BLC can also work to uncover Indonesian distribution location, COVID19 case distribution, Rapid Test Results Record (RDT), and log needs and logistic distribution record in hospitals, laboratories and health centers. Offices.

Data management policies continue to improve rapidly. In the period from January to May 2020, the COVID19 data policy has changed many times. The COVID19 data management policy was initially run online with each COVID19 health center reporting managed cases, but faced roadblocks in areas that are difficult to locate on the internet and then manually reported. Data center management is also done manually. So as time went on with COVID19 data continuing to increase dramatically, the distribution of the data also continued to spread widely across the country with the channel variants used by each region, so the government routed the data on. COVID19 data integration at the end. April 2020. On May 5th 2020, the BLC application can be downloaded from the Play Store of the Android system, for iOS it did not work together.

Initially, this policy did not have a separate standard operating procedure for providing COVID19 data until April 2020. In a limited meeting on April 13, 2020, the President ordered the use of the Data Integration Guidelines. This document is a reference for local governments in synchronizing data with the National Working Group for Accelerating the Management of COVID19. Depending on the results of the limited meeting, the data should be integrated or create a single data in real time.

The provincial government is expected to be able to collect COVID19 data from all regencies and city administrations in their respective regions. Consolidated data is complete data by name by address. Support the acceleration of data distribution and validation to optimize the Office of Information and Communications Technologies as an ICT technical team in the region in handling COVID19, especially in providing API (Application Programming Interface) and use of general applications for the management of COVID19, namely <https://data.covid19.go.id>. The reports are made in real time.

In order for the same distribution of COVID19 data to be available by region, the Ministry of Health and a team of experts from the working group have prepared an epidemiological investigation module. The technical mechanism is that the Joint Working Group for Communication and Information distributes Puskesmas, Laboratory, Health Service and Hospital Accounts through the Ministry of Communication and Information of the local government. Subsequently, after completing the form, it is returned to the regional communication and information agency and then reported to the communication and information agency. Subsequently, the Ministry of Communications and Information updates the data relating to COVID19 every second by filling in the form of the Regional Agency for Communications and Information. In principle, the data is collected and processed together.

For centralized applications, data is collected on the web portal <http://data.COVID19.go.id>. The content of the web <https://data.covid19.go.id> also retrieves data from the Online Hospital of the Directorate General of Health Directorate General of Health Services as additional data. The data is compared and deleted until it can be generated at <https://covid19.go.id/petasebaran>. Even so, there is still a lot of incomplete data, for example 91.6% do not include data on positive COVID19 symptoms and 96.7% do not include COVID19 comorbid conditions. Another limitation is that some areas have difficulty accessing applications via the website due to signal limitations. However, the task force team worked on these limitations by summarizing the data using the printed form provided and then sent via WhatsApp or email datacovid19@bnpb.go.id.

To overcome the COVID19 data inequality problem that was not in real time, the task force team quickly integrated the data. The existence of a web channel and a BLC application makes it easier for the government to determine the policies of the red, yellow and green zones. However, it should be noted that the contents of the Epidemiology investigation forms that have been carried out are suspicious, PDP and COVID19 data, at least give an image of an approach to truth that occurs in society.

Third, the relational governance mechanism facilitates collaboration among stakeholders (Borgman et al., 2016). Relational governance mechanisms include (i) communication; (ii) training; and (iii) coordination of decision-making. The institutions involved are quite active and cooperative, although there are some technical barriers such as signal restrictions for the border area. Communication between the institutions involved in the working group was quite good. This can be seen in the implementation of COVID19 data delivery, moving closer to real time through changes in and out of COVID19 patients throughout the hospital. Although most data transfers are still done manually.

In data.COVID19.go.id there is training for data entry by the team of experts of the working group. Limited forms of online and face-to-face training. Coordination is still ongoing. Based on the Communication and Information Circular of April 2020 addressed to all governors and regents / mayors, it includes the provision of guidelines for cavitation data19. The COVID19 data in Indonesia is not yet fully integrated. Following instructions from the President of the Republic of Indonesia in a limited meeting on April 13, 2020 to consolidate national data in the treatment of COVID19 between the regional and central government, the BNPB and the Ministry of Communication and Information, it has prepared a guide about data. integration.

The problem of institutional relations is seen more in the socialization process as COVID data is reported for all regions of Indonesia. Initially, it was very difficult to do the reporting relying on the conscience of each region for reporting. Even the task force team only recaps those who want to report, while other regions that do not report are considered green areas. Even if there are not necessarily cases in which cases have not yet been reported. At this particular time, real-time

data reporting is required and changes can be reported at any time. Therefore, the socialization of reporting procedures becomes the spearhead in implementing a real-time reporting approach. Establish coordination in each region to process the data quickly and report it to the center so that the center can process the processing quickly and share it with the public.

Singapore is using the “TraceTogether” app to track the coronavirus. India uses “AarogyaSetu” app. Australia uses the “CovidSafe” app. Currently, the Indonesian government is using the PeduliLindung application for the integration of Covid data. This application is a form of development of the BLC application. The Indonesian government uses this application for all community activities to access public services by showing a vaccine certificate or scanning a QR code. The application will be used to track the spread of the corona virus based on information provided by users.

Table 1. Analysis TOWS Super app PeduliLindungi

	Strenghts	Weaknesses
	<ul style="list-style-type: none"> — Legality is clear (the policy already exists) must be used by all public services. — Changes in public awareness behavior 	<ul style="list-style-type: none"> — High probability of inaccuracy — Biased analytics — Not transparent (hasn't produced actual positive results) — The existence of "surveillance slinks" — Low community digital access — The application of PeduliLindung is still limited in 6 sectors (trade, transportation, tourism, offices/factories, places of worship, education) — Just trial 5 cities — Only 9 million people access PeduliLindung (as of September 25, 2021) it has been postponed 48 million times, so there are still few who access it. — Those with limited smartphones (58.6%)
Opportunities	SO	WO
<ul style="list-style-type: none"> — Integration PeduliLindungi app with e-commerce platform 	<ul style="list-style-type: none"> — Expanding the internalization of PeduliLindungi into local government application platforms 	<ul style="list-style-type: none"> — Tightened supervision/control during data input — Integration of population data with PeduliLindung so that it is automatic
Threats	ST	WT
<ul style="list-style-type: none"> — Internet access is not evenly distributed 	<ul style="list-style-type: none"> — Increasing digital access by providing internet to remote areas 	<ul style="list-style-type: none"> — Using a physical card for people who don't have a smartphone

— The level of digital literacy of the community is low		
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CONCLUSIONS

Data management has been based on structural, procedural, and relational mechanisms. Indonesia's COVID19 data management structure mechanism has been strongly formed through task force teams from the national to regional levels. COVID19 data problem decisionmaking authority has been centered on the task force team.

In the procedural data mechanism, since the inception of COVID19 in Indonesia, the data collection procedures vary according to conditions. Encouraged by the time the virus spreads, data collection is done online or manually and then managed together. At present data management has led to the point of data integration (Bersatu Lawan COVID19/BLC).

The relation mechanism shows that the coordination and communication relationship related to data collection and data processing between central and regional task forces has been done quite well. Coordination is always done quickly, following changes in policy acceleration of COVID19 data reporting.

On the other hand, covid19 data governance has begun to be integrated, there are several challenges. The challenge is in the form of pentahelix coordination between stakeholders; incoming data is not fully integrated; double input data; low level of verification and validation; some of the inputs are not yet on time; many egosectoral regions have their own publication sources; and some areas still do not access the internet.

The PeduliLindung application implementation strategy is expanding the internalization of PeduliLindungi into local government application platforms; tightened supervision/control during data input; Integration of population data with PeduliLindung so that it is automatic; Increasing digital access by providing internet to remote areas; using a physical card for people who don't have a smartphone.

REFERENCES

- Abraham, R., Schneider, J., & vom Brocke, J. (2019). Data governance: A conceptual framework, structured review, and research agenda. *International Journal of Information Management*, 49, 424–438. <https://doi.org/10.1016/j.ijinfomgt.2019.07.008>
- Adeniyi, E. A., Awotunde, J. B., Ogundokun, R. O., Kolawole, P. O., Abiodun, M. K., & Adeniyi, A. A. (2020). MOBILE HEALTH APPLICATION AND COVID-19: OPPORTUNITIES AND CHALLENGES. *JOURNAL OF CRITICAL REVIEWS*, 7(15), 8.
- Arif, A., Arlita, D., & Piawai, D. (2020, April 23). *Urgent Need for Transparent COVID-19 Data*. <https://kompas.id/baca/english/2020/04/23/urgent-need-for-transparent-COVID-19-data/>
- Borgman, C. L., Golshan, M. S., Sands, A. E., Wallis, J. C., Cummings, R. L., Darch, P. T., & Randles, B. M. (2016). Data management in the long tail: Science, software, and service. *International Journal of Digital Curation*, 11(1), 128–149.
- Creswell, J. W. (2010). *Research Design: Pendekatan Kualitatif, Kuantitatif, dan Mixed*. Pustaka Pelajar.
- Damayanti, A. (2020). Instagram sebagai Medium Komunikasi Risiko di Masa Pandemi COVID-19: Studi Netnografi terhadap Komunitas Online KawalCOVID19.id. *Jurnal Komunikasi Pembangunan*, 18(02), 176–193.
- eHealth Network. (2020). *Mobile applications to support contact tracing in the EU's fight against COVID-19*. https://ec.europa.eu/health/sites/default/files/ehealth/docs/covid-19_apps_en.pdf
- Hagmann, J. (2013). Information governance – beyond the buzz. *Records Management Journal*, 23(3), 228–240. <https://doi.org/10.1108/RMJ-04-2013-0008>
- Indiyati, D., Chotijah, S., Khusnia, H. N., & Muhlis, M. (2020). Media vs public trust during the pandemic. *JCommsci - Journal Of Media and Communication Science*, 1(1), 38–44. <https://doi.org/10.29303/jcommsci.v1i1.95>
- John Leon Singh, H., Couch, D., & Yap, K. (2020). Mobile Health Apps That Help With COVID-19 Management: Scoping Review. *JMIR Nursing*, 3(1), e20596. <https://doi.org/10.2196/20596>
- Kemenkes RI. (2020). Pedoman Pencegahan dan Pengendalian Corona Virus Disease (Covid-19). In *Direktorat Jenderal Pencegahan dan Pengendalian Penyakit* (p. 135). Kementerian Kesehatan RI Direktorat Jenderal Pencegahan dan Pengendalian Penyakit (P2P).
- Khatri, V., & Brown, C. V. (2010). Designing data governance. *Communications of the ACM*, 53(1), 148–152. <https://doi.org/10.1145/1629175.1629210>
- Mesa Vieira, C., Franco, O. H., Gómez Restrepo, C., & Abel, T. (2020). COVID-19: The forgotten priorities of the pandemic. *Maturitas*, 136, 38–41. <https://doi.org/10.1016/j.maturitas.2020.04.004>
- Otto, B. (2013). On the evolution of data governance in firms: The case of Johnson & Johnson consumer products North America. In *Handbook of data quality* (pp. 93–118). Springer.
- Rahman, F. F., Tranggono, D., & Achmad, Z. A. (2021). Instagram account @surabaya as a Trusted Source of Information for Surabaya Students. *JOSAR: Journal of Students*

- Academic Research*, 7(1), 58–71.
<https://ejournal.unisbablitar.ac.id/index.php/josar/article/view/1534>
- Roselina, E., Asmiyanto, T., & Andriany, M. (2021). Health Information-Seeking Behavior on The COVID-19 Pandemic: Social Media Usage by Gen Z in Jakarta, Indonesia. *Library Philosophy and Practice (e-Journal)*, 4920, 1–7.
- Rajkumar, R. P. (2020). COVID-19 and mental health: A review of the existing literature. *Asian Journal of Psychiatry*, 52, 102066. <https://doi.org/10.1016/j.ajp.2020.102066>
- Shaw, A. (2020, Oktober). *Brent Council outlines 2021/22 budget process amid covid-19*. <https://www.harrowtimes.co.uk/news/18766392.brent-council-outlines-2021-22-budget-process-amid-covid-19/>
- Sun, S., Yu, K., Xie, Z., & Pan, X. (2020). China empowers Internet hospital to fight against COVID-19. *Journal of Infection*, 81(1), e67–e68. <https://doi.org/10.1016/j.jinf.2020.03.061>
- Suratnoaji, C., Nurhadi, & Arianto, I. D. (2020). Public opinion on lockdown (PSBB) policy in overcoming covid-19 pandemic in indonesia: Analysis based on big data twitter. *Asian Journal for Public Opinion Research*, 8(3), 393–406. <https://doi.org/10.15206/ajpor.2020.8.3.393>
- World Health Organization. (2021). *WHO Coronavirus Disease (COVID-19) Dashboard*. https://covid19.who.int/?gclid=EAIaIQobChMI6p6O1sHj6QIVFSUrCh1oKgeVEAAYASAAEgIRCvD_BwE
- Xue, L., Jing, S., Miller, J. C., Sun, W., Li, H., Estrada-Franco, J. G., Hyman, J. M., & Zhu, H. (2020). A data-driven network model for the emerging COVID-19 epidemics in Wuhan, Toronto and Italy. *Mathematical Biosciences*, 326, 108391. <https://doi.org/10.1016/j.mbs.2020.108391>