

## The Public Participation in Dealing with Covid-19 through The Use of “PeduliLindungi” Application (Special Region of Yogyakarta)

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### ABSTRAK

From the end of 2019 up to 2022, Covid-19 has spread in Indonesia. The government also tries to handle; one of which is through the use of application-based information technology, namely PeduliLindungi. This application was launched to help preventing the spread of Covid-19 by sharing the data and information between people. Therefore, this study examines the public participation level in the use of PeduliLindungi application for handling Covid-19 (Yogyakarta Special Region) and finds out the role of PeduliLindungi application in dealing with the spread of Covid-19. The data used were from the primary data through administering the questionnaire and secondary data (including: journals, books, and official government websites). This study used 2 variables and 7 measurement indicators. The first variable focus on the public participation in the use of PeduliLindungi application, which measures 4 indicators, involving the identification of Covid-19 cases in the Special Region of Yogyakarta, the public understanding of the PeduliLindungi application, the ease of using the PeduliLindungi application and the public attitudes in using the PeduliLindungi application. Then, the second variable was about the application of (PeduliLindungi) in handling Covid-19 which focused on 3 indicators, namely the PeduliLindungi application and its features, the uses and benefits of the PeduliLindungi application, and the PeduliLindungi application as the socialization strategy. The results indicated that the public participation in the use of PeduliLindungi application was sufficient since this was related to the mandatory vaccination for the public although its use was still not optimal, but so far this application had been operated sufficiently and produced positive results for the government and the public, so until now Indonesia situation was getting better from covid-19. Moreover, the government should focus on their aims and highlight the point lines, so the people did not feel confused between one policy to another.

**Kata Kunci:** *PeduliLindungi application, public participation, covid-19, public policy, artificial intelligence, technology of information*

### BACKGROUND

Coronavirus or Covid-19 (coronavirus disease 2019) is a new disease with a type of disease caused by a virus that has shocked the world and has become a disaster for most countries in the world, including Indonesia. In December 2019, a novel coronavirus was discovered in Wuhan, Hubei Province, China, which caused a rapid spread of

pneumonia cases in Wuhan and adjacent areas in China (Sheng, 2020). Until the end of 2020, Covid-19 is still a problem in various countries, because its impact is very large and widespread. This virus first entered Indonesia as described above by Putri (2020) that “President Joko Widodo reported that he first found two cases of COVID-19 infection in Indonesia on March 2, 2020”. As a

result, several sectors are affected by this outbreak.

The impacts that occur as a result of Covid-19 include various sectors such as health, economy, and society, which greatly affect public activities, thus harming various parties, be it the state, the private sector, and the public itself. This has caused a lot of controversy around COVID-19, including the weakening of the economy and social activities being banned for the time being (Aulia et al., n.d.). According to (Dwina, n.d.) “The impact of the Covid-19 outbreak has harmed various economic actors”.

This virus is fast in its spread so it cannot be denied that so far many countries have been declared exposed to Covid-19. According to WHO, Globally, as of 6:51 pm CET, 15 December 2020, there have been 71,581,532 confirmed cases of COVID-19, including 1,618,374 deaths, reported to WHO (*WHO Coronavirus Disease (COVID-19) Dashboard / WHO Coronavirus Disease (COVID-19) Dashboard*, n.d.). Then for data in Indonesia according to WHO, In Indonesia, from Jan 3 to 6:51 pm CET, 15 December 2020, there have been 623,309 confirmed cases of COVID-19 with 18,956 deaths (*WHO Coronavirus Disease (COVID-19) Dashboard / WHO Coronavirus Disease (COVID-19) Dashboard*, n.d.).

Furthermore, if the data related to Covid-19 is more in terms

of regions in Indonesia such as the province of the Special Region of Yogyakarta, citing information obtained from (*UPDATE Covid-19 Di Jatim, DIY, Bali, NTT, NTB, Kalbar Dan Kalsel 14 Desember 2020 Halaman All - Kompas.Com*, n.d.) that “Based on data in the last 24 hours until Monday (14/12/2020) at 12.00 WIB, Covid-19 cases in the DIY province, Positive: 8,258, Recovered: 5,668, and Died: 169”. The information provided has referred to the latest data sourced from Wikipedia and JHU CSSE COVID-19 Data. Currently, the Covid-19 case in Yogyakarta continues to grow, this is because of the implementation of the New Normal and Yogyakarta is one of the tourist areas that are in great demand by the public, so at this time, the Special Region of Yogyakarta with a red zone status is included in the top 10 regions with Covid-19 cases most in Indonesia.

With the continued increase in Covid-19 cases, the government's efforts in dealing with Covid-19 have been carried out in various ways, including by carrying out information technology-based handling. Big data and artificial intelligence (AI) have helped facilitate COVID-19 preparedness and the tracking of people, and so the spread of infection, in several countries (Whitelaw et al., 2020). According to Etikasari et al. (2020) that “One of the solutions to support early preventive measures is using Information Communication

and Public Education (IEC) about Covid-19 including the development of the spread, symptoms, and steps that must be taken by the public". Utilizing information technology in handling Covid-19, will support the *social distancing* implemented by the government.

Currently, the information technology created by the government in preventing Covid-19 is the "PeduliLindungi" application. This application will further identify people who have been in close proximity to people who have tested positive for COVID-19 or PDP (Patients Under Monitoring) or ODP (People Under Monitoring) (*Mengenal Aplikasi PeduliLindungi: Cara Kerja Dan Menggunakannya - Tirto.ID*, n.d.).

Of course, with this mobile-based application, the handling of Covid-19 will be faster, because in this digital era the majority of people already have cellphones. However, handling Covid-19 with this application may experience problems. As explained below, the PeduliLindungi application developed by PT Telekomunikasi Indonesia Tbk, (Telkom) and the Ministry of Communication and Information (Kominfo) has not been widely used by the Indonesian population (Bisnis.com, 2020).

That way researchers want to know how the public participation in this application in dealing with Covid-19. Meanwhile, as we know that with this application there needs

to be cooperation between the government and the public itself.

## **METHOD**

This study uses a mixed-method research method, it is explained that the mixed method is a research method that is applied when the researcher has questions that need to be tested in terms of outcomes and processes and involves a combination of quantitative and qualitative methods in one study Masrizal (2012).

## **FINDING AND DISCUSSION**

The first case officially announced by the local government (Yogyakarta) on March 15, 2020, was a three-year-old baby who two weeks earlier went with his parents to Depok, West Java (*Corona Di Yogyakarta*, 2020). Currently, Special Region of Yogyakarta province is one of the provinces included in the top 10 provinces that contributed to the highest number of confirmed cases of Covid-19 in Indonesia, with the order of provinces as follows: DKI Jakarta, West Java, Central Java, East Java, East Kalimantan, and then Special Region of Yogyakarta which contributed as much as 3.6% confirmed cases from 34 provinces.

Rapidly, the total of the confirmed cases in the world had reached 213,050,725 cases (*WHO Coronavirus (COVID-19) Dashboard / WHO Coronavirus (COVID-19) Dashboard With Vaccination Data*, n.d.). Then, Indonesia, the number of

confirmed cases of Covid-19 reached 4,008,166 confirmed cases (*Peta Sebaran COVID-19 / Covid19.Go.Id*, n.d.). Meanwhile, in the Special Region of Yogyakarta, there were 145,863 cases (*Yogyakarta Tanggap COVID-19*, n.d.).

The following table is the detail of the confirmed cases in the Special Region of Yogyakarta, Indonesia based on the particular categories.

**TABLE 1. LINKAGES OF COVID-19 CASE IDENTIFICATION**

KATEGORI	INDONESIA	YOGYAKARTA
Confirmed COVID-19	4.008.166	145.863
Healed	3.606.164	125.182
Died	128.252	4.653
Active Case	273.750	16.028
Suspect / reported	260.434	82.250
Vaccine 1	58.468.810	-
Vaccine 2	32.640.998	-
Probable	-	2.346

Source: covid19.go.id dan corona.jogjaprov.go.id (25 August 2021)

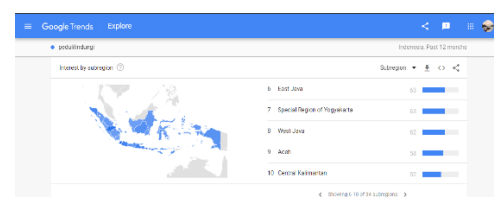
The table above shown that these data were quite large for the area with tourism potential and student city, like the Special Region of Yogyakarta. It is undeniable that Covid-19 can indeed spread quickly from one to another because Covid-19 is a virus which is transmitted through air.

### **Public Participation in the Use of “PeduliLindungi” Application**

By considering that Indonesia is the fifth largest country in the use of social media, now people are no longer left behind in using

smartphones. Many applications are used to simply seek information or enjoy entertainment. During the Covid pandemic, the Indonesia government did not stay silent seeing this momentum. The government, KOMINFO, and the Ministry of Health created the application that is expected to mitigate the Covid-19 disaster in Indonesia (C. E. Putri & Hamzah, 2021). However, the PeduliLindungi application that relies on exchanging information from its users was still very small, meaning that the government's policy to use this application as the way of dealing with Covid-19 was still in the category far from expected.

By recognizing the participation of using this application, the real data are obtained from the quality of this application. The public participation in a policy is very important to be measured, including the success, effectiveness, and efficiency of the policy implemented by the government.



Source:

<https://trends.google.co.id/trends/explore?q=pedulilindungi&geo=ID>

**Picture. 1.** The Subregion of Yogyakarta on the Google Trends

Public participation in the PeduliLindungi application to this point was still only limited to

vaccination obligations and to claiming rather than to vaccine certificates which are useful for accessing existing public locations.

### Descriptive Test Appendix

A descriptive test is a test used by researchers to determine descriptive statistics related to the application of statistical methods to collect, process, present, and analyze quantitative data descriptively (Suprayogi, n.d.).

	N	Minimum	Maximum	Mean	Std. Deviation
Partisipasi	100	46	75	58.55	5.281
Aplikasi Peduli Lindungi	100	30	50	39.37	3.738
Valid N (listwise)	100				

Source: SPSS application

**Picture. 2.** The table of descriptive test/descriptive statistic

Based on the data above, the participation variable showed that the minimum score, was 46, and then the maximum score was 75, the average value was 58.55 and the standard deviation (level of data distribution) of 5.28. Meanwhile, the PeduliLindungi application variable revealed that the minimum score was 30, then the maximum score was 50, and the average value was 39.37 and the standard deviation showed 3.73.

### Normality Test Appendix

The normality test is used to determine whether in the regression model the public participation variable is normally distributed or not. This means that the respondent's answer to the questionnaire produces different answers from one respondent to another, so it can show

normal conditions that are worthy of being tested.

	Partisipasi	Aplikasi Peduli Lindungi
N	100	100
Normal Parameters <sup>a,b</sup>	Mean	58.55
	Std. Deviation	5.281
Most Extreme Differences	Absolute	.077
	Positive	.077
	Negative	-.068
Kolmogorov-Smirnov Z	.768	1.114
Asymp. Sig. (2-tailed)	.597	.167

a. Test distribution is Normal.

b. Calculated from data.

Source: SPSS application

**Picture. 3.** The table of normality test

Based on the picture (table) above, the Sig. (2-tailed) was above 0.05. It means that the public participation in the PeduliLindungi application was normally distributed.

### Linearity Test Appendix

The linearity test is intended to determine whether there is a linear relationship between the dependent variable and independent variable to be tested (Djazari et al., 2013).

	(Combined)	864.280	23	37.577	5.502	.000
Aplikasi Peduli Lindungi *	Between Groups	711.626	1	711.626	104.197	.000
	Deviation from Linearity	152.634	22	6.938	1.016	.457
Partisipasi	Within Groups	519.050	76	6.830		
	Total	1383.310	99			

Source: SPSS application

**Picture. 4.** The table of linearity test

Based on the results of the linearity test in table 3.2.3, the sig linearity value was 0.000, and the sig deviation from the linearity was 0.457. Therefore, it showed that linear regression was quite well because the value of sig linearity was below 0.05 and the sig deviation from the linearity value was above 0.05.

## Simple Linear Regression Test Appendix

Simple Linear Regression Analysis is used to measure the effect of one predictor variable (independent variable) on the dependent variable (Wijayanto et al., n.d.).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.717 <sup>a</sup>	.514	.509	2.618

a. Predictors: (Constant), Partisipasi

ANOVA<sup>a</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	711.626	1	711.626	103.828	.000 <sup>b</sup>
Residual	671.684	98	6.854		
Total	1383.310	99			

a. Dependent Variable: Aplikasi Peduli Lindungi

b. Predictors: (Constant), Partisipasi

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	9.644	2.929		3.292	.001
Partisipasi	.508	.050	.717	10.190	.000

Source: SPSS application

**Picture. 5.** The tables of simple linear regression test

Referring the pictures (tables) above, the magnitude of the influence of X and Y was 0.514 or 51.4%. Then, the regression equation was  $Y = 9.644 + 0.508 X$ , therefore there was an effect of X on Y due to the value of sig which was below 0.05, it means there is a positive and significant influence that occurs between variable X (independent) on Y (dependent), the variable X is public participation and variable Y is the application of PeduliLindungi.

## Correlation Test Appendix

A correlation test is a test that serves to determine the closeness

level of the relationship between the independent variable (X) and the dependent variable (Y). In this test, the test was only to find out the relationship.

Correlations

	Partisipasi	Aplikasi PeduliLindungi
Partisipasi	1	.717 <sup>**</sup>
	Sig. (2-tailed)	.000
	N	100
Aplikasi PeduliLindungi	.717 <sup>**</sup>	1
	Sig. (2-tailed)	.000
	N	100

\*\* . Correlation is significant at the 0.01 level (2-tailed)

Source: SPSS application

**Picture. 6.** The table of correlation test

The picture (table) above showed that the correlation between Public Participation and PeduliLindungi application was 0.717. It means that there was a strong correlation between the Public Participation and PeduliLindungi applications because the p-value was above 0.05.

The data used were the primary data and secondary data obtained through administering the questionnaires and to 100 respondents, both male and female as representatives of the public in Yogyakarta. Then, from the data obtained, the average age range of the respondents is 20-25 years and they are domiciled in Yogyakarta.

## Information Technology

### Applications in handling Covid-19

The information during the Covid-19 pandemic is very influential which was shared with the public quickly. The news of Covid-19 was

spread rapidly through several media in the public, such as mainstream media, alternative media, social media, as well as daily conversations within community (Kurniati et al., 2020).

The government had also taken steps to deal with Covid-19 by implementing several policies. According to Singh et al. (2021), Countries began to adopt various strategies, such as lockdown, mass testing, tracing, quarantine, sanitization, isolation, and treatment to contain COVID-19. However, it was soon realized that was required taking the help of powerful technologies to combat the spread of deadly COVID-19 until the vaccine was discovered.

The impact generated by the presence of Covid-19 covered several sectors. Social distancing regulations and remote learning had made distant assessment inevitable and created a pressing need to assure learning outcomes (Lee et al., 2021). Then, in the tourism sector, to maintain physical distancing and recover the tourism industry, virtual reality technology has been adopted to allow travelers have an opportunity to visit certain destinations and try products or services, which can be a useful tool to consider physical distancing (ATSIZ, 2021).

Android and IOS-based technology are one of the technologies that are widely chosen in dealing with Covid-19 in every country due to various uses. One of

them was described by (Whitelaw et al., 2020) that “Singapore has launched a mobile phone application that exchanges short-distance Bluetooth signals when individuals are in proximity to each other. The application records these encounters and stores them in their respective mobile phones for 21 days. If an individual is diagnosed with COVID-19, Singapore's Ministry of Health accesses the data to identify contacts of the infected person”. Android and IOS-based technology is the right thing because the majority of people have it. Further explanation regarding technology in dealing with Covid-19 is for example that “WeChat and AliPay, two mobile phone applications which are widely used by the Chinese community, provide a Health Codes system, where residents who want to leave, must register and are given a color QR Code. Then, showing green, yellow, or red code is to indicate their Health status” (Shafira, 2020).

In Indonesia, in handling Covid-19, they chose using applications for screening and tracking. These applications that play a role in the prevention of Covid-19 have been used based on Desi K. (2020), CNN Indonesia (2020), Kominfo (2020), such as PeduliLindungi, 10 Safe Houses, Chatbot Covid-19, Neurabot, Qlue, FightCovid19, TraceTogether, Covid Symptom Tracker, e-hack, Close Contact Detector, AC19, Home Quarantine, Mobile COVID -19

Track, AI Detection of COVID-19, and Multicenter Clinical Trials. However, all existing AI did not get support from the public in its use due to the lack of communication between stakeholders, weak public support, and government policies which are often not supported. The “Ministry of Communication and Informatics, Ministry of Health, Ministry of BUMN and National Disaster Management Agency (BPNN) had collaborated to develop PeduliLindungi application to cope with and prevent the Covid-19 pandemic” (Fadli, 2020). This application continues to be developed by adjusting the existing circumstances.

Thus, computer scientists can contribute to fight against COVID-19 by introducing more intelligent solutions to achieve rapid control of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which is the virus that causes the disease (Adly et al., 2020).

## CONCLUSION

Based on the results related to public participation in the use of PeduliLindungi application, two variables and 7 indicators were used. The first variable consists of 4 indicators, namely the identification of Covid-19 cases in the Special Region of Yogyakarta, the public understanding of the “PeduliLindungi” application, the ease of using the “PeduliLindungi” application, and the people's attitudes

using the “PeduliLindungi” application. Furthermore, the second variable consists of 3 indicators, namely the “PeduliLindungi” application and its features, the uses and benefits of the “PeduliLindungi” application, and the “PeduliLindungi” application socialization strategy.

This research shows that public participation in the PeduliLindungi application was quite supportive, due to the mandatory vaccinations and the additional policies from the government for the use of the application to handle the spread of Covid-19 and its mutations, since the data obtained based on two variables and 7 indicators analyzed, it shows that the public had already known the uses and the benefits of the application and supported the government in developing the PeduliLindungi application. The following subsection is a brief explanation of these research result.

1. The public participation in the “PeduliLindungi” application
  - This application was well known and used by the public, although it was still not optimal. This could be a result of public complaints about the performance of the PeduliLindungi application which was still not stable.
  - There is a positive and significant influence on variable X (independent) on variable Y (dependent), this answers the level of public participation in the PeduliLindungi application which has a positive and significant effect.



- Most people knew 1 aspect of using the application, which means that people still did not more understand about the application. Therefore, this caused that the people did not maximize the use of the application.
  - The people who supported the government and used the application for handling Covid-19 spread dominated.
2. The application of information technology in handling Covid-19
- PeduliLindungi is the application to assist the relevant government agencies tracking to handle the spread of Coronavirus Disease (COVID-19).
  - The advantages of this application is giving a warnings to users, supervision (surveillance), downloading vaccine certificates, providing information about COVID-19 test results, and evidence for accessing public services.
  - There would be 6 sectors that were the focus of using the PeduliLindungi application in terms of screening, such as trading (shopping centers, modern markets, and traditional markets), transportation (land, sea, air), tourism (hotels, restaurants, events/shows), offices/Factories (government, private sector, banks, large factories, MSMEs/IRT), places of worship (mosques, churches, monasteries, temples, religious activities), and education (PAUD, SD, SMP/SMA, Universities).

The socialization of the application which was held virtually on Monday, September 13, 2021, at their respective workplaces, and was

attended by all representatives of each OPD the application relied on the public participation to share their data and location while traveling, so tracing their intraction history with Covid-19 sufferers could be done quickly.

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