

The Impact of the Government Actions as a COVID-19 measure in Indonesia with different Festivals and Long-weekend

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ABSTRACT

Background Indonesia is currently facing challenges with Covid-19, the performance of the government in dealing with Covid-19 is transparently in public. The implementation of the government action itself is carried out with decisions that will be implemented by the government to Indonesia in order to push the number of Covid-19.

Objectives To compare the impact of government actions on the numbers of new infections of Covid-19 with different Festivals and long-weekend, I also measure the effect of the government actions over Covid-19 variants(Normal and Delta).

Methods I pursue my objectives by a longitudinal dataset with observations from Covid-19 diagnosis all over the Indonesia from March 1, 2020 to August 13, 2021, with government actions to measure the relationships between government actions, COVID-19 diagnosis with different festivals and long-weekend, and the Covid-19 variants.

Results

I identified that PSBB isn't effective to handle Covid-19 in festivals and long weekend with at least four vital sign measures from PSBB in April 2020 to January 2021. The history of PSBB shows that every case spike is happened with festivals and long-weekend, especially a festival which involving many

adherents and because of the numbers were from the mobility between provinces and islands. Meanwhile with the combination of PPKM and Vaccination program has impact in reducing Covid-19 cases in January 2021 to May 2021, the cases reduced from 14,000 cases(highest cases in January) to 2,000 cases(lowest cases in May) and stable around 5,000 cases. Delta variant has huge impact to daily cases and succeed provide a big wave around 50,000 cases(highest cases in July 2021), with PPKM emergency/level 4 implemented to Java and Bali. The mobility between provinces in Java were restricted, but Indonesia has through the big wave of Delta variant with PPKM emergency and vaccination program.

Conclusions

Consistently, festivals and long-weekend caused a spike in confirmed Covid-19 cases at the national level. Due to the high number of covid-19 cases from March 1, 2020, to January 25, 2021, the implementation of PSBB, hasn't been effective in reducing the case numbers and there's no significant impact. PPKM and vaccination programs have been effectively limited the number of Covid-19 at first, and effectively prevent a big wave of Covid-19 variants(Delta). I recommend efforts to strengthen health protocols, prevent high mobility between provinces & islands, and not weaken the combination between PPKM and vaccination programs.

BACKGROUND

The government of the Republic of Indonesia has taken many actions to handle Covid-19, .i.e. physical distancing and stay at home were implemented. Whilst LSRR/PSBB(Large scale social restrictions), PPKM(community activity restrictions), and Vaccination Program have been “said” effectively in slowing the spread of the virus. But, there’s a concern about how these actions may impact to push the number of Covid-19 cases in festivals, long-weekend, and prevent the cases of the new variant or even the next variants.

Government interventions may cause substantial economic in many sectors while affecting individuals behavior and social security. Therefore, the knowledge of the most effective actions to push the number of Covid-19 cases would allow stakeholders to judiciously and timely implement an action to fight a resurgence of Covid-19.

In this study, I used a Covid-19 record that captured the report from March 1, 2020, to August 13, 2021, and evaluate the hypothesis which government actions(.i.e. PSBB, PPKM, and Vaccination Program) is the more effective to handle Covid-19. If the government actions are shown to be more protective for Covid-19, efforts should be made to enable and encourage as a regular as means to handle severe Covid-19 outcomes.

METHODS

Study Design

This is a retrospective observational study in which Covid-19 diagnosis was documented in the spreadsheet from the first

government actions toward Covid-19 from March 1, 2020 to August 10, 2021.

Setting

This study was conducted based on Covid-19 diagnosis over Indonesia from “Covid-19 in Indonesia@kawalcovid”. This study uses a comprehensive that links government actions (PSBB, PPKM, Vaccination Program) in different days(festivals and long-weekend), and Covid-19 variants(Normal and Delta).

Study Cohort

Inclusion criteria consisted of all regions in Indonesia with covid-19 cases divided into government actions(i.e. PSBB, PPKM, and Vaccination program) in 2020 and 2021 and PPKM emergency criteria consisted of Java and Bali.

RESULTS

The primary outcomes examined were daily cases of Covid-19 in Indonesia. The daily cases demographics were linked to festivals and long holidays to see the factors of the Covid-19 increase rate and to see the effect of government actions to push the numbers of Covid-19. Expected to get the correlation in the Covid-19 cases rate with government actions, festivals, long-weekend, and new variants of Covid-19.

Festivals and Long-weekend effect to the number of Covid-19 in PSBB history

About 17 months after discovering the first Covid-19 cases in Indonesia, the curve of diagnosis continues to rise. Figure 1, shows daily cases of Covid-19 in PSBB history, there are several spikes for increased cases over time. PSBB was implemented in April 2020 in

Indonesia. PSBB has been said an effective way to slow down mobility and directly affecting the Covid-19 rates. However, PSBB

is considered an ineffective action. That's because most of the numbers were from the mobility between provinces and islands.

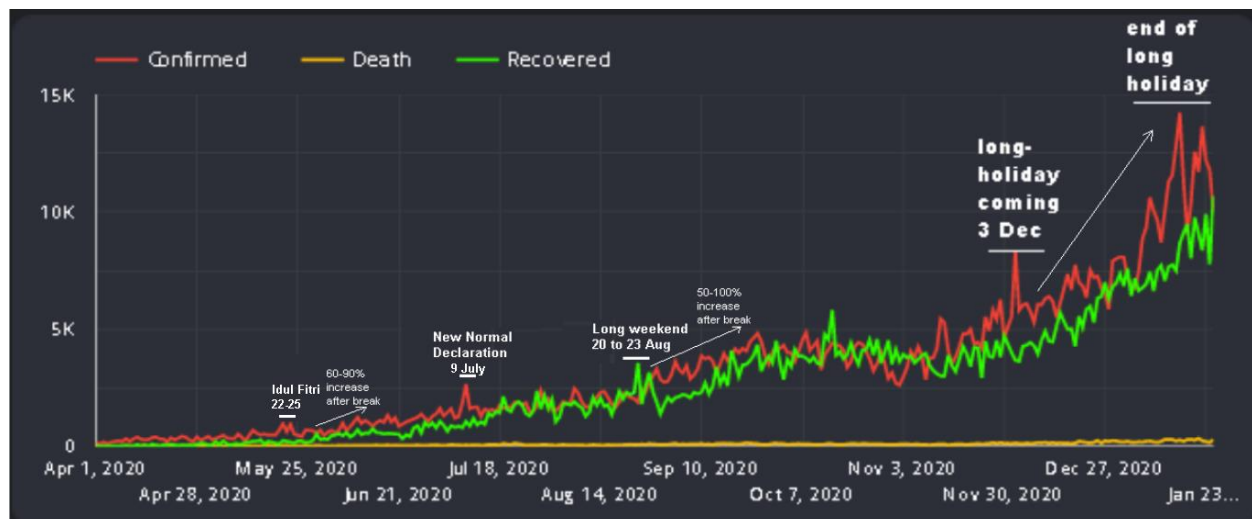


Figure 1 Holidays and long-weekend in PSBB

The first drastic increase was in the middle of May 2020 within Idul-Fitri (the most important holiday for Muslims), the daily numbers of covid-19 cases had jumped between 60 to 90% after holiday period. The daily cases continue to increase from 20 to 23 August 2020 due to long holidays along with the controversy to returning their hometown the covid-19 cases has increased 50-100% after long-weekend periods. The cases continue to increase from July 2020 to the end of 2020 for various accumulative reasons.

Among other things, the cluster after long holidays (eid homecoming) in July, the proclamation of the new normal with the next long holidays at the end of 2020 (Christmas and New year) started from the first December 2020 with the preparation of long holiday where the daily cases immediately doubled around 8000.

The last spike/vital sign was in January 2021, it was the end of the holiday where the homecoming mobility was high from the long holiday from Dec 2020 to Jan 2021, with the high mobility happened in a few days, the high covid-19 test was held. At the Table of testing for covid-19 in PSBB history, the highest Covid-19 test was held in January, with high mobility from the end of the long holiday. This means, the high Covid-19 test held, high probability of covid-19 cases increase.

Overall Indonesia has implemented PSBB since April 2020 and has not succeeded in reducing the cases numbers of Covid-19. As a result, PSBB was implemented again and again but there's no impact on the cases numbers which show that cases numbers in 2020 still increase until the end of PSBB on January 25, 2021. The implementation of PSBB hasn't been effective in reducing the cases numbers.

PPKM along with Vaccination Program

After a long holiday in Dec 2020 to Jan 2021, there is an increase in cases of 25 to 30%. One thing I see is that there is a rate of addition of cases per week which as of last December there were (approximately) 48,000, in January has increased to more than 50,000. It shows that PSBB can't handle the mobility of long holidays. PPKM is similar to PSBB and was created to be more strict than PSBB in the mobility of daily activities,

i.e. 75% work from home, application of restrictions started from 20:00, and many more.

PPKM and Vaccination Program were started in January 2021. Figure 2, shows that daily covid-19 cases decreased in the middle of PPKM and vaccination program with a pretty good number of cases, even in the middle of festivals and long-weekend, the covid-19 cases are stable in 5000 to 6000 daily cases.

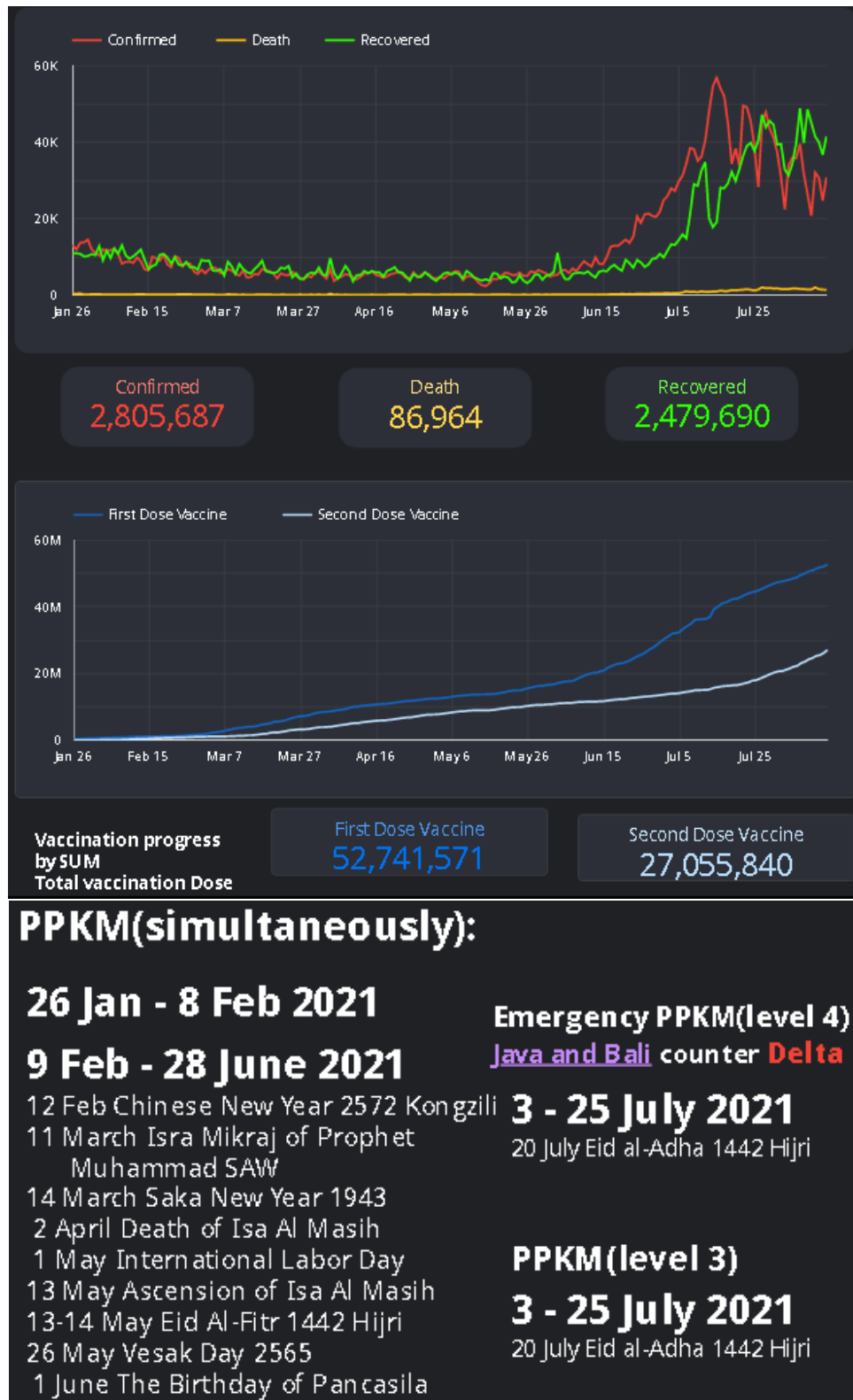


Figure 2 PPKM

PPKM Level 4 in Java and Bali(3 – 25 July 2021)

In June 2021, Covid-19 Cases Skyrocket and has most likely been caused by the Delta variant of the Covid-19, which was first detected in India. Delta variant appear to be the same as normal version of Covid-19. However, it is highly contagious and people are getting sicker quicker than normal version of Covid-19. To counter Delta variant which is highly contagious, the Indonesia government implemented PPKM Emergency/PPKM level 4 in Java and Bali. As

the PPKM emergency was implemented, the test of covid-19 was increase drastically in July 2021. As the high Covid-19 cases in PPKM Level 4, the test for Covid-19 also increase. Figure 3 shows that Bali has low active cases from first July with around 6,000 cases and continue increase to last July around 12,000 cases and in Java, Jakarta is the only province which succeed to counter Covid-19 with around 17,000 cases in the last July, compared to the first July with around 74,000 cases.

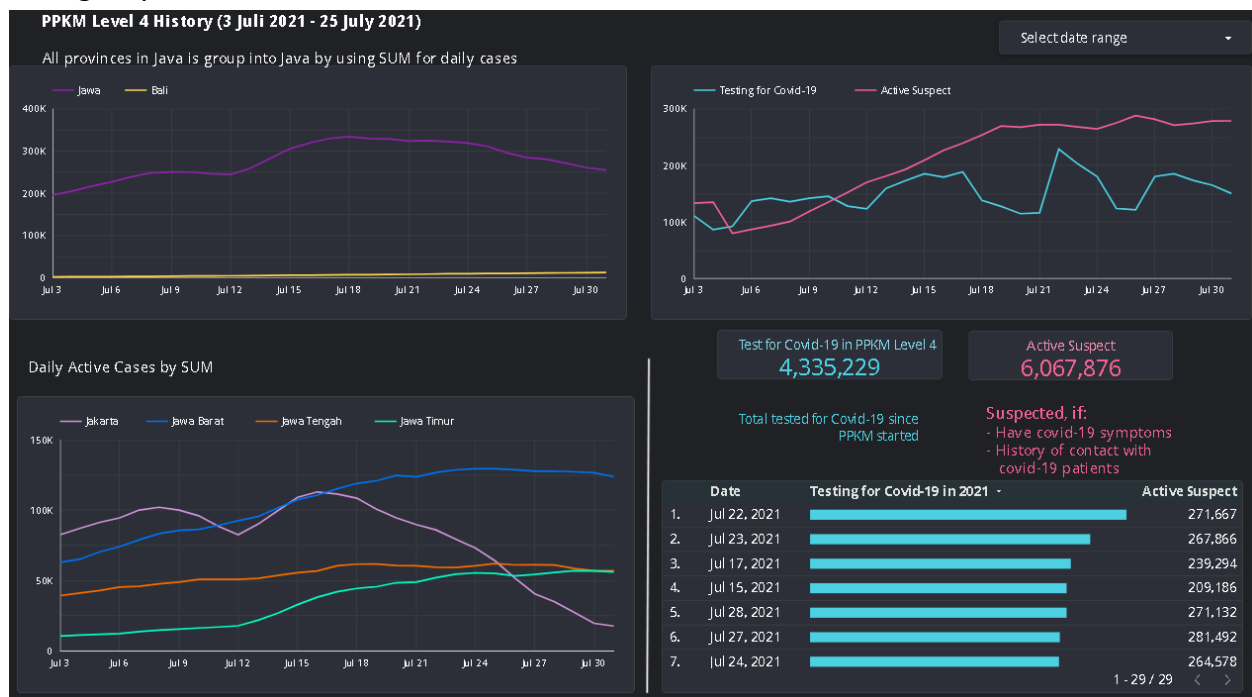


Figure 3 PPKM level 4 implemented in Java and Bali

CONCLUSION AND RECOMMENDATION

Covid-19 has not yet passed, the numbers are still high. Policies regarding health protocols should be strengthened. There are a few things that need to be noted about the way government handle Covid-19 from March 2020 to August 2021, namely:

1. Festivals(.i.e. Idul-Fitri, Christmas, etc.) and long-weekend have been proven causes for spikes in confirmed cases at the national level. With the high mobility causes by festivals and long-weekend, cause the high covid-19 test, the more covid-19 test was held then the probability number of covid-19 increase will be high. There's a correlation between covid-19 numbers, covid-19 test, and mobility between provinces and islands.
2. The PSBB from April 2020 to January 2021 had failures and successes. If the PSBB is appropriately implemented then the number of Covid-19 could prevent to a high number of cases, meanwhile when the government relaxes(weaken the strict of PSBB) then the number of Covid-19 increases. Overall, PSBB is not effectively used to handle Covid-19 caused by high mobility.
3. PPKM and Vaccination program have effectively reduce the number of Covid-19. Since a long holiday(Christmas and New Year), the cases continue to decreased until Delta Variant entered Indonesia.
4. PPKM level 4, Vaccination program and the high number of test for Covid-19, implemented into Java and

Bali which have many cases of Delta variant. Succeed to prevent big wave of Covid-19 Delta variant.

5. Vaccination programs are running and must continue to be implemented consequently so that the matter of immunity can be resolved.
6. However, the government shouldn't be careless. With the combination between vaccination programs and PPKM, it would be better if the government not relaxes too much the PPKM and vaccination program, then the number of Covid-19 could be decrease.
7. Mobility is a factor of high cases of Covid-19 in PSBB history, with PPKM which limit the mobility between provinces in Java, the cases was decreased and succeed prevent the bigger wave of Covid-19 Delta variant. I would recommend to make an action to put more focus on the mobility between provinces and islands.

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