

# **COVID-19 and Herd Immunity: Evaluation of COVID-19 Vaccination Policies in Indonesia**

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## **Abstract**

Efforts to prevent COVID-19 transmission will continue until a national vaccination program is enacted, which is expected to be the most effective way to combat the COVID-19 pandemic. However, vaccination policies remain lax in some places, such as the Madura region, making efforts to create herd immunity slow and challenging. This study used a qualitative descriptive method to collect data using interviews, the COVID-19 task force website, and reliable online sources. Data and information were triangulated to improve researchers' comprehension. Then proceed to data reduction, display, and verification to get detailed results and conclusions. According to this study's findings, the immunization policy's efficiency in the Madura region is still low until early September 2021. Several factors contribute to this, including low citizen participation, a lack of socialization intensity and direct involvement of religious and community leaders, public perception of COVID-19, and numerous post-vaccination symptoms that are not addressed immediately by the government and health workers. As a result, developing herd immunity in Madura is challenging if achieved through vaccination. Herd immunity in Madura was developed not by vaccination successes but by more than 70% positive COVID-19 cases based on government and informant data.

**Keywords:** Covid-19, Herd Immunity, Policy Effectiveness, Vaccination.

## **Introduction**

The World Health Organization recorded more than 102,1 million cases of coronavirus disease 2019 (COVID-19) and more than 2,2 million deaths by the end of January 2021.

(Brown et al., 2021; Simsir et al., 2022). Vaccination will be the most successful and cost-effective technique for preventing and controlling COVID-19 spread (MacIntyre et al., 2022; Dinleyici et al., 2021), and individuals' willingness to vaccinate will determine whether they receive a COVID-19 vaccine. Indonesia's COVID-19 prevention and control policy will provide free COVID-19 vaccines to high-risk groups in 2021, followed by the entire public (Aldila et al., 2021). The public's willingness to be vaccinated will determine the effectiveness of the government's free vaccination program and the management of COVID-19. A high vaccination rate protects both vaccinated and unprotected people, creates herd immunity, and lowers the risk of virus mutation (Yanto et al., 2021).

Previous vaccination research have shown that socioeconomic position, awareness of illness severity and susceptibility, and faith in vaccinations all influence the degree of COVID-19 vaccination acceptance (Nzaji et al., 2020; Lin et al., 2020). Yoda and Katsuyama (2021) conducted a poll in Japan and discovered that men, the elderly, people living in rural areas, and people with chronic diseases were the most eager to be vaccinated against COVID-19. In Saudi Arabia, marital status and trust in the healthcare system were found to be the most important predictors of COVID-19 immunization willingness (Al-Mohaihef & Padhi, 2020). Reiter et al. (2020) discovered that participants were more likely to be vaccinated when they perceived a higher likelihood of future COVID-19 infection, a higher severity of COVID-19 infection, and a higher perceived effectiveness of the COVID-19 vaccine; they are less likely to be vaccinated when they perceive a higher potential for vaccine harm. Several studies conducted among specialized demographics, such as healthcare workers, long-term care personnel, and caregivers, have revealed that vaccine skepticism stems mostly from concerns about vaccine safety, side effects, and efficacy (Goldman et al., 2020; Unroe et al., 2021).

WHO noted that vaccination performance may be measured in three ways: vaccine efficacy, vaccine effectiveness, and vaccine impact (Khuc et al., 2021). Vaccine effectiveness quantifies the decreased risk of infection among vaccinated persons in controlled settings. These efficacy data were from randomized controlled trials (Halloran et al., 1991). Using observational research, vaccine effectiveness analyzes the reduction in the risk of infection in vaccinated persons due to the implementation of immunization in the community or real world (Halloran et al., 1991). In addition, the impact of vaccines is a reduction in the risk of illness or disease in populations whose members have been immunized (Hodgson et al., 2021).

The first immunization campaign in Indonesia was administered on January 13, 2021, with President Joko Widodo receiving the first injection. This immunization is administered in many batches, with the first batch administered to health care professionals, government officials, and the elderly. The second wave targets vulnerable individuals and the general population (MOH, 2021). AstraZeneca, Moderna, Pfizer, Sinopharm, and Sinovac manufacture the vaccinations that have been and will be used in Indonesia (Rahayu, 2021). According to scientific investigations, the efficacy of all vaccine kinds varies. Vaccination is a significant effort to fight disease. It is proven safe and effective in increasing immunity, as initial immunity reaches at least 55% of the population's vaccinations and reaches 85% to establish herd immunity or population immunity (Loomba et al., 2021). According to WHO, herd immunity is formed by vaccination following the percentage that has been researched and immunity is also formed because someone has been infected with the COVID-19 virus. Vaccination will be proven with physical or digital documents to prove immune from COVID-19 and free from restrictions on social activities (Kosciejew, 2021).

The Indonesian government aims to have vaccinated 40,3 million individuals with the full dose by April 2021 (twice the injection dose). However, delivery of vaccines only reached

19% of the objective by the end of April 2021 (COVID-19 Handling Task Force, 2021c). In addition to the slow rate of vaccine administration, the lack of public acceptability of the vaccine itself contributes to the low coverage of the COVID-19 vaccine (Acharya et al., 2021). Harapan et al. (2020) discovered that high-efficacy vaccinations would be more acceptable. In the initial phase, the most popular vaccination is Sinovac, which is regarded as ineffective. If we want to discuss the efficacy of vaccines in accordance with WHO, we need to know how the vaccine affects the community.

East Java is one of the provinces where the vaccination rate is still below 50 percent. Total vaccination at the first dose reached 34.48% or 10,973,078 people who had vaccinated, while at the second dose, vaccination only reached 19.19% or 6,106,141 people from the targeted vaccination target of 31,826,206 people (MOH, 2021). The low vaccination rate in East Java is also influenced by the low vaccination rate in Madura, covering four districts: Sampang, Sumenep, Pamekasan and Bangkalan, respectively, which are the lowest in East Java. The average level of achievement of the Covid-19 vaccination in the Madura Region was only 9.1 percent at the first dose and about an average of 5% at the second dose. From the achievement of vaccination in the Madura region, efforts to prevent anticipating the transmission of Covid-19 and form communal immunity are still far from compelling. Herd immunity and efficacy of vaccination is at least 70 percent to prevent pandemics and at least 80 percent to primarily suppress epidemics even without other measures such as social distancing and activities (Bartsch et al., 2020).

Therefore, in establishing herd immunity or group immunity from Covid-19 infection, one way to make vaccination policies effective is to match the total achievement (Sinha et al., 2023). Policy effectiveness is often defined as the level of achievement of objectives. A more dynamic meaning is to ensure that the policy does not only refer to a particular context but can adapt to changing conditions from time to time (Bali et al., 2019). In terms of policy effectiveness, it is not only pragmatic in achieving goals but also relates to the extent to which policy progress, technical problems and government political priorities (Chindarkar et al., 2017).

Organizational actions are more effective than administrative procedures at achieving policy objectives within the framework of the policy (Hagen et al., 2008). Effectiveness policies give feedback on the impact of activities to decision-makers and influence crucial problems such as resource allocation (Nilsson et al., 2017). According to McConnel (2010), policy effectiveness has four dimensions: the program is the extent to which the policy achieves its intended goals; the process is the extent to which the design process is socially appropriate and the principles of justice; and the temporal extent to which the policy maintains its performance in the face of changing conditions.

Effectiveness can be measured from two theoretical and practical views. First, the accepted effect-based principle, every policy step has an impact that affects the achievement of goals. The two final goals are achieved, and each policy has a target to be achieved; this measure is simpler to study because it sees whether the policy objectives have been achieved following the target time. Three responses to policy targets this measure is a more pragmatic approach which is illustrated by the response of the community as the target of the policy (Bullock, 2006). Conceptualization of effectiveness on the correlation between policy objectives and the results achieved through three scopes: 1. Policy quality, 2) governance, and 3) achieving the stated objectives. Therefore, this study seeks to reveal the effectiveness of vaccination policies measured in three aspects, the achievement of policy objectives or the

percentage level of vaccination, public perception and support for vaccination policies, and obstacles to achieving vaccination policies.

## Method

This study uses a qualitative descriptive and postpositivism method to examine natural cases and objects to the vaccination policy in Madura. Collecting data is triangulation, data analysis is qualitative, and the results of qualitative research emphasize meaning rather than generalization (Sugiono, 2011). This study also explains the relationship between vaccination effectiveness policies and the problems that arise and makes predictions about the effectiveness of vaccination policies which are still far from the total achievement of covid-19 vaccination (Rukajat, 2018).

The research is located in the Madura region, which includes Bangkalan, Sampang, Pamekasan and Sumenep regencies. The data was taken through direct interviews with informants face-to-face and by telephone; the data was also taken from the official website of the Covid-19 task force and from credible online media news that accurately and correctly presented data. Then triangulation of data was carried out to increase researchers' understanding of the information that had been found (Sugiono, 2011) about the number of confirmed cases of covid-19, the amount of data on vaccination achievements, information about perceptions and rejections of vaccination policies, as well as the problems that occurred from the implementation of the covid-19 vaccination program in Madura. In the last stage, analysis is carried out by performing data reduction, data display and verification to generate data and conclusions (Sugiono, 2011).

## Result and discussion

### 1. *Covid-19 cases in Madura*

While several areas experienced a spike in Covid-19 cases, all districts in Madura were still in the green zone. During the homecoming ban period, May 6-17, 2021, in East Java, there were 38 reactive Covid-19 travelers, while the rapid antigen carried out at the Suramadu isolation post was non-reactive and positive. As stated by the Governor of East Java Khofifah, Madurese is sacred because, during the June 2021 screening period, the screening results reported that Madurese was non-reactive and positive (Susilo et al., 2021). However, entering the month of June 2021, the Covid-19 case in Madura experienced a sharp spike which began in Bangkalan Regency. Based on accumulative data as of June 6, 2021, the number of confirmed positive cases was 1,779, patients recovered 1,520 people, and patients died 180 people. According to the Covid-19 task force, Agus Sugianto said. Covid-19 cases in Bangkalan were increasing rapidly until the hospital capacity could not accommodate the limited bed occupancy rate (BOR) and limited hospital services, so in the end, many Covid-19 patients had to be referred. To the Surabaya Hospital. Some reasons for the surge in positive cases of COVID-19 include holiday mobility, inferior healthcare discipline, and poor testing (Pranita & Nursastri, 2020).

After the surge in Covid-19 cases in Bangkalan, other districts also experienced an increase. Sampang, Pamekasan and Sumenep experienced overcapacity of BOR and hospital services. Entering June 2021, positive cases of COVID-19 in Sampang reached 1,067, and the death toll was estimated to exceed three people per day. Pamekasan also experienced a surge

in COVID-19 cases in early July 2021, with positive COVID-19 cases recorded reaching 1,405 and the number of patients dying reaching 122 people. According to the head of the Pamekasan task force, Syaiful Hidayat, Pamekasan's condition is already severe, beyond the limits of health services and has entered the red zone. A similar case also occurred in Sumenep, with a spike in Covid-19 cases in early August 2021; positive COVID-19 deaths reached seven people per day. Overall, Madura has entered a health emergency in the period of June, July and August and/or the Covid-19 red zone ([infocovid19.jatimprov.go.id](http://infocovid19.jatimprov.go.id)) have been imposed.

Meanwhile, data from the East Java Covid-19 Task Force as of September 9, 2021, as a whole, four districts in Madura are already in low-risk status. Sampang district confirmed as many as 2,622, 90 active, 2,405 patients recovered, the recovery rate was 91.72%, and the fatality rate was 4.84%. Pamekasan Regency confirmed positive for COVID-19 in as many as 2,488 people, 96 active, 2,194 recovered patients and 198 patients died, with a recovery rate of 88.18% and a fatality rate of 7.96%. Sumenep Regency has 5,082 positive confirmed cases of COVID-19, 32 active patients, 4,782 recovered, and 268 patients died, with a recovery rate of 94.10% and a fatality rate of 5.27%. A reasonably high death rate occurred in Bangkalan Regency, amounting to 710 people from 6,115 confirmed and 62 active people and 5,343 recovered patients.

Sindhu Purnomo, an epidemiologist from Airlangga University, said the number of positive cases and deaths due to Covid-19 in Madura was much greater than the actual number of cases; if a comprehensive test were carried out, the Covid-19 cases in Madura would be far from the reported data. Wind also said that several leadership elements in the regional Forkopimda did not want to carry out excellent and severe tests and contact tracing, so there were few COVID-19 cases (Amy et al., 2022). K. Mansur also conveyed a similar statement that since the issue of covid-19 spread and entered the Bangkalan area, the number of deaths has been immense; even in one village, it reached 3 to 5 people daily. Deaths increased in several villages and places in the Sumenep Regency and the Pamekasan area of the north coast. As also stated by the head of the Sumenep task force, dr. Andri, the potential for COVID-19-positive people, is extensive because the transmission rate reaches 95 percent, so if all residents in Sumenep are carried out rapid tests, the potential for cases will be enormous (Andri. personal communication, July 20, 2021).

## **2. Covid-19 Vaccination Policy**

### **a. Context**

The government has adopted a policy on the existence of a COVID-19 immunization program. Health workers, assistant health workers, support staff working in health care facilities, the elderly and public service people/officers, vulnerable groups from geographical, social, and economic perspectives, and other communities are the focus of the COVID-19 immunization campaign (Atika, 2021). Phase I of the Covid-19 vaccine implementation commenced in January 2021, phase II in February 2021, and phase III in July 2021, backed by research on the implementation of the COVID-19 vaccination program in accordance with government regulations. The vaccine administration was right on target. The thing that needs to be an element of success, namely an essential factor that drives this COVID-19 handling policy so that it is optimal, is the support and participation of the community (human society) (Fitrianingrum, 2021).

### **b. Input**

Research related to funding shows that the funds used in implementing vaccination activities are sourced from APBN and APBD funds. However, these funds are not following the needs. Furthermore, regarding human resources, the personnel who provide COVID-19

vaccination services are doctors, midwives, and nurses with the competence and authority to follow statutory provisions. However, some regions do not have constraints in budgetary resources because the vaccine procurement program and the implementation of the COVID-19 vaccination are charged through the APBN and APBD (especially for the Implementation of Vaccination). With a relatively large budget requirement, the government has implemented several policies, including refocusing and reallocating the APBD in the context of accelerating the handling of COVID-19 and supporting adequate infrastructure (Nurlailah, 2021).

Infrastructure is one of the supports for the implementation of COVID-19 vaccination activities. The government has provided the infrastructure used in COVID-19 (8) vaccination activities, including resources, and equipment, in the form of physical facilities, buildings, logistical and supporting equipment used to operationalize the implementation of the COVID-19 vaccination policy in general, which has met the needs. However, operational equipment in the field, such as Personal Protective Equipment (PPE), masks and hand scoops, is still very lacking (Fadhilah et al., 2021).

**c. Process**

In addition, the government has published Presidential Regulation No. 99 of 2020, which addresses Vaccine Procurement and the Implementation of Vaccination in the Context of Overcoming the COVID-19 Pandemic. Beginning on January 13, 2021, Indonesia began administering the COVID-19 vaccination to its citizens. The first vaccination was administered to the President of the Republic of Indonesia, Mr. Ir. Joko Widodo, along with other ministerial officials and several representatives from a variety of backgrounds, including health workers, religious leaders, teachers, and others (Scutari et al., 2022).

**d. Product**

The result is that the achievement of COVID-19 vaccination has not been optimal. Ministry of health data also shows that the achievement of COVID-19 vaccination is 55.61%. Many factors cause the COVID-19 vaccination not to be achieved. People still doubt the safety of the vaccine and feel that COVID-19 vaccination is still ineffective because after getting the vaccine, you can still get COVID-19, there are side effects after giving the vaccine, and people are still not sure about the halalness of the COVID-19 vaccine. The strategy is to increase the coverage of the COVID-19 vaccine by implementing the pick-up method by bringing the COVID-19 vaccine injection service closer to the community. This step is an effort to increase the coverage of the vaccination program (Gaming et al., 2021).

The obligation to vaccinate citizens is a fundamental right that must be guaranteed because health is part of the primary needs of every human being and in the perspective of fulfilling the fundamental rights of citizens to health. However, demographic characteristics are also related to the success of vaccination, such as gender, age, education level, employment status, and having relatives with a history of COVID-19 willing to participate in the COVID-19 vaccination program.

The achievement of the Covid-19 vaccination target in mid-August in Madura was among the lowest in East Java. The lowest achievement was in Sampang Regency, where the percentage of vaccination for the first dose was only 6.66 percent, and for the second dose, it was only 2.95 percent. In Sumenep Regency, the achievement of the first vaccination dose was 9.01 percent, and for the second dose, it was only 4.16 percent. Then in Bangkalan, the achievement of the first vaccination dose only touched 9.36 percent, and for the second dose, it was only 4.85 percent. Then in Pamekasan Regency, the vaccination achievement was higher by targeting 9.58 percent or 63,038 residents at the first dose, and at the second dose, it only

reached 5.04 percent. This means that the average achievement of Covid-19 vaccination in the Madura region has only reached 8.65 percent in the first dose. This low achievement is still far from the total target of vaccination achievement or the level of attainment of immunity to anticipate COVID-19 infection ([infocovid19.jatimprov.go.id](http://infocovid19.jatimprov.go.id)).

According to dr. As'ad, in a vaccination webinar held by KAHMI Sumenep, said that the achievement of Covid-19 vaccination in Sumenep and even in Madura is generally meager; all elements of society need to move because vaccination is essential for public health. As a result of low performance, one of the sub-districts in Sumenep Regency issued an arrogant statement with the sentence, "if the community does not vaccinate, then steal the cow," which was conveyed at a coordination meeting with all village heads, Dandim and Polsek. A statement that pressures village officials to work hard to make the COVID-19 vaccination policy a success, and the achievements are still meager.

### **3. *Public perception and support of the covid-19 vaccination policy***

The vaccination program in Madura from July to early August 2021 did not receive full support from the community. Community participation at the time of vaccination in puskesmas and village halls is meager. In one case, the vaccination carried out by Health Workers at the Tamidung village hall, Sumenep Regency, was not attended by the community, so only a certain number of equipment carried out vaccinations (Lamri. Personal communication., 2021 July 18). A similar case also occurred in other villages in Batang Batang District, Sumenep, where the number of people vaccinated was only an average of 6, all of whom were primarily families of the village head. Head of Romben Guna Village, Kec. Dungkek Sumenep said that as village officials, it was difficult for us to get the community to get vaccinated. Even though gift packages were provided for the community, people were still afraid to get vaccinated (Vera. Personal communication., 2021 July 22).

According to the Regent of Sumenep, Achmad Fauzi said that up to the beginning of July, the vaccination program had no problems, such as rejection from community leaders in Sumenep, except that it was geographical because it was an archipelago. In principle, community leaders accept the vaccination policy in Sumenep. The head of Lapkesdam NU Batang Batang Zawawi said there was no strong rejection from the community against vaccination. However, the low level of vaccination and the public's fear of being vaccinated was absolute (personal communication, August 27, 2021). Some of the public's perceptions about the lack of participation, as stated by the Dean of Fisip Wiraraja University, Irma Irawati, among others, firstly, the public's perception of the symptoms of the disease (covid-19) to death is common before so there is no need for vaccination, distrust of covid-19 has implications in distrust of vaccinations. Secondly, the number of people who died with a positive COVID-19 status made people afraid to have contact with health workers, including vaccination, thirdly the emergence of developing stories that post-vaccination experienced symptoms and even death. Fourth, low follow-up knowledge about covid-19 and vaccination policies in public (personal communication, September 2, 2021). According to Zeng & Chan (2021), the pandemic issue fluctuates with the infodemic, referred to as the "point-source infodemic" and the ongoing infodemic. The infodemic is caused mainly by political misinformation, temporal distribution unrelated to the development of the epidemic, and inaccurate information about the pandemic (Zeng & Chan, 2021).

### **4. *Problem with the vaccination policy***

The low community participation or absorption of vaccinations in the Madura region is caused by several factors, such as low vaccination socialization in the community. The socialization carried out by the government did not touch the grass, especially for the ordinary

people who did not quickly get information from the media unless the socialization team went directly to remote villages; besides that, information was not fully received by the community about the importance of vaccination. Suppose various media only socialize without involving community elements to be conveyed to the associations. In that case, the importance and urgency of vaccination are not understood by the public (Irma Irawati, personal communication, September 2021:02). The success of the vaccination program in the Madurese community does not need to be like the way politicians are diligently putting up giant billboards. However, it is enough to take the "heart" of the ulama and community leaders. Ulama or Kiai figures have a substantial role in Madura's distribution of religious understanding. Indonesia's religious response is unique to the Covid-19 pandemic. Religion is one of the social entities that have a crucial impact on the Covid-19 pandemic, so it is necessary to build a constructive response synergy from the government to the impact of the Covid-19 pandemic by involving religious leaders (Regus, 2021).

Mansur (personal communication, August 20, 2021) said that: "People in Bangkalan and Madura generally don't know the importance of vaccination, some who know that it's easy to be confused by hoax information about vaccinations, for example vaccines to shorten a person's life, after being vaccinated many people get sick and die. This is the result of unclear socialization to the community, and not being carried out directly face to face by related elements who are trusted by the community such as kyai and community leaders".

Two problems related to vaccination in Madura are the intensity of socialization which is not carried out directly and does not involve many elements of the community and community leaders. Another problem is the accuracy of diagnosing comorbid diseases of the community to be vaccinated and complaints and handling services for symptomatic communities after being vaccinated (Mansur, August 2021:20).

First, the medically appropriate measure of being vaccinated is only seen in blood pressure and temperature, even though the vaccine has high symptoms for someone with a comorbid disease. Regarding congenital diseases, it is only through explanations and stories from candidates who will be vaccinated, whereas, for people struggling with not doing a doctor's examination, the potential symptoms are not diagnosed. Second, post-vaccination symptom-compliant service providers. Some of the vaccine officers provided a telephone number for the complaint. However, not many people complained because the treatment was only an explanation, not a treatment that could relieve symptoms. On the other hand, rooms and programs for complaints and services for symptomatic patients are not explicitly provided at the nearest Puskesmas.

Zawawi (personal communication, August 18, 2021) said that after being vaccinated, many people had symptoms such as fever, even for more than one week, in Batu Putih Sub-district, Sumenep, some experienced paralysis after a few days of being vaccinated. These events discourage people from vaccinating. Ismah (real name hidden), a resident of Batu Putih Subdistrict, said that: "I was sick for a long time until I was thin after taking the first dose of vaccination, and I will not go back for the second vaccine even though it is paid for by the government (Personal communication, September 2021:9).

It could be that severe symptoms after being vaccinated are not caused by the vaccine but because the close time makes assumptions in the community different. This condition is not accompanied by severe and intensive treatment from the government for people with severe and mild symptoms after the Covid-19 vaccination, especially in the first dose of the vaccine.



### 5. *Vaccination Effectiveness and Herd Immunity*

The vaccination policy has been implemented in the Madura region since its inception, under the directives of the central government. However, East Java has the lowest participation and uptake rates for the Covid-19 immunization. The low vaccination rate and failure to reach the goal of 75% have slowed the development of herd immunity or population immunity. Herd immunity is produced in two ways, according to the World Health Organization: the achievement of vaccination following the aim and immunity gained via past illnesses (who.int., 2020). Several possible vaccine candidates, including ChAdOx1 nCoV-19, mRNA-1273, Ad5-nCOV, and BNT162b1, will be available by mid-2020 (Viwattanakulvanid, 2021). A vaccination against SARS-CoV-2, which produces COVID-19, is required. Vaccines that elicit significant quantities of virus-neutralizing antibodies with high affinity can optimally prevent illness and avoid adverse consequences (Speiser & Bachmann, 2020). In Madura, vaccination rates for the first dose averaged 8% through mid-August 2021.

Vaccination at the first dose was not only not achieved but was very far from the target and was far behind other regencies such as Surabaya, which reached 73.04 percent and Mojokerto, 99.6 percent. Some of the problems with not achieving vaccination policies are related to the lack of direct support and involvement from the community and community leaders. The diverse and overlapping public perceptions of Covid-19 have resulted in the same perception of vaccination as a denial of Covid-19. Most people still do not get the correct information about Covid-19 (Nasir et al., 2020). Even incorrect information circulating in the mass media about covid-19 vaccination affects the intention to vaccinate and the great potential for not vaccinating (Loomba et al., 2021)

On the other hand, responding to different public perceptions in Madura is not accompanied by changes in vaccination policy. Policy implementation must adapt to the background and temporal environment, namely policy consistency during change (McConnell, 2010). In the sense that the implementation of vaccination policies cannot be equated between the Madura region and other regencies in East Java. Different cultural backgrounds and social activities cannot be solved similarly and require a solid and fast strategy (Lestari, 2021). As one of the most vehemently opposed to the vaccination program, the Madurese, including the Madurese, are outside the Madura region. Therefore, trust in vaccines is essential and highly dependent on the role of government in promoting confidence in the effectiveness and safety of vaccinations through the communication of the benefits and safety of vaccines, as well as the ability to distribute them effectively, efficiently and fairly so that vaccinations are achieved and successful (Bloom, 2021).

Therefore, the formation of herd immunity through the achievement of vaccination in Madura is very ineffective because, until the beginning of September, the absorption of vaccination in Madura did not reach 10%, while the average formation of immunity was achieved when it reached more than 75%. However, referring to the WHO perspective that herd immunity and population immunity will also be formed through previous viral infections, in the sense that people who have been exposed to the virus have the potential to be more immune than those who have not been exposed. In Madura, the rate of survivors and people affected by the virus is almost 80 percent, hospitals are overcapacity, and the death rate is the highest in Madura. According to dr. Andre, the head of the Sumenep COvid-19 Task Force, said that the potential community with a percentage of 95 percent was infected with Covid-19 and only people with strong immunity survived and recovered.

So, if the effectiveness of vaccination is still low in Madura, the hope of establishing herd immunity is difficult to achieve. However, as revealed by WHO, herd immunity and

population immunity can also be formed because of having been infected with a virus. Therefore, the number of Madura cases can become herd immunity because it has been confirmed positive for Covid-19 with a high percentage and possibly below the data revealed; almost all have confirmed the Covid-19 virus.

## Conclusion

The effectiveness of the vaccination policy in the Madura region until early September 2021 is still low. The low participation of citizens, the weak intensity of socialization and direct involvement of religious leaders and the community, the public's perception of COVID-19, and the many post-vaccination symptoms cause low vaccination achievement in the Madura region. In addition, the number of people who have been confirmed positive for COVID-19 is relatively high, apart from some data that were not disclosed comprehensively. Even if rapid tests are carried out, and the antigens are comprehensive, the confirmed potency will be much higher than the reported data. Therefore, herd immunity cannot be formed if it refers to the effectiveness of the COVID-19 vaccination, which is still low. Herd immunity can be formed through the experience of being infected with the virus before. This article also provides recommendations that to carry out the effectiveness of vaccination policies, it is necessary to change the pattern of policy implementation that takes into account the support and response of the community, the impact and the quality of governance in the implementation of vaccination policies.

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