

# FROM NATIONALIZATION TO SECURITIZATION: AN ANALYSIS OF THE USE OF GENOSE COVID-19 TEST KITS IN INDONESIA

**Moh. Fathoni Hakim**

State Islamic University of Sunan Ampel, Surabaya, Indonesia  
fathoni\_hakim@uinsby.ac.id

This research was carried out starting from the contemplation of seeing the Indonesian Government Policy on handling COVID-19 which is often inconsistent in several ways. These problems increased in Indonesian people confirmed positive for COVID-19. One of the inconsistencies in Indonesian government Policy can be seen in using the GeNose C-19 as a legally used COVID-19 test kit in Indonesia. GeNose, developed and produced by Gadjah Mada University, is claimed to be the national product. The procedure of GeNose is different from *Polymerase Chain Reaction* (PCR) and Swab tests. GeNose uses a breathing technique, and its result can be seen in 80 seconds. Aside from that, GeNose is also relatively cheap in terms of cost compared to PCR and Swab tests. The state designated it as an official COVID-19 test kit in early 2021. It has officially been used legally at various airports, stations, and bus terminals. But unfortunately, in the last few days, due to an increase in the number of Indonesians who are confirmed positive for COVID-19, GeNose has started to stop. Hence, this research will examine how the Indonesian government is carrying out the nationalization and securitization of the GeNose test kit. The researcher uses Barry Buzan's securitization theory and public health policy approach as analytical tools. The research method used is a qualitative approach with content analysis techniques. The results of the study stated that the actor of the nationalization and securitization of the GeNose issue was the state. There is a shifting paradigm in threats from military security to human security. GeNose issue so that at first nationalized and then constructed into a security threat and carried out securitization.

**Keywords:** nationalization, securitization, GeNose, COVID-19 test kits

## INTRODUCTION

The COVID-19 pandemic forces scientists in every country to be able to respond and produce various products to combat and suppress the spread of the virus. Vaccines, COVID-19 virus detection tools, and supplemental medicines are the products of scientists that are most widely consumed by the public in the era of the pandemic. In Indonesia, the emerging virus detection tool COVID-19 that has received marketing authorization from the Ministry of Health is famous for its practical ways of working (through breathing), low cost, fast results, and good accuracy. The product of this nation's children was later named GeNose.

GeNose is a COVID-19 detection tool developed by Gadjah Mada University researchers. This COVID-19 detection tool works by exhaling, in contrast to the PCR

swab test. GeNose works with Volatile Organic Compound (VOC) formed due to the COVID-19 infection and come out with a puff of breath into a unique bag. Furthermore, it will be identified through sensors whose data will then be processed with the help of artificial intelligence.

With the above technique, GeNose is a dynamic medical device. The sensor system can increase intelligence by increasing valid data from measurements. The sensor, integrated with the artificial intelligence system, has previously been trained in various machine learning modules, then detects the concentration pattern of breath VOCs. This process aims to plant intelligence in the machine so that the device can carry out specific tasks with high precision and speed.

When compared to the PCR swab test, the GeNose is very affordable. One unit of GeNose is estimated to cost 40 million rupiahs for 100,000 inspections. No wonder we find data that a one-time GeNose test in public places (stations, airports, terminals, etc.) is subject to a 20-40 thousand rupiah tariff ([travel.kompas.com](http://travel.kompas.com)). Because the basic cost of the GeNose tool is only 400 rupiah for one test, considered this affordable price, many agencies have ordered to buy the GeNose COVID-19 detection tool. They start from health facilities, government agencies, campuses, and other offices. The reason is simple: they are an agency and office managers who want to limit the space for the virus to move so it doesn't interfere with employees' mobility and work activities. For the first phase, GeNose has produced 2,021 units and has been distributed to health facilities (clinics, laboratories, and hospitals), ministries, state-owned enterprises, local governments, and universities ([health.detik.com](http://health.detik.com)).

Besides being more practical and inexpensive, GeNose also has a good level of accuracy. After conducting the first stage of the profiling test, during April - August 2020, using 600 valid data samples at Bhayangkara Hospital and Bambanglipuro Hospital in Yogyakarta, the results showed a high level of accuracy, amounting to 97%. In addition, GeNose is proven to be very fast in detecting the coronavirus in the human body. In no more than 2 minutes or just 80 seconds, GeNose can decide whether a human is reactive or negative ([ugm.ac.id](http://ugm.ac.id)).

**Table 1. Comparison of COVID-19 Test Kits in Indonesia**

Test Method	Right to Use	Procedure	Result Time	Sensitivity (%)	Specificity (%)	Cost in one test (Rp)
RT-PCR	After four days of exposure to the virus	Detection of viral particles from nasal/throat swab specimens	12 hours to one week	89	100	900.000 - 3.500.000
Antigen Rapid Test	After four days of exposure to the virus	Deteksi partikel virus dari spesimen usap hidung / tenggorokan	15 – 30 minutes	89,9	99	275.000
GeNose	After two days of exposure to the virus	Detection of respiratory pattern typical gas composition	2-3 minutes	89-92	95	10.000 - 25.000

*Sumber: The Conversation / Dian Kesumapramudya*

The presence and breakthrough of Indonesian scientists in producing the GeNose COVID-19 test kit have received appreciation from the government. The Ministry of Research and Technology – National Research and Innovation Agency (BRIN) will support GeNose's follow-up clinical trials. The Indonesian government sponsored second clinical trial through the National Research and Innovation Agency (BRIN) is expected to be used massively by the community, especially in the screening process (edukasi.sindonews.com).

The number of hospitals and patient samples was expanded in phase 2 clinical trial conducted in November – December 2020. In this next stage, the GeNose clinical trial involved ten hospitals and approximately 1,600 patients as a sample. But unfortunately, in the middle of the external validity process involving three universities (the University of Indonesia, the University of Airlangga, and the University of ANDALAS) as part of the post-marketing analysis, there were calls from several local governments to stop screening using the GeNose tool for people who want to enter their area. For example, the local government of Bali Province, through PT. Angkasa Pura issued a regulation prohibiting the use of the GeNose test starting June 30, 2021. Whereas previously, since April 9, 2021, GeNose was recognized and could be a condition for traveling. Ngurah Rai Airport only accepts health documents based on PCR test results (bisnis.tempo.co).

Furthermore, this study will identify the nationalization of GeNose as a COVID-19 test kit in Indonesia, as well as the securitization of the issue of GeNose carried out by several local governments.

## LITERATURE REVIEW

Many studies have been conducted to examine the pandemic, especially in the dynamics of COVID-19 diagnostics. In general, those studies focus on three aspects: COVID-19 diagnostic examination in general (Halmar, Febrianti, Kada, 2020;), COVID-19 Detection Method Controversy in Indonesia (Wahjudi, 2020), and more specifically, discuss the assays of COVID-19 through breath (Nurputra, 2020).

In the general COVID-19 diagnostic examination, Halmar, Febrianti, and Kada conducted a literature study using three databases (Pubmed, Science Direct, and Google Scholar). This article identifies the COVID-19 detection checks that several countries have carried out. This study concludes that an accurate and precise COVID-19 detection test must combine Real-Time Polymerase Chain Reaction (RT-PCR), Computed Tomography (CT)-Chest, and Rapid Test (Halmar et al, 2020).

The dynamics of the COVID-19 detection method in Indonesia were discussed by Wahjudi (2020). He departed from differences in public understanding of testing principles, the immune response between individuals, and differences in knowledge of people infected with the COVID-19 virus. The study concluded that the rapid test results may or may not be the same as the (molecular) swab test. Rapid reactive results are not necessarily positive swab tests and vice versa. This is due to several aspects. First, the virus (viral nucleic acid) in the body is detected about 4-7 days after infection but is not seen at the beginning and end of the infection phase. At the same time, antibodies began to be detected seven days after infection. Second, the dissimilarity lies in the method and principle of the examination test between the rapid and swab tests. Serological tests / rapid antibody tests are used for information on the phase of infection and surveillance purposes, namely to determine the dynamics of the spread of the virus in the community and to find out how many people in a population have become immune. In comparison, the swab test is more personal.

A more specific study was conducted by dr. Dian K. Nurputra. With the electronic-nose method, Nurputra added a variant of the COVID-19 detection test that uses the breath technique. Through clinical trials on several patients spread across 8 (eight) hospitals in Indonesia, Nurputra and Kuwat Triyono claimed that the accuracy of the breath method assisted by machine learning was above 90% in identifying the COVID-19 virus (clinicaltrials.gov).

Based on our traces on the sources above, our study shares similarities and differences from the above studies. Our analysis also looks at the various COVID-19 test kits in Indonesia. We also would like to know the correlation of GeNose as a national product in Indonesia with others. But instead of looking at the correlation between GeNose, from nationalization and now being securitized. We focus our study on social-political behavior: should GeNose be securitized?

## RESEARCH METHOD

This study employs a qualitative approach. According to Neuman (2014), in a qualitative approach, the researcher is the instrument of the study. Researchers actively interact with the environment, employ many logics in practice, are subjective, and use their perspective to gain a complete understanding of social life. A qualitative approach was selected to answer the first two problems of the study, while a descriptive method was employed to answer the third research question.

The study's unit of analysis was GeNose as COVID-19 test kits in Indonesia. Using purposive sampling, the study participants were (1) Prof Kuwat Triyono as, inventor of GeNose, (2) Some of the local governments in Indonesia which prohibit the use of GeNose as a COVID-19 test kit.

In addition, observations were made on the track record of GeNose. These were conducted in the last year. The secondary data of the study was obtained from printed media, online media, books, documents, and archives related to GeNose as COVID-19 test kits in Indonesia. Observations were conducted to collect data regarding the GeNose journey in obtaining marketing authorization from the ministry of health of the Republic of Indonesia until the finally appeared securitization issue of using GeNose (Spradley; 1980, Denzin and Lincoln; 2000).

The data was analyzed qualitatively. Analysis was done interactively and continuously. To ensure data credibility, triangulation and peer group discussion were conducted. The triangulation technique covers data collection triangulation, source triangulation, and time triangulation. Based on the peer group discussion, critiques, feedback, and suggestions were obtained (Sugiyono, 2009).

## RESULT AND DISCUSSION

### Nationalization of GeNose

According to Kautsky (1902), nationalization is a method of organizing and administering industry. The community owns the means of production, and the government is, at least in the last resort, responsible for its control. In another opinion, recent nationalization, therefore, is a piecemeal and empirical approach to much broader ideas, such as that the whole of the industry within one country should be brought under state operation or that the entire industry in the world might be usefully organized to work together under some supernational authority.

Kautsky's claim of efficiency is also added when talking about nationalization. Nationalization is a more efficient way of organizing an industry than is possible while it remains in private hands. Several advantages of carrying out a nationalization policy are; nationalization would abolish the evils inherent in competition, private profit-making, and the private ownership of the means of production; that it would open up the way for workers' control in the industry; or that it would result in an equal distribution of income or capital or that it would provide an answer to the manifold dangers of private monopoly.

In line with the above, Jewkes (1953) underlines the location of efficiency when using nationalization. Jewkes provides three conditions for industrial nationalization:

1. The nationalized industry is a larger operating unit than those it replaced. From this arises the claim for the economies of scale.
2. The nationalized industry is monopolistic. The claim that it can adopt complete integration and coordination of related functions arises.
3. The nationalized industry is not operated for private profit. From this, it is asserted that price and investment policy can be made more rational and that the collaboration between different class workers in the industry can be made more willing, smoother, and fruitful.

The researcher then uses the idea above to see how the process of GeNose nationalization in Indonesia. Researchers at least look at some indicators when looking at the nationalization of industry (GeNose) in Indonesia. *Firstly*, Gadjah Mada University, a campus that promotes the discovery of GeNose products, is a state-own campus. *Secondly*, researchers involved in GeNose products do not seek funding from sponsors. *Thirdly*, the government is a sponsor. The Ministry of Research Technology (National Research and Innovation Agency Republic of Indonesia) appreciates and supports by providing a research budget. *Fourthly*, the distribution permit is issued by the Ministry of Health with the number AKD 20401022883 so that it can be mass-produced and distributed to the public. *Fifthly*, the results of the genose test can be used for land, sea, and air travel (the circular letter COVID-19 task force No.12/2021). From these five data findings, it is concluded that the Indonesian government carries out a process of nationalization product of GeNose.

### **Buzan and Securitization of GeNose in Indonesia**

Barry Buzan and Ole Weaver make the security dimension a social construction. His work *Security; A New Framework for Analysis* (1998) defines securitization as a construction process; something that was previously considered "normal" becomes a "security" problem. Buzan added that the securitization process could be regarded as successful when it meets four conditions:

1. The ability of the securitizing actor to convince the public that an object of reference is facing a threat that can be fatal if it is not handled quickly and appropriately. So it is necessary to provide complete and accurate data that can make the public panic about the threat.
2. The speech act must convince the public that the object is facing a threat, so appropriate political jargon or terminology is needed.
3. The public who becomes the audience must have an adequate level of education and access to sufficient information to understand the message conveyed adequately. This is useful for ensuring that the public understands the speech acts carried out by securitization actors and responds to them with rational actions.

4. The proper socio-economic context will contribute to the securitization process of an issue. A securitization actor will succeed if the speech act is in the appropriate socio-economic context (Buzan et al., 1998).

The idea from Buzan above was then used to guide the researcher to see the GeNose securitization process in Indonesia. Researchers notice that the existence of GeNose after getting the product nationalization process is now a source of threat. A group of actors carries out the social construction of GeNose as a security threat. GeNose is considered not credible in identifying the COVID-19 virus. The evidence is the increasing number of people exposed to the COVID-19 virus.

Then the question is, what is the relationship between GeNose's credibility as a COVID-19 tool kit and the increasing number of people exposed to the COVID-19 virus. After obtaining a distribution permit from the Ministry of Health on December 24, 2020, the results of the GeNose test were then officially a travel requirement. Through the Circular of the Ministry of Transportation No. 24/2021, the Indonesian government aligns the work of the GeNose nation with the results of PCR tests and foreign antigens. Because in the circular letter, GeNose test results are officially a requirement for traveling at train stations, docks, and terminals starting January 26, 2021. While at the airport, GeNose test results have been recognized since April 1, 2020. With massive GeNose test results in all spots and people's mobility, it is easier for people to travel during the pandemic era. It only costs Rp. 20,000 – Rp. 40,000, the public can find out the results of the COVID-19 test in minutes.

Problems arise when policies from several regions explicitly prohibit using the GeNose test as a COVID-19 detection in their area. The Bali Regional Government issued a policy banning the use of GeNose test results at airports, piers, and all entrances to Bali starting on June 30, 2021. The ban on using GeNose test results is stated in the Governor's Circular Letter No. 8/2021 concerning implementing Micro Community Activity Restrictions (PPKM). in Bali. The Bali government only recognizes negative results of the PCR swab test for a maximum of 2 x 24 hours. This is all to suppress the spread of the coronavirus in Bali.

Thus, the so-called GeNose securitization actor is the Bali Regional Government. To protect the Balinese people against the increase in COVID-19 in their area, it is necessary to carry out the social construction of GeNose as a security threat. Due to the growing data, the increase in COVID-19 stems from one of the sources of community mobility which is still high in the pandemic era. This high mobility is supported by the results of the GeNose test, which is cheap and produces fast results. It can be said that the Bali government does not believe that the GeNose test results can carry out maximum screening. The second securitizing actors come from non-state actors, such as the Indonesian consumer agency Foundation and biologists. They urged the government to review the use of GeNose in Indonesia. The conditions for traveling can be back using a swab PCR and a rapid test antigen (tribunnews.com).

The second condition of securitization is the speech act. In this context, what is meant by the speech act is the policy of prohibiting the use of GeNose test results as

stated in the Governor's Circular Letter No. 8/2021. The securitization statement in the official policy smooths the securitization of security issues.

The third condition is audiences/public. In this case, the people must have an adequate level of education and reasonable access to information to understand the message conveyed. If the securitization message is conveyed correctly, the community will respond rationally. One evidence of this securitization process being captured by the community is the decline in the number of visits and tourists to Bali. The number of tourists decreased by 41% after the ban on GeNose test results was imposed (bali.bisnis.com).

The fourth condition is that the proper socio-economic context will contribute to the securitization process of an issue. The Bali government issued a policy to ban the GeNose test results when the delta variant COVID-19 was already widely found in Indonesia. The momentum of the approach taken by the Government of Bali is very appropriate. The delta variant (India) is known to be more deadly and contagious than the Alpha (UK) and Beta (Africa) variants. The accumulation of these four conditions for the securitization process can thus create the social construction of GeNose as a security threat (securitization).

**Table 2. Securitization of GeNose COVID-19 Test Kits in Indonesia**

<b>Securitizing Actors</b>	<ul style="list-style-type: none"> <li>• State Actor; Bali Government</li> <li>• Non-State Actors;</li> <li>• Indonesian Consumer Foundation (YLKI)</li> <li>• Biologist</li> </ul>
<b>Speech Act</b>	<ul style="list-style-type: none"> <li>• The statement prohibiting the use of the Genose test contained in Bali Governor's Circular Letter No.8/2021</li> <li>• YLKI's statement to remove the use of GeNose as a condition of travel</li> <li>• Molecular biologist statement asking the government to stop GeNose temporarily</li> </ul>
<b>Referent Object</b>	Indonesian people (has understood the message conveyed) -- The number of tourists in Bali decreased by 41% after the ban on GeNose test results was imposed.
<b>Socio-economic context</b>	GeNose ban policy along with the emergence of the COVID-19 Delta variant.

## CONCLUSION

Through this study, we can confirm that there is an effort to nationalize the GeNose COVID-19 Test Kits product in Indonesia. On behalf of the needs of many people in the era of the pandemic for the detection of the COVID-19 virus, the Indonesian government made efforts to nationalize the GeNose product. This effort can be seen in Gadjah Mada University, which promotes the discovery of GeNose products on state-own campus. *Secondly*, researchers involved in GeNose products do not seek funding from sponsors. *Thirdly*, the government is a sponsor. The Ministry of Research Technology (National Research and Innovation Agency Republic of Indonesia) appreciates and supports by providing a research budget. *Fourthly*, the



distribution permit is issued by the Ministry of Health with the number AKD 20401022883 so that it can be mass-produced and distributed to the public. *Fifthly*, the results of the genose test can be used for land, sea, and air travel (the circular letter COVID-19 task force No.12/2021).

Unfortunately, in less than one year GeNose COVID-19 test kits used by the people of Indonesia, there is an effort to GeNose social construction as a security threat. The Government of Bali, the Indonesian Consumers Foundation, and biologists carries out the securitization of GeNose. The form is to make the speech act (Governor's Circular Letter No. 8/2021). After appearing ban Genose test results used to enter Bali, people responded rationally to the evidence that public visits to Bali dropped by 41% since the ban was imposed. From this, it can be concluded that the securitization of genose is running perfectly. When the Bali government issued a ban on genose testing, another area was slowly followed. Bali is one of the icons of Indonesia.

## REFERENCES

Buzan, B., Weaver, O., de Wilde, J. (1998). *Security; A New Framework for Analysis*, Boulder, CO, Lynne Rienner.

Denzin, N.K., Lincoln, Y.S. (2000). *Handbook of Qualitative Research; 2<sup>nd</sup> Ed*, SAGE, Thousand Oaks.

Halmar, H. F., Febrainti N., Kada, M. K. R. (2020). "Pemeriksaan Diagnostik COVID-19, Studi Literatur", *Jurnal Keperawatan Muhammadiyah*, Vol.5 (1).

Jewkes, John. (1953). "The Nationalization of Industry", *The University of Chicago Law Review*, Vol.20 (4).

Neumann, W. (2014). *Social Research Methods Qualitative and Quantitative Approaches; 7<sup>th</sup> Ed*. Pearson, Essex, UK.

Nurputra, D. K. (2020). "Genosvid Diagnostic Test for Early Detection of COVID-19", *Clinical Trials, US. National Library of Medicine*.

Wahjudi, M. (2020). "Kontroversi Metode Deteksi COVID-19 di Indonesia", *KELUWIH; Jurnal Kesehatan dan Kedokteran*, Vol.2 (1), Desember

Indonesia COVID-19 Task Force, The Circular Letter No.12/2021

Bali Government, Governor's Circular Letter No. 8/2021

<https://www.tribunnews.com/bisnis/2021/06/24/genose-c19-dinilai-memiliki-akurasi-rendah-kai-silakan-ditanyakan-ke-satgas-covid-19>

<https://bali.bisnis.com/read/20210701/561/1412375/GeNose-dilarang-pergerakan-penumpang-di-bali-anjlok>

<https://clinicaltrials.gov/ct2/show/NCT04558372>

<https://bisnis.tempo.co/read/1477840/GeNose-tak-berlaku-penumpang-pesawat-ke-bali-wajib-tunjukkan-hasil-tes-pcr>

<https://theconversation.com/riset-GeNose-c19-hidung-elektronik-pendeteksi-virus-corona-sensitivitasnya-sebanding-tes-pcr-154828>

<https://edukasi.sindonews.com/komentar/176068/211/kemenristek-dukung-uji-klinis-genos-teknologi-pengendus-covid-19-buatan-ugm-1600999762>

<https://travel.kompas.com/read/2021/04/01/134015027/harga-dan-cara-tes-GeNose-di-bandara?page=all>

<https://health.detik.com/berita-detikhealth/d-5476838/total-2021-unit-GeNose-c19-didistribusikan-ke-mana-saja>

<https://ugm.ac.id/id/berita/20120-GeNose-ugm-bisa-deteksi-covid-19-hanya-dalam-80-detik>