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POLITICAL AND ECONOMIC FACTORS IN THE DECISION TO USE THE CHINESE VACCINE

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Abstrak

*Artikel ini mendiskusikan faktor-faktor yang memengaruhi negara untuk menggunakan vaksin Cina dengan menguji pendapat realisme dan liberal institusional tentang nilai politik dan institusi ekonomi yang memengaruhi keputusan negara untuk bekerjasama dengan negara lain. Melalui analisis regresi, studi ini menguji hubungan antara faktor politik (democracy) dan ekonomi (keanggotaan dalam institusi multilateral) dan keputusan menggunakan vaksin Cina. Studi ini menemukan bahwa: (1) negara dengan tingkat demorkrasi yang tinggi cenderung tidak menggunakan vaksin dari Cina; (2) keanggotaan dalam kerjasama ekonomi multilateral dibawah kepemimpinan Cina (*AIIB dan BRI*) menunjukkan perbedaan tendensi dalam pilihan menggunakan vaksin Cina. Studi ini menunjukkan bahwa situasi politik domestik dan karakter kerjasama ekonomi multilateral memengaruhi perilaku negara dalam bekerjasama dengan negara lain. Studi ini juga mengonfirmasi bahwa vaksin adalah masalah kesehatan global, namun faktor politik dan ekonomi tampak berhubungan dengan pemilihan vaksin.*

Abstract

This study discusses the factors that may influence the state to use the Chinese vaccines by examining the realism and liberal institution argument that the political value and institutions influence a state to cooperate with another state. This study examines the association between political (democracy) and economic (economic multilateral institution membership) factors and the state's decision to use Chinese vaccines through regression analysis. This study found that: (1) states with a high level of democracy tend not to use vaccines from China and prefer to use other vaccines; (2) membership in multilateral economic cooperation under China's leadership (BRI and AIIB) shows different tendencies in vaccine selection. This study shows that domestic politics and the nature of multilateral cooperation in an international institution influence state behavior. This study confirms that the vaccine is a global health issue, but political and economic factors appear to be associated with vaccine selection.

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INTRODUCTION

Since 2020, there has been hoped for handling the Covid-19 epidemic through vaccination. Several pharmaceutical companies have succeeded in producing vaccines. However, this situation also brought competition among vaccine producer states, where China was involved. Many states bought and received Chinese vaccines, but others are reluctant to use them because of their efficacy and effectiveness. Nevertheless, the debates on the Chinese vaccine spillover from health to politics. The vaccine becomes not only a global health issue since political and economic factors may also influence the state's decision to use Covid-19 vaccines (Brown & Wang, 2020).

Covid-19 and its vaccine are part of a global health issue. The global health issue is related to medical diplomacy, where states create cooperation to respond to humanitarian problems (Bourne, 1978) both in bilateral and multilateral mechanisms (Katz et al., 2011), then also include NGOs, private and public (Chattu & Knight, 2019). The World Health Organization (WHO) called this effort global health diplomacy, which aims to create a safe world, improve relations and commitment among actors for the quality of health, and achieve more significant targets, namely reducing poverty and increasing equality (WHO, 2021). Therefore, communication and cooperation between states are critical because health problems cover economic, geopolitical, security, social justice, human rights, public policy, and foreign policy issues. Therefore, the Covid-19 pandemic is a complex rather than a health problem.

However, the global pandemic has been politicized. It sometimes leads to the search for scapegoats, mistrust between governments and institutions, and discontent between science (scientists), policy (government), and society (AlKhaldi et al., 2021). At the same time, diplomacy between states becomes critical to sharing information and data on the virus (Elbe & Buckland-Merrett, 2017). Moreover, the vaccination is related to government capacity-national sovereignty, success-failure of vaccination, and the sense of citizenship (Greenough et al., 2017). Therefore, states place access to vaccines as their top priority in international affairs, and "vaccine nationalism's politics" is on the other side (Fidler2020). As a result, states face a global access gap, especially in low-income and middle-income states (Kim et al., 2021).

The Covid-19 pandemic also brings changes in diplomacy, both in practice and strategy. It brings the emergence of online or

virtual diplomacy, which creates multiple challenges yet saves the budget (Munoz, 2020). Strategically, the vaccine-producer state uses this situation as part of its public diplomacy. As the vaccine producer, China also uses vaccines as a tool of diplomacy through "coronavirus diplomacy" (Kobierecka & Kobierecki, 2021).

China is a crucial case in the Covid-19 pandemic for two reasons. First, China suffered at home and got a negative image internationally as the source of the virus. Therefore, China tries to improve its positive image through several diplomacy strategies like mask diplomacy, debt relief, medical assistance, and vaccine diplomacy. China sent medical equipment and teams to states suffering from Covid-19, like Italy (European Commission, 2020).

Second, China has a regional multilateral economic institution that spillovers to the health issue. The Belt and Road Initiative (BRI) allows member states to collaborate in handling pandemics (Tang et al., 2017). Through BRI, China promotes its "health silk road" program (Rudolf, 2021), where African states are the main target (Killeen et al., 2018). Before the Covid-19 outbreak, China is experienced in using BRI to provide health assistance for Ebola cases in Africa (Tang et al., 2017).

Many states welcomed the Chinese vaccine, but others were reluctant to receive it. This situation brings into question: Why do states use the Chinese vaccine? What factors cause the state to use the Chinese vaccine? This study attempts to answer these questions using empirical research in 162 states by examining the association between domestic politics, multilateral and bilateral cooperation with China, and the decision to use the Chinese vaccine

ANALYTICAL FRAMEWORK

Vaccine diplomacy

The vaccine is related to foreign policy and diplomacy. Several states use the vaccine as an instrument in foreign policy and implement vaccine diplomacy (Hotez, 2001). Vaccine diplomacy has been implemented since the Cold War (Hotez, 2021), and it has two forms: vaccine diplomacy and vaccine science diplomacy (Hotez, 2014). The first is part of global health diplomacy, where the state and non-state actors cooperate to address health problems and humanitarian intervention. The latter is related to collaborative research and technology in vaccine manufacturing. Therefore, vaccine potentially becomes a soft power and critical negotiation among states (Pannu & Barry, 2021).

Theories of International Relations explain why a state cooperates or conflicts with another state. Realism and liberalism emphasize the rational reason for the state to act, including military and economic situations. In contrast, constructivism emphasizes ideational factors like identity and norms that influence a state's action. Proponents of offensive-defensive realism argue that domestic situations determine the state's cooperation or conflict, but states with the same thoughts or views tend to cooperate (Adams, 2003). In other words, the closeness of political ideology or political system may increase the state's probability of joining or creating cooperation.

Meanwhile, liberal institutionalism has two critical explanations for international cooperation. First, international organizations have an essential role in facilitating international cooperation where states use them as means to achieve their national interests (Keohane & Martin, 1995). Second, democratic states cooperate because they share liberal values (Doyle, 1986). This second explanation seems close to the offensive-defensive realism argument, where the closeness of thought or value influences the state's decision for cooperation.

Lai and Reiter argue that credible commitments, economic interdependence, and constructivism share their thoughts on why democracies tend to ally with other democracies and an alliance likely to be made by states with similar regime types (Lai & Reiter, 2000). Their empirical study on international alliances from 1816 to 1992 found that in post-World War II, states with similar regime types tended to ally with each other, while the autocracies were more like to ally than democracies. Their study explained how domestic politics (regime type) relate to international cooperation (alliance behavior). However, a systemic theory in International Relations often ignores domestic politics, which creates a limitation in understanding international cooperation (Milner, 1992). Therefore, combining the international and domestic situation becomes critical to explaining international cooperation as international action.

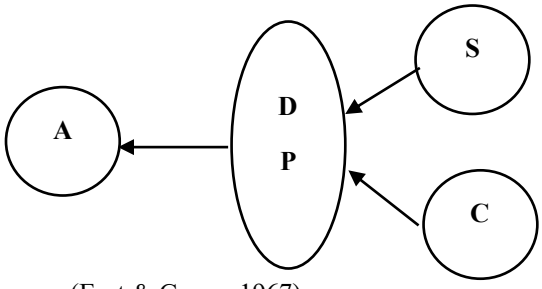
Maurice A. East and Phillip M. Gregg create a statistical model to explain the state's decision to cooperate or conflict in its international affairs (East & Gregg, 1967). They argue that domestic and international situations influence international action, while the decision process is the intervening variable. When states face identical international and domestic situations, experience similar histories, and maintain similar goals, their government tends to act in

similar international action. In their model, the international action becomes the *dependent variable,* where the international situation and domestic condition influence the government's complex evaluation and decision. East and Gregg operationalized the *explanatory variable* as the domestic condition like political stability, economic development, and political freedom. The degree of isolation and collaboration, international interaction and participation, ideological dimension, export, and the number of embassies and legations were among the indicators that describe another explanatory variable, the international situation. Following regression equation and Figure 1 describes their idea:

Figure 1. The relations between international situation, domestic condition, and international action

$$A \leftarrow f(S, C)$$

$$A = a + b_1(S) + b_2(C)$$



Source: (East & Gregg, 1967)
Note: A is the international action, DP is the decision process, S is the international situation, and C is the domestic condition.

This study adopts the realism and liberal institutional arguments that the state's characteristics and international institutions influence the state's decision to cooperate with other states. It also adopts the East and Gregg model by examining the association between political and economic factors that might contribute to the state's decision to use or select the vaccine.

This study assumes that states facing an identical situation (the Covid-19 pandemic); therefore, the international situation (membership in BRI and AIIB) and domestic conditions (democracy) might influence the state's international action (use or not use of Chinese vaccine). According to these assumptions, this study attempts to examine the following two hypotheses:

H1: *More democratic states would be more reluctant to use the Chinese vaccine.*

H2: *Members of the multilateral economic institution under China's leadership would prefer to use a Chinese vaccine.*

Chinese Vaccine diplomacy

Vaccine diplomacy is critical for China to improve its positive image while showing its global role. President Xi Jinping emphasized that China produces and distributes vaccines as "global public goods." Therefore, cooperation is more critical than suspicion of other states. The Chinese vaccine diplomacy has two critical points.

First, Chinese vaccine diplomacy aims to reduce China's negative image due to the pandemic (Freymann & Stebbing, 2020). Second, it shows contrasting ideas and positions from United States President Donald Trump on "American First." China constructs its image and role in responding to global problems and invites international cooperation rather than a selfish state.

In September 2020, China created a vaccine network in more than 100 states with four mechanisms: offering Chinese loans for buying vaccines, official testing /manufacturing agreements, supply priority, and reported testing/manufacturing agreements (Bloomber News, 2020). In November 2020, 15 states accessed the Chinese vaccine, seven states promised priority access, and three states promised to get vaccines (Tan & Maulia, 2020). Most of these states are in Southeast Asia, South Asia, the Middle East, and Latin America. At the end of 2020, three Chinese vaccines, Sinovac, SNBG, and CanSino, have been distributed in 15 states in Asia and Latin America (Devonshire-Ellis, 2020). While in the Western Balkans, China is the only external actor in the region that plays a significant role in pandemic relief assistance, including mask and vaccine diplomacy, which results in an asymmetrical relationship between China and states in the region (Vangeli, 2021). Then, the vaccine becomes China's tool to improve its soft power (Lee, 2021).

Meanwhile, China has the other strategic diplomacy to promote its vaccine diplomacy through multilateral economic cooperation. Many states joined the Belt and Road Initiative (BRI) and Asian Infrastructure and Investment Bank (AIIB), the two multilateral economic cooperation under China's leadership. These institutions potentially become a means for China to influence other states. When China's economic power increases, the need for its role at the global level also increases, including in the health sector (Minghui & Guoping, 2014). China seeks to enhance its global health strategy through trade and investment cooperation, including campaigning for trials and promoting its vaccines to many states (Cohen, 2020). Moreover, when the restrictions on economic activity have slowed states' economic growth, and some have even experienced negative economic growth (Jones et al., 2020), China provides economic assistance to access its vaccine through aid and loans. China provides financial assistance to states experiencing economic problems, especially in Africa.

However, China also faces critics. There was a suspicion of Chinese vaccine diplomacy as a global charm offensive that presented two situations: hope and trust gap (Japan Times, 2020). In Southeast Asia, China's charm offensive has declined the regional's trust in China (Ha, 2021). The states in the region acknowledge China's support in Covid-19 assistance, but the distrust of China is increasing. In the Philippines, Chinese vaccine diplomacy is like a gamble for two states (Hung, 2021). For China, if the Chinese vaccine is successful and effective in the Philippines, it will increase the promotion of the Chinese vaccine. However, the Philippines face vaccine effectiveness issues and diplomatic debt to China which could adversely affect the Philippines' geopolitical position. At the same time, Brazil rejected the Chinese and Russian vaccines (Gramacho & Turgeon, 2021). The United States also criticized China's mishandling of information about the virus since there are no independent media in the authoritarian state (Bahi, 2021).

Moreover, China also faces "competition" with other vaccine-producer states. States such as the United States, the United Kingdom, Germany, Russia, India, Cuba, and others also produce Covid-19 vaccines (Table 1). This situation resulted in several options for states to use Covid-19 vaccines other than Chinese vaccines. Therefore, there were three groups of states that consumed Chinese vaccines. They were the states that only used the Chinese vaccine, states that did not use Chinese vaccines, and states that used the Chinese vaccine and other vaccines.

This situation raised the question, what factors influence a state's decision to use or not use a Chinese vaccine? Do they use Chinese vaccines only because of health issues? The characteristic of the vaccine, the health problem importance, economic factor, alternative treatment, decision-making process, vaccine impact, vaccine-related program, and vaccine's acceptability, access, equity, and ethic become the preferences for the state's decision to introduce the vaccine (Donadel et al., 2021). These factors show that the decision is not merely related to the health issue but includes economic (cost, funding, and price) and political factors (political priority and decision-making process).

Table 1. List of the Vaccine-Producer States and Their Vaccine (up to August 2022)

No	State(s)	Vaccines
1	Australia	SpikoGen
2	China	CanSino, Sinopharm/Beijing, Sinopharm/Wuhan, Sinovac, IMBCAMS, KCONVAC, ZF2001
3	Cuba	Abdala, Soberana Plus, Soberana02

4	India	Covaxin
5	Iran	COVIran Barekat, FAKHRAVAC, Razi Cov Pars
6	Kazakhstan	QazVac
7	Russia	EpiVac Corona, KOvivac/Chumakov, Sputnik Light, Sputnik V
8	Taiwan	Medigen
9	United Kingdom	Oxford/AstraZeneca
10	United States	Moderna, Novavax, Cobervax
11	The United States with Janssen Pharmaceuticals (Netherland and Belgium)	Johnson&Johnson
12	The United States and Germany	Pfizer/BioNTech

Source: (Ritchie et al., 2021)

RESEARCH METHOD

This empirical study employs generalized linear regression to examine the association between political and economic factors and the state's decision to use the Chinese vaccine. Until early 2022, Ourworldindata.org lists 222 states and the vaccines used for Covid-19 vaccination (Ritchie et al., 2021). Almost all the states used both Chinese and non-Chinese vaccines. Only Chad and Equatorial Guinea used only the Chinese vaccine, while almost all Western states did not use the Chinese vaccine (Table 2). This study considers this data as the dependent variable in this study. However, there are only 162 states in this study because of the lack of data on other variables.

Table 2. List of states that used only Chinese and non-Chinese vaccines

Vaccine	State(s)	Total
Chinese	Chad, Equatorial Guinea	2
Non-Chinese	Andorra, Angola, Anguilla, Antigua and Barbuda, Aruba, Australia, Austria, Bahamas, Belgium, Bermuda, Bonaire Saint Eustatius and Saba, British Virgin Island, Bulgaria, Canda, Cayman Islands, Central African Republic, Cook Islands, Costa Rica, Croatia, Cuba, Curacao, Cyprus, Democratic Republic of Congo, Denmark, England, Estonia, Eswatini, Faeroe Islands, Falkland Islands, Fiji, Finland, Fracne, French Polynesia, Germany, Ghana, Gibraltar, Greece, Greenland, Grenada, Guatemala, Guernsey, Haiti, Honduras, Iceland, India, Ireland, Isle of Man, Israel, Italy, Jamaica, Japan, Jersey, Kenya, Kiribati, Kosovo, Latvia, Liberia, Liechtenstein, Lithuania, Luxeburg, Malawi, Mali, Malta, Monaco, Montserrat, Nauru, Netherlands, New Caledonia, Nw Zealand, Nicaragua, Nigeria, Niue, Northern Ireland, Norway, Panama, Papua New Guinea, Pitcairn, Poland, Romania, Russia, Saint Helena, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Scotland, Saint Maarten, Slovakia, Slovenia, Solomon Islands, South Africa, South Korea, South Sudan, Spain, Sweden, Switzerland, Taiwan, Togo, Tokelau, Tonga, Turks and Caicos Islands, Tuvalu, United Kingdom, United	110

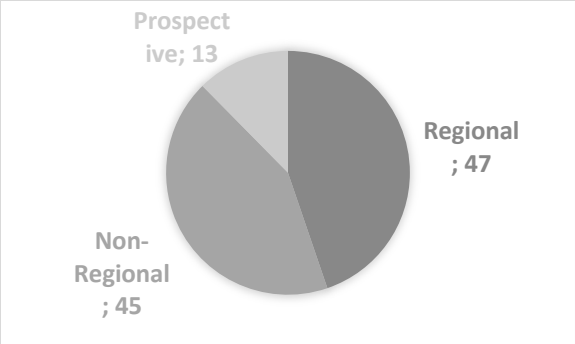
States, Vanuatu, Wales, Wallis and Futuna.

Source: (Ritchie et al., 2021)

This study uses the domestic political situation and economic cooperation with China as independent variables. This study uses Democracy Index 2021 from Economist Intelligence Unit (EIU, 2022) for the political situation variable. This report provides two critical data: the index of democracy for each state and the four categories of democracy (full democracies, flawed democracies, hybrid regimes, and authoritarian regimes). This study adopts the democracy index, consisting of several indicators' overall score, including the process in election and pluralism, the function of government, political participation, political culture, and civil liberties.

The economic factors consist of two indicators: AIIB membership and BRI membership. The AIIB official website (www.aiib.org) lists the states that joined this institution. Until August 2022, there were 47 regional members, 45 non-regional members, and 13 prospective members (4 from regional states and nine from non-regional states). The regional members come from Asia and the Pacific region, while the states from Europe, Africa, and America are considered non-regional.

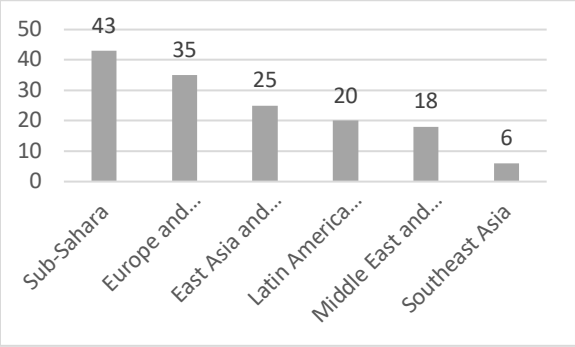
Figure 2. Number of AIIB members



Source:(EIU, 2022)

Meanwhile, the data on BRI membership is based on the Green Finance & Development Center report by FISF-Fudan University (Nedopil, 2022). This report shows that until early 2022, 147 states signed the MoU with China under the BRI cooperation. Among them, 43 states come from Sub-Sahara, 35 from Europe and Central Asia, 25 from East Asia and the Pacific, 20 from Latin America and the Caribbean, 18 from the Middle East and North Africa, and six from Southeast Asia.

Figure 3. Number of BRI members



Source: (Nedopil, 2022).

This study also considers the state's bilateral trade relations with China and vaccination rate as the control variable. The World Bank provides data on China's trade balance with partner states (World Integrated Trade Solution, 2021). The vaccination rate here refers to the total number of vaccination in 100 people and the data provided by the Coronavirus (COVID-19) Vaccinations-Our World in Data (Ritchie et al., 2021).

For the measurement of each variable (except for democracy index and vaccination rate), this study valued from data available. A state that uses the Chinese vaccine is valued by 1, and 0 for which does not use the Chinese vaccine. Value 1 adds to a state that is a member of BRI and 0 to a non-BRI member state. This measurement is also used for the AIIB members variable. While for the trade balance with China, a value of 1 add to the positive trade balance, and 0 for the negative trade balance. The detail of the variables and the measurements are described in the following table:

Table 3. Variables and Indicators

Variable	Description and Indicator	Source
Chinese Vaccine	States use the Chinese vaccine. Use Chinese vaccine(s) = 1; non use Chinese vaccine(s) = 0	(Ritchie et al., 2021)
Democracy	The democracy index, the democratic situation in domestic politics.	(EIU, 2022)
BRI membership	Membership in BRI; member =1, non member = 0	(Nedopil, 2022)
AIIB membership	Membership in AIIB; member = 1, non member = 0	(AIIB, 2022b)
Balance of Trade	The value of the difference between China's export and import to the trading and economic partners. Positive/Surplus=1, negative/deficit=0	(World Integrated Trade Solution, 2021)
Vaccination Rate	People are vaccinated per hundred.	(Ritchie et al., 2021)

Source**:** (World Integrated Trade Solution, 2021)

RESULT AND DISCUSSION

Table 4 shows the result of the regression analysis. According to this result, the democracy index was negatively associated and statistically significant with the Chinese vaccine. This result shows that the more democratic the state more likely the state is reluctant to use the Chinese vaccine. This result confirms H1, where the domestic situation (democracy situation) negatively affects the decision to use the Chinese vaccine.

Table 4. Regression Results

	Dependent variable:
	Chinese Vaccine
Democracy index	-0.481***
	(0.117)
BRI membership	1.473***

	(0.483)
AIIB membership	0.040
	(0.429)
Trade Balance	-0.197
	(0.425)
Vaccination Rate	0.013
	(0.010)
Constant	1.397**
	(0.770)
Observations	162

Note: *p<0.1; **p<0.05; ***p<0.01

BRI membership is positively associated and statistically significant with the Chinese vaccine and shows that the member of BRI is likely to use the Chinese vaccine. The AIIB membership also shows a similar positive association; however, it is not statistically significant. Therefore, the result can not estimate a positive association between AIIB membership and the decision to use the Chinese vaccine. In other words, the regression result only confirms BRI membership but not AIIB membership. Therefore, the result partially confirms the H2.

Two control variables show different estimations. The trade balance shows a negative association with the Chinese vaccine, and it should be assumed that when the state has a more favorable trade balance with China, it likely will not use the Chinese vaccine. In contrast, when a state's vaccination rate increases, it is likely to use the Chinese vaccine. However, we cannot use these two estimations since they were not statistically significant.

Chad and Equatorial Guinea only use the Chinese vaccine, which is included as authoritarian regimes. According to Democracy Index, their index is 1.67 and 1.92, placing 8th and 10th from the bottom, respectively. While according to the Freedom Institute report, they are included in the no free states category, with the total freedom value reaching only 5 for Equatorial Genuine and 15 for Chad on a 1 to 100 scale (Freedom House, 2022).

Most states not using the Chinese vaccine are primarily full and flawed democracies. Nineteen full democracies and 23 flawed democracies are not using the Chinese vaccine, while seven hybrid and 11 authoritarian regimes did not use it. In comparison, only Mauritius and Uruguay are fully democratic states that use the Chinese vaccine, while 28 flawed democratic states also use this vaccine. Furthermore, 29 hybrid regimes and 44 authoritarian states use the Chinese vaccine. These situations show that most democratic states are not using the Chinese vaccine, while most hybrid and authoritarian states use the Chinese. It indicates that democracy correlates to the decision to use the Chinese vaccine.

These results answered the questions on non-health factors in vaccine issues. Domestic politics—democracy situation—seems related to the decision to use the Chinese vaccine; the more democratic the state, the more reluctant to use it. This situation also relates to the theories that argue that the states prefer to cooperate with others with similar thoughts. This study shows that most democratic states use the vaccine from their fellow democratic states, not the Chinese vaccine. In contrast, most authoritarian states used the Chinese vaccine, while China is an authoritarian regime with a Democracy index score reached only 2.21, even under Russia (3.24), Vietnam (2.94), and Cuba (2.59). If we use the opposite direction of the H1, it should be a more autocratic state, more likely to use the Chinese vaccine.

There are two reasons why democratic states are reluctant to use the Chinese vaccine. First, most democratic states are also developed state economically. Most have the technology and financial power to access the Western vaccine, which is considered more efficient and powerful than the Chinese vaccine. While the poor or developing states depend on the international vaccination program under WHO, they face limited access and choice. China provides easier access to its vaccine through some mechanism and therefore attracts these states to use the Chinese vaccine. For some African states, Chinese vaccines became the best choice amidst limited access (Itugbu, 2021).

Second, as the theories argue, the democracies likely to cooperate with other democracies, which shows that a democratic state trusts more other democracies than non-democracies. In the case of the Chinese vaccine, most Western states distrust the Chinese vaccine and the Chinese government.

Two critical points explain the significant positive association between BRI membership and the use of the Chinese vaccine. First, BRI facilitates and provides a framework for China to promote its vaccine to BRI members. China sent 890.02 million vaccines to the Asia Pacific, while 293.26 million to Latin America (Bridge, 2022). Chinese vaccines are also distributed to Africa (125.6 million) and Europe (57.45 million). China actively promotes cooperation on the Covid-19 vaccine through activities under BRI and delivered 350 million vaccine doses (Xinhua, 2022). The BRI has become a hub for vaccine cooperation (Devonshire-Ellis, 2021), where China uses this institution to create a vaccine

partnership to address the vaccine gap and uneven vaccine access and distribution (Yang et al., 2021). In 2021, 29 states—covering Southeast Asia, South Asia, Central Asia, Middle East, North Africa, Latin America, Oceania, and North Asia—representing 35 % of the world population (2021) joined this partnership.

Second, China has a long history of global health diplomacy with some BRI members. In 2016, the Chinese government promoted cooperation with WHO to improve world health through the Health Silk Road (HSR) to improve health in BRI member states (Huang, 2022). China uses regional multilateral economic cooperation (BRI) to develop a health cooperation framework under the HSR. The cooperation under BRI includes health cooperation programs like training for medical staff, capacity-building for public health crises, emergency medical relief for crises, promotion of Traditional Chinese Medicine (TCM), and accessible treatment abroad by Chinese doctors (Rudolf, 2021). Since the beginning of the BRI cooperation, China has already created some health cooperation with the ASEAN, Forum on China-Africa Cooperation (FOCAC), Central and Eastern Europe, the Arab League, South Asia, and Oceania states. Therefore, China has a network under BRI and uses it as the means for mask and vaccine diplomacy during the Covid-19 pandemic.

The situation in BRI may be relatively different from the AIIB since they work with different focuses. BRI focuses on trade cooperation, while AIIB focuses on financing investment and infrastructure projects. In other words, AIIB functions like a bank in general, while BRI is more of a trade cooperation forum. Meanwhile, even though Asian states dominate the AIIB, developed states which are part of the non-regional members also play critical roles since they also hold voting power. When China can use BRI directly to promote its HSR, AIIB provides indirect means for China's vaccine diplomacy. The critical role of AIIB is financing the vaccine program through a loan (AIIB, 2022a; Palma, 2020; Yiu & Butts, 2022). Therefore, the role of AIIB in China's vaccine project is more limited and indirect than BRI. Moreover, compared to BRI members, the characteristic of the AIIB member, including the democratic and developed states, may also contribute to the less significant contribution of the Chinese vaccine.

Several democratic and economically developed states joined AIIB like Australia, South Korea, New Zealand, Austria,

Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Luxemburg, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and United Kingdom. While among them, only Austria, Italy, Luxemburg, New Zealand, Poland, Portugal, and South Korea joined the BRI. However, the other high-income state, less or less the member of democracies in the Middle East and Asia, also joined the AIIB. The high-income state has more choices for vaccines than the low and lower-middle-income states since they usually also have access to Western vaccines. Moreover, as in the political factor, the democratic and developed states in the AIIB are likely not to use the Chinese vaccine. This situation may make the association between AIIB membership and the decision to use the Chinese vaccine insignificant, although it showed a positive association.

CONCLUSION

This study finds that among 162 states, the political factors—the democratic conditions—appear to be related to the state's decision to use the non-Chinese vaccine. Meanwhile, the membership of states in economic organizations under China, BRI, and AIIB, shows a different significant relationship due to the different characteristics of these two institutions. In addition, bilateral trade and vaccine rate is related to vaccine use decisions but not statistically significant. This study confirms realism theory on the argument that the similarity in thought influences a state's decision to cooperate. At the same time, it partially confirms institutional liberalism, where the institution facilitates cooperation among the member states. However, it also argues that the membership of the economic institution under China's leadership does not guarantee that the state members will use or use the Chinese vaccine.

Finally, there are some critical points derived from this study. *First*, this study shows that non-health issues—political and economic—appear to be related to the decision to use vaccines. *Second*, when some scholars argue that there is no association between democracy and Covid-19 death and vaccination rates (McMann & Tisch, 2021), this study finds that democracy is related to the decision to use the Chinese vaccine. *Third*, the nature of multilateral cooperation and the character of the member of the international institution may create a different effect for a specific similar issue. *Fourth*, like the East and Gregg (1967) argument, the combination of domestic and international conditions will provide a

comprehensive explanation of the state's international action. The WHO explains that global health diplomacy is multifaceted, multi-actor, and multilevel; therefore, the pandemic and the Covid-19 vaccine are broader than a health issue and include national and international situations.

Future studies on a more specific group of states other than regime type or democracy will provide more comprehensive insight. A study on the states that share cultural attributes and their attitude toward choosing vaccines will be a critical study, especially from a constructivism perspective. Other studies on the association between economic interdependence and the decision to use vaccines will also be critical research, especially from the International Political Economy perspective.

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