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The effect of Chinese vaccine diplomacy during COVID-19 in the Philippines and Vietnam: a multiple case study from a soft power perspective

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Vaccine diplomacy is a subset of global health diplomacy and refers to the use and delivery of vaccines to achieve a country's global health goals and foreign policy objectives. Countries have used vaccine diplomacy to increase their soft power during the COVID-19 pandemic. China, an emerging world power, was no exception in this trend. By December 2022, China had dispatched 1.65 billion vaccines worldwide; approximately one-third of the Chinese vaccines were sent to the Association of Southeast Asian Nations (ASEAN) countries. China attempted to increase its soft power via vaccine diplomacy to appeal to its neighbours with which it has long-standing territorial disputes in the South China Sea (SCS). Focusing on two key claimants in the SCS, our study has the following research question: How effective was Chinese COVID-19 vaccine diplomacy in the Philippines and Vietnam from a soft power perspective? Through a qualitative multiple case study research design, we determined the effectiveness of Chinese vaccine diplomacy in the Philippines and Vietnam by using four indicators of soft power: public opinion, foreign policy, attractiveness, and business and trade. Data collection consisted of a literature search of academic literature and newspaper articles that were published between 26 May and 13 June 2022. A thematic analysis was conducted to analyse the data. Analysing the effectiveness of Chinese vaccine diplomacy based on the four indicators of soft power, our results show that only the indicators of attractiveness in Vietnam and business and trade in the Philippines have somewhat improved. In contrast, the indicators of public opinion and foreign policy showed neutral or negative results for China. This study concludes that Chinese vaccine diplomacy in the Philippines and Vietnam during the COVID-19 pandemic was unsuccessful from a soft power perspective. One reason is that China undermined its soft power approach by simultaneously using hard power tactics in Southeast Asia. Using vaccine diplomacy to increase soft power is not always desirable from a global health perspective. Instead, countries should focus on equitable vaccine access and address asymmetrical power relations.

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Background

The term global health diplomacy is used to refer to two different processes. On the one hand, it refers to the international policy-making process, with negotiations between states and other actors to resolve health-related problems. On the other hand, it connotes the utilisation of health concepts in policy-shaping to achieve non-medical objectives, such as political, social, or economic goals (Fidler 2013, p. 693). Considering the first perspective, Kickbusch and Kökény (2013, p. 159) state that well-conducted global health diplomacy results in ‘improved global health, greater equity, better relations and trust between states’. From the second perspective, global health diplomacy can be seen as a form of ‘soft power’: the ability to affect others to obtain the outcomes one wants through attraction rather than coercion or payment (Nye 2008, p. 94). In this way, global health diplomacy can help a country to build its ideal image by winning the hearts and minds of people (Vanderwagen 2006; Fauci 2007), and it can be used to gain influence and to improve bilateral or multilateral relations (Drager and Fidler 2007).

During the COVID-19 pandemic, both types of global health diplomacy were observed across state actors: some aimed at improving global health and establishing solidarity and equity, others at gaining geopolitical advantages (Kickbusch and Liu 2022). A prominent form of global health diplomacy during the pandemic was vaccine diplomacy. Vaccine diplomacy, as defined by Hotez (2021, p. 28), is a way in which ‘large-scale vaccine delivery is employed as a humanitarian intervention’, including ‘the development or refinement of new vaccines achieved jointly between scientists of at least two nations’. It is important to note that this concept of vaccine diplomacy as a subset of global health diplomacy is not new or specific to the COVID-19 pandemic. The term vaccine diplomacy had been in use in academic literature well before the COVID-19 pandemic (Hotez 2001; Hotez 2014). An example of when large-scale vaccine diplomacy was used before the COVID-19 pandemic, is the cooperation between American and Russian scientists in the smallpox eradication campaign during the Cold War (Hotez 2021, p. 28). An alternative interpretation and use of the concept of vaccine diplomacy has been popularised since the COVID-19 pandemic: vaccines as a means to achieve geopolitical goals. Among others, Lee (2021) follows this interpretation and defines vaccine diplomacy as the use of vaccines to improve a country’s diplomatic relationship with other countries.

The People’s Republic of China (hereafter China), an emerging world power, was no exception in using vaccine diplomacy during the pandemic. At the World Health Assembly (WHA) meeting in May 2020, Chinese President Xi Jinping announced that China would consider its COVID-19 vaccines a ‘global public good’ (Niquet 2020). Since then, China has donated or sold its Sinopharm and Sinovac vaccines to many countries, making Beijing the leading global exporter and supplier of COVID-19 vaccines in 2021 (Lee 2021). China’s vaccine diplomacy started in July 2020 when the first Chinese vaccine trial outside China commenced in Brazil. In December 2020, Egypt became one of the first countries to accept vaccines from Chinese state-owned vaccine producer Sinopharm. As of December 2022, China has sold 1.59 billion COVID-19 vaccines through bilateral channels, of which 1.24 billion vaccines have been delivered. Furthermore, China pledged to donate another 315 million vaccines, of which 177 million have been delivered. In sum, 1.42 billion Chinese vaccines have been delivered worldwide to a total of 119 countries through bilateral channels (Bridge Beijing 2023).

Considering the geographical distribution of vaccines (see Table 1), it has been reported that China selected its recipient countries not based on need or reciprocity, but on political and

strategic reasons, such as a high geopolitical affinity with China and the absence of diplomatic ties with Taiwan (Lin et al. 2021; Suzuki and Yang 2022; Chen 2022). Moreover, many Chinese vaccine-receiving countries participate in the Belt and Road Initiative (BRI), a long-term project in which China invests heavily in infrastructural development between Europe and China (Ferdinand 2016). As such, China has been accused of using vaccine diplomacy as a soft power tool to achieve its self-interested foreign policy objectives, which include increasing its geopolitical influence and improving its international image (Cohen 2020), shifting away the blame as the origin of COVID-19 (Colley and van Noort, 2022, p. 244), replacing the United States as the world leader during the pandemic (Zhou, 2022), expecting recipient countries to give political or diplomatic returns (Lin et al. 2021), further promoting the BRI (Huang 2022), and boosting financial cooperation and trade (Kobierecka and Kobierecki 2021).

Apart from the motives of vaccine distribution, the efficacy of the Chinese-manufactured COVID-19 vaccines is equally contestable. Chinese inactivated vaccines are considered less effective based on the WHO efficacy threshold of 50%. For example, the efficacy rate of Sinovac is just above the threshold (i.e. 50.6%) and Sinopharm is less than 80% (i.e. Wuhan unit: 72.5%; Beijing unit: 79.3%) (The Straits Times 2021), whereas both Moderna and BioNTech Pfizer have an efficacy rate of over 95% (Zimmer et al. 2022). That said, the Chinese-manufactured vaccines also have a significant advantage over the mRNA vaccines, which have proven to be the most effective tool against the coronavirus including the new variants. The Chinese-made vaccines do not require cold storage infrastructure for distribution. Therefore, they are particularly appealing to many tropical and sub-tropical low- and middle-income countries in Southeast Asia, Africa, and Latin America, which are daunted by the challenges of importing and transporting the mRNA vaccines of Pfizer and Moderna that require sub-zero degree facilities.

Of special interest for Chinese vaccine diplomacy during the COVID-19 outbreak was Southeast Asia, a region of great cultural, economic, and strategic importance for China (Stuart-Fox 2004; Peng 2021). Two major countries in the region are the Philippines and Vietnam. As members of the Association of Southeast Asian Nations (ASEAN), both countries are key trading partners of China in the region. Nevertheless, they have been the most vocal in expressing their concerns over growing Chinese assertiveness in the South China Sea (SCS), an area with strategic and resource-rich commons. This area is believed to possess large undeveloped undersea oil and gas reserves around the Spratly and Paracel Islands needed by energy-importing countries in the region, and its marine life supplies ten percent of the world’s annual fishing catch.

Table 1 An overview of the geographical distribution of Chinese COVID-19 vaccines as of 28 December 2022.

Region	Number of Chinese vaccines delivered
Southeast Asia (ASEAN countries)	536.1 million
Other countries in Asia and the Pacific	373.7 million
Latin America	296.8 million
Africa	153.2 million
Europe	59.5 million

Only direct bilateral contributions from China are included (Bridge Beijing 2023).

Table 2 An overview of the distribution of Chinese COVID-19 vaccines to ASEAN countries as of 28 December 2022.

ASEAN member state	Number of Chinese vaccines delivered
Indonesia	268.3 million
Philippines	60.0 million
Myanmar	56.3 million
Cambodia	42.1 million
Vietnam	41.5 million
Thailand	29.9 million
Malaysia	28.4 million
Laos	9.1 million
Singapore	0.3 million
Brunei	0.2 million

Only direct bilateral contributions from China are included (Bridge Beijing 2023).

China, Taiwan, Vietnam, the Philippines, Malaysia, and Brunei are the six significant claimants of the SCS. In essence, the territorial and maritime claims are regulated by the UN Convention of the Law of the Sea (UNCLOS) in the form of an Exclusive Economic Zone (EEZ). This area extends from the coast or in federal systems from the seaward boundaries of the constituent states (i.e. 3 to 12 nautical miles, in most cases, to 200 nautical miles off the coast). The Chinese claim nonetheless deviates from international law; China claims sovereignty over 90% of the SCS with a self-recognised 'nine-dash line.' China's unilateral move has thus overlapped with other claimants' requests.

Renouncing the claims in the SCS is close to impossible for China, the Philippines, and Vietnam, since all three countries consider their claimed areas as vital elements of national security, territorial integrity, essential trade channels, traditional fishing grounds, and a potential source of indigenous offshore energy resources within the region. Because of their power asymmetry vis-à-vis China, the Philippines and Vietnam have been using diplomatic outreach to cultivate as many supporters as possible. While Manila has been upgrading its defence and maritime law enforcement with the help of the United States and Japan, Hanoi is relying on its traditional partners, namely India and Russia, to defend its claims in the SCS (Pitlo and Karambelkar, 2013). China has meanwhile sought to strengthen its claim by increasing its military presence and constructing artificial islands in the SCS. At the same time, Beijing has also attempted to 'soften' others' dissent through diplomatic channels, such as vaccine provision to the SCS claimants during the COVID-19 outbreak. Table 2 indicates the open-source data on Chinese vaccine distribution among ASEAN member states, including the Philippines and Vietnam.

China was the first country to deliver vaccines to COVID-19-hard-hit Southeast Asia, having donated more than 7 million doses across nine ASEAN countries by July 2021. As of December 2022, the Philippines had received 60 million COVID-19 vaccines from China, making it the second largest receiver of Chinese vaccines regionally, and the fifth largest globally. Of these 60 million vaccines, 55 million were sold and 5 million were donated by China (Bridge Beijing 2023). In June 2020, China promised the Philippines early priority access to its vaccines (Massola 2020; Rabena 2021, p. 40), and indeed, while some other countries got earlier access, the first Chinese COVID-19 vaccines arrived on Philippine soil in March 2021 (Bridge Beijing 2023). In the case of Vietnam, as of December 2022, China had delivered 41.5 million COVID-19 vaccines, of which 36.2 million were sold and 5.3 million were donated, making Vietnam the world's tenth largest and region's fifth largest recipient of Chinese vaccines (Bridge Beijing 2023). Although China had promised Vietnam priority

access to its COVID-19 vaccines in August 2020 (Economist Intelligence Unit 2020), Vietnam was the last ASEAN country to procure Chinese vaccines (Demongeot 2021; Focus: S.E. Asia Struggles 2021), approving the Sinopharm vaccine for emergency use in June 2021 (Nguyen 2022).

The COVID-19 pandemic has been described as a watershed event that could reset the global order (Dunford and Qi 2020). The confluence of the COVID-19 pandemic with its opportunities for countries to use vaccine diplomacy as a soft power tool to influence other countries on the one hand, and the increasing role of China on the world stage on the other hand, raises the question: how effective was Chinese vaccine diplomacy during COVID-19 in the Philippines and Vietnam from a soft power perspective? Understanding the effectiveness of Chinese vaccine diplomacy in the selected countries is highly relevant for at least two reasons. Firstly, the overlapping claims on islands and maritime borders between China and the other claimants in the SCS have been viewed as a potential flashpoint for regional military conflict. Bilateral and multilateral efforts to resolve the situation have nevertheless all failed. The SCS has periodically flared up for the last twenty years as regional governance and security challenges. As such, vaccine diplomacy could be a solution to de-escalate potential military conflicts between China and other claimants, especially the Philippines and Vietnam. Secondly, Chinese foreign policy has attached great importance to the 'peripheral diplomacy' strategy, with the explicit goal of winning over China's immediate neighbours, especially countries in Southeast Asia. It is because a stable and China-friendly peripheral environment is vital to Chinese long-term development and attainment of the 'great rejuvenation of the Chinese nation.' The current study is thus crucial to understand whether Chinese vaccine diplomacy could win the hearts and minds of people in the Philippines and Vietnam.

Literature review

The existing literature shows a mixed account of the effect of Chinese vaccine diplomacy in Southeast Asia during COVID-19, with most of the literature focusing on the region as a whole. While most literature does not explicitly investigate soft power outcomes, they often contain statements on China's success or failure in using vaccine diplomacy and they may focus on one or more soft power indicators implicitly. Chinese vaccine diplomacy in Southeast Asia is said to have reshaped China's relations with the region and to have played out differently in different countries (Peng 2021, pp. v–vi), to have been met with a mixed reception because of concerns about China's expansionist intent (Satoh 2022, p. 32), to have not yet generated strategic trust in the region (Zaini 2021a), and to have improved China's image in the region (Hunt 2021).

Next to literature exploring the effect of Chinese vaccine diplomacy on the region, there is a limited number of existing single case studies on specific Southeast Asian countries. For example, Rakhmat and Pashya (2021) conducted a case study to analyse the political and economic aspects of Chinese-Indonesian relations, arguing that Chinese vaccine diplomacy helped to improve the bilateral relationship, and Chang (2021) showed that while China's Sinovac vaccine was downgraded to only a secondary role in the Malaysian national immunisation programme, Malaysia was still dependent on Chinese assistance.

There are also a few case studies on Chinese vaccine diplomacy in the two key claimant states in the SCS: the Philippines and Vietnam. Rabena (2021) claims that Chinese vaccine diplomacy had no significant positive effects on the bilateral relations between Beijing and Manila during the pandemic, and Nguyen (2022) states that Chinese vaccine diplomacy could not mitigate

Table 3 Analytical framework: The four soft power indicators.

Soft power indicators	Explanation/operationalisation
Public opinion	The public in the selected countries views China more positively. It is measured by, for example, opinion polls asking about China's image or the public's view of China.
Foreign policy	The change of foreign policy stance in the selected countries in favour of China. It is measured by, for example, Vietnam accepting China's claims in the SCS or the Philippines voting with China in the United Nations.
Attractiveness	The public in the selected countries is more attracted to China. It is measured by, for example, the number of Vietnamese students wanting to study in China or the number of Filipinos wanting to go to China for holiday.
Business and trade	An increase in business and trade between the selected countries and China, with positive effects for China. It is measured by, for example, infrastructure deals or increase in Chinese exports to the target countries.

Vietnamese distrust of China. To the best of our knowledge, no multiple case studies to date have systematically analysed the effects of Chinese vaccine diplomacy on the most vocal claimant states in the SCS—the Philippines and Vietnam—from a soft power perspective.

Methods

Study design. The research design chosen for this research is a multiple case study. A case study describes and analyses a phenomenon in a particular context (Creswell et al. 2007; Starman 2013). It offers an in-depth contextual understanding of a bounded system (case). A case study is particularly relevant to explore causal relationships, and it has high conceptual validity due to the holistic and detailed analysis of the phenomenon (Starman, 2013; Mfinanga et al. 2019). The advantage of a multiple case study over a single case study is that the former illustrates different perspectives on the issue, giving an overall better understanding of the phenomenon (Creswell et al. 2007). The cases are not compared; instead, common themes that transcend the cases are sought.

The countries chosen as cases for the current multiple-case study are the Philippines and Vietnam. As described above, the two countries are similar in various aspects, including their membership of ASEAN and their proximity to and importance for China. Furthermore, among the claimants and littoral states in the SCS dispute, the Philippines and Vietnam have been the most vocal in expressing their concerns over growing Chinese assertiveness in the SCS, making the selected countries interesting and suitable for analysing Chinese vaccine diplomacy in the region from a soft power perspective.

Analytical framework. Vaccine diplomacy is a soft power tool (Gauttam et al. 2020). As defined by Nye (2008, p. 94), soft power is the 'ability to affect others to obtain the outcomes one wants through attraction rather than coercion'. Measuring the effects of soft power is challenging (Yun 2018; Seymour 2020), since the relevant effects are indirect and often take longer to realise than those of hard power (Fan 2008). That said, several indicators have been developed to measure soft power. For instance, the Global Soft Power Index published by Brand Finance (2022) incorporates seven indicators: business and trade, governance, international relations, culture and heritage, media and communication, education and science, and people and values. In the context of Chinese vaccine diplomacy in Southeast Asia and especially among the SCS claimant states, some indicators, such as international relations and business and trade, seem more relevant than others. Based on the possibility of connecting the indicators to China's motivations, as well as the availability of data on the several possible indicators in the studied literature, four indicators were chosen for this study: public opinion, foreign policy, attractiveness, and business and trade (see Table 3).

The first indicator is public opinion: the foreign public's opinion of a country is a well-established and often-used indicator to measure that country's soft power (Brand Finance 2022; Nye 2004, p. 18; Ji 2017, p. 83; Yeh et al. 2021). Public opinion is related to foreign policy: how the domestic public feels about a foreign country can shape the foreign policy stance of a country towards that foreign country (Goldsmith and Horiuchi 2012). Therefore, changed foreign policy stances of a country targeted by soft power efforts can be used as a second indicator for the effectiveness of the soft power of the country exercising soft power (Brand Finance 2022; Singh and MacDonald 2017). The third indicator used to measure soft power is attractiveness, such as the number of incoming international students or tourists in the country (Nye 2008; Singh and MacDonald 2017; Wu 2019; Kahraman 2017). Finally, the fourth indicator is business and trade: soft power dynamics of attraction are intertwined with economic gains (Carminati 2022), a country's exports are higher when the importer perceives that country to have a more positive influence in the world (Rose 2015), and countries with a better nation brand enjoy a competitive advantage (Anholt 2007). In this study, these four indicators are employed to determine the effectiveness of Chinese vaccine diplomacy during COVID-19 in the Philippines and Vietnam.

Data collection. For data collection, a literature search was conducted. Both academic literature and grey literature in the form of newspaper articles were included, because newspaper articles are increasingly recognised as an important part of the academic publishing landscape, especially in social sciences, and can make important contributions (Meyer 2018; Paez 2017). Figure 1 illustrates a detailed overview of the data collection process.

The following databases were used to search for academic literature: Google Scholar, Web of Science, PubMed, Scopus, JSTOR, and ScienceDirect. The Nexis Uni database was used to identify mainstream newspaper articles. The following search terms were used for both databases: 'China', 'COVID-19', 'vaccine', and 'diplomacy', combined with 'Philippines' or 'Vietnam'. The literature search was conducted between 26 May and 13 June 2022. Later publications were not included. After removing duplicates, literature was excluded when the full text was not accessible, when the language was not English, and when the quality was not sufficient according to the PRISMA 2020 checklist (Page et al. 2021). The remaining articles were screened, and articles that were irrelevant to the research question were excluded. In total, 63 articles (28 academic articles and 35 newspaper articles) were incorporated in this study. Next to these academic and mainstream newspaper articles, five supplementary sources were added. These included four surveys by the ISEAS-Yusuf Ishak Institute (Tang et al. 2019; Tang et al. 2020; Seah et al. 2021; Seah et al. 2022) and one book chapter found through cross-referencing (Nguyen and Tran 2021).

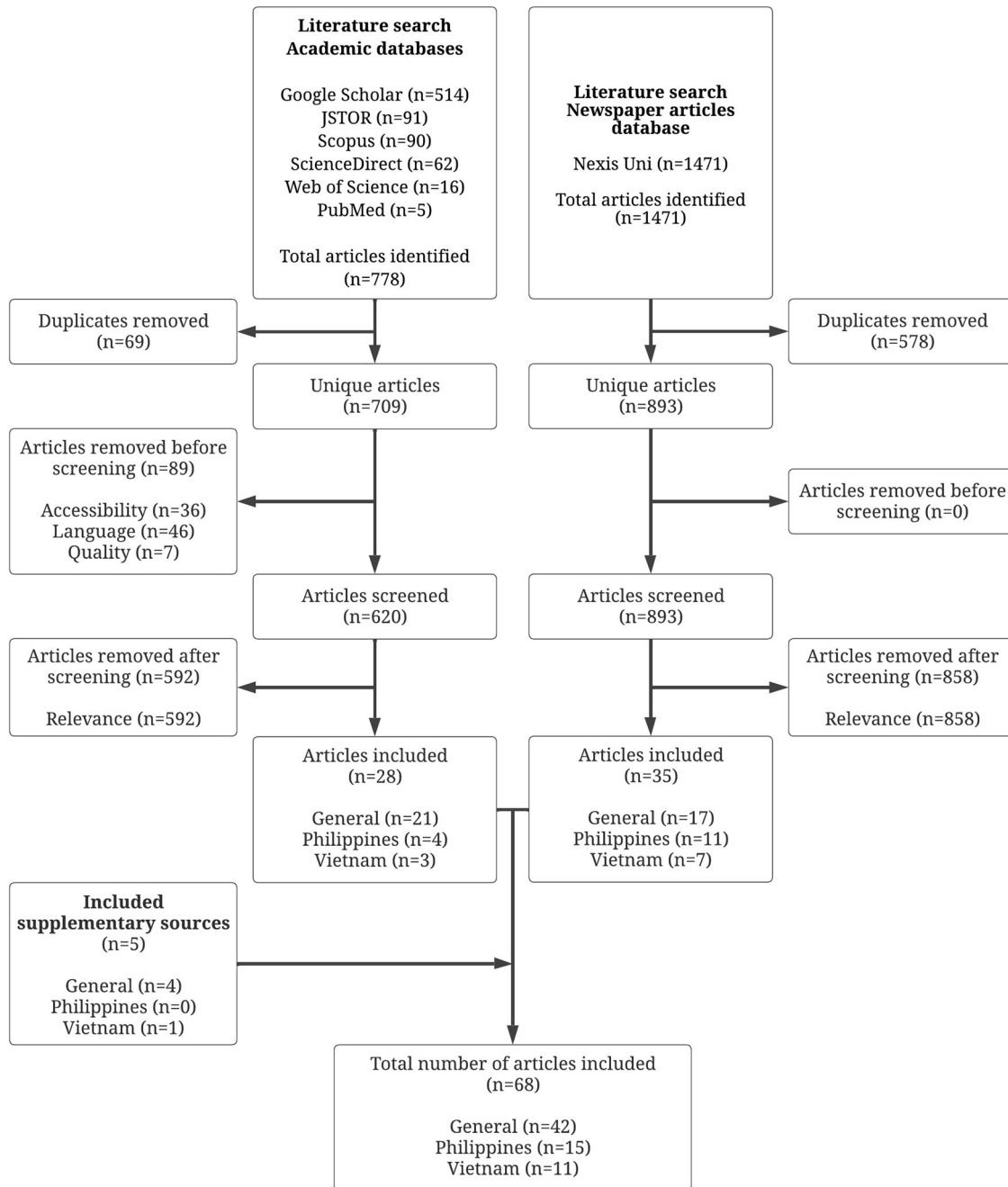


Fig. 1 Flowchart data collection. Short description of what is shown: a detailed overview of the data collection process.

Data analysis. Data analysis was conducted through a thematic analysis, which is a rigorous and methodical method for identifying, analysing, and reporting themes within data, yielding meaningful and valuable results (Braun and Clarke 2006; Nowell et al. 2017). This study conducted a deductive thematic analysis (Fereday and Muir-Cochrane 2006), using the four indicators of soft power to analyse the data.

Results
The Philippines

Public opinion. Before COVID-19, China was generally unpopular and distrusted in the Philippines (Rabena 2021, p. 40; Yeo and Gloria 2022). In a July 2020 Social Weather Stations (SWS) survey, 58% of surveyed adult Filipinos expressed little trust in China, which was the worst score since December 2015 (Cook

2021). While Philippine President Rodrigo Duterte (whose term ended in June 2022) was generally considered as more pro-China than his predecessor (Grossman 2021), the Philippine public did not follow suit. The most important reason for this anti-China sentiment is the territorial dispute between China and the Philippines in the SCS (or the West Philippine Sea, as it is known in the Philippines) (Siregar and Napitupulu 2020).

This existing distrust of China among Filipinos was reflected in their reactions to Chinese vaccine diplomacy. There was relatively weak public support for Chinese vaccines (Amador et al. 2021), and the vaccine rollout in the Philippines was ‘met with wariness around China’s influence on the current administration’ (Amul et al. 2022, p. 99). A December 2020 YouGov poll showed that less than 20% of Filipinos expressed confidence in Chinese vaccines (Lee 2021). In an April 2021 SWS survey, only 19% chose China as their preferred source of vaccines (compared with

63% choosing the United States) (Pascual 2021b). In March 2021, the Philippine General Hospital's Physicians Association announced that 95% of hospital staff disapproved of receiving the Sinovac vaccine (Zhang and Burton 2022). According to the 2022 ISEAS Southeast Asia expert survey, only 9.0% of surveyed Filipino experts said they thought the Sinopharm and Sinovac vaccines were the most trustworthy, compared to 54.5% for the Pfizer and Moderna vaccines (Seah et al. 2022).

Several problems further aggravated the image of Chinese vaccines in the Philippines. There were allegations of corruption in the vaccine acquisition process (Heydarian 2021b). Moreover, it was revealed that the Philippines had to pay more for Chinese vaccines than other countries (Pascual 2021a); allegedly, the Philippines had to pay around 14 USD per dose, while other countries, such as Thailand, had to pay only 5 USD per dose (Heydarian 2021b). Furthermore, some vaccine deliveries were delayed because of capacity problems in the production process (Heydarian 2021c). Additionally, the authorisation process of the Sinovac and Sinopharm vaccines led to controversies. In February 2021, the Philippine Food and Drug Administration (FDA) authorised emergency use of the Sinovac vaccine but remarked they did not deem the vaccine suitable for medical frontline workers (Hodge 2021). In May 2021, Duterte was publicly vaccinated with the Sinopharm vaccine while this vaccine was not yet authorised by the Philippine FDA, leading to an apology by Duterte and the return of 1000 Sinopharm vaccines to China (Grosman, 2021; Ramani 2021). These problems, combined with the common distrust of Chinese vaccines, led in many cases to Filipinos rejecting Chinese vaccines when offered. These incidents prompted the Philippine government in May 2021 to make it no longer possible for the public to choose the brand of vaccine they would get (Philippine Citizens Rejecting, 2021).

There is consensus in the existing literature that Chinese vaccine diplomacy had no positive effect on the Philippine public opinion of China. According to Cook (2021, p. 250), 'China's pandemic diplomacy did nothing to reduce the high level of distrust and anger felt by Filipinos towards it', while Rabena (2021, pp. 40–41) states that the Philippine public remained sceptical of the Chinese efforts and that COVID-19 even exacerbated unfavourable views of China. China's image worsened when Indonesia and some sub-Saharan African countries received Chinese vaccines before the Philippines did, giving the impression to the Philippine public that the Philippines and the health of its population were not of great importance to China (Heydarian 2021b). Yeo and Gloria (2022) note that China's vaccine diplomacy was ineffective in winning Filipinos' hearts and minds. One reason is that China's negatively perceived hard power actions in the SCS overshadowed China's soft power actions during vaccine diplomacy, reinforcing China as an aggressor instead of creating a more positive image. The justification mentioned above is in line with findings by Zaini (2021a), who states that Beijing has failed to calibrate its exercise of hard power to avoid undermining its soft power efforts.

The same pattern emerges from the annual ISEAS Southeast Asia expert survey results. On a positive note for China, the survey's results show that China was seen by Filipino respondents as the country that provided the most help during COVID-19, closely followed by the United States (20.9% and 46.5% of respondents chose China in 2021 and 2022 respectively, compared with 16.4 and 40.8% for the United States). Furthermore, the percentage of Filipinos surveyed in 2022 that viewed China's economic influence on their country as worrying was high but decreasing compared to earlier years (82.1% in 2020; 77.5% in 2021; 76.4% in 2022). However, the number of respondents that worried about China's political and strategic influence on the Philippines was even higher, and no clear

decreasing trends could be seen (87.8% in 2020; 95.0% in 2021; 88.5% in 2022). Only 1.5% of respondents said they viewed China as a benign and benevolent power in 2022, reflecting China's negative image in the Philippines. Matching with the above-described findings regarding China's hard power tactics, 'China's strong-arm tactics in the South China Sea and the Mekong' was chosen as the most worrying concern by Filipino respondents in 2020 and 2022 (Tang et al. 2020; Seah et al. 2021; Seah et al. 2022).

Foreign policy. Some diplomats from the Philippines anonymously claimed that vaccine diplomacy was an effort by China to take over the SCS (Siregar and Napitupulu 2020), and that they had been pressured to tone down their public criticism of Chinese activities in the SCS (Wu and Gelineau 2021). There have been several statements by Philippine government officials regarding allegations that Chinese vaccine deals came with strings attached. Some of the comments during the earlier phases of the pandemic can be characterised as defending China and adhering to China's objectives in the SCS. For example, in July 2020, Duterte declared that China was already 'in possession' of the disputed SCS, that he had no say over that, and that he would not seek conflict with China (Tan and Maulia 2020; Yang 2020). In the same month, Duterte said, 'there is no such thing as free lunch,' presumably hinting at giving China something in return for its vaccines (Siregar and Napitupulu 2020, p. 200). In January 2021, Secretary of Foreign Affairs Teodoro Locsin Jr. defended China by telling the press, 'China is not pushing its vaccines as part of its diplomacy as its lying enemies insist' (Pascual 2021a; Lee-Brago 2021). During a Senate hearing that same month, 'vaccine czar' and chief implementer of the national COVID-19 taskforce Carlito Galvez Jr. said that 'our differences in the West Philippine Sea should be set aside because this is a global pandemic' (Yap 2021). Later public comments on the matter appeared to have a changing view. After Senator Risa Hontiveros criticised Galvez, he revised his earlier statement by saying the Philippine government 'will not compromise its stake in the West Philippine Sea' (Torregoza 2021a; Torregoza 2021b). Apparently, Duterte himself also changed his stance. In April 2021, he stated that he did not tolerate any violation of the sovereignty of Philippine maritime territory (Rusli 2021). Later, in May 2021, Duterte said, 'it does not mean that I will accept the vaccines, then say I will forget the claim to the [South China Sea]' (Castaneda 2021), and in August 2021, he repeated that China's vaccine donations were not part of any quid pro quo between Beijing and Manila (Grossman 2021).

All the above-described comments put aside, the real question is if Chinese vaccine diplomacy did or did not change the Philippines' stance on the SCS dispute. Benyera (2021, p. 199) claims China used vaccine diplomacy to 'unlock the frosted relations' with the Philippines but does not give concrete results of these supposedly improved bilateral relations. According to Capri (2021), 'the Duterte regime had essentially agreed to forfeit its challenge to Beijing's power play' in the SCS because of the dependence on China's vaccines, but Cook (2021, p. 250) states 'there was no major change in Philippine policy on the West Philippine Sea' during COVID-19 and Grossman (2021) claims pre-existing high Philippine distrust of China was 'hindering Beijing's success in leveraging vaccine diplomacy for geostrategic gains.' The view of the latter two seems to be supported by most literature. While the Philippine public was being vaccinated with Chinese vaccines, the Philippines kept on resisting and publicly condemning Chinese military activities in its waters (Rabena 2021, p. 42; Rusli 2021) and even vigorously expanded the number of military patrols to challenge Chinese vessels in disputed SCS areas such as Scarborough Shoal (Sutter and Huang 2021). In April 2021, the Philippines and the United States held a joint military exercise in the SCS (Rusli 2021).

In contrast to closer alignment with China, the Philippines moved closer to the United States in 2021. In August 2021, Duterte publicly thanked the United States in a televised address for donating Johnson & Johnson and Moderna vaccines to the country (Grossman 2021). Furthermore, he publicly announced during that address that because of the American vaccine donations, he would restore the Visiting Forces Agreement, which is an important part of the Philippine-United States military alliance (Sutter and Huang 2021; Wee and Myers 2021). This example can be clearly characterised as a win for American vaccine diplomacy in the Philippines (Heydarian 2021a).

Attractiveness. China's attractiveness to Filipinos seems to have remained very low. The yearly ISEAS Southeast Asia expert survey found that in 2022, only 1.0% of surveyed Filipinos would choose China as their first choice to go to university when offered a scholarship (compared with 3.6% in 2019, 1.5% in 2020, and 0.0% in 2021). Only 0.5% chose China as their favourite holiday destination (compared with 1.8% in 2019, 0.7% in 2020, and 0.0% in 2021) (Tang et al. 2019; Tang et al. 2020; Seah et al. 2021; Seah et al. 2022).

Business and trade. China is one of the top three trading partners for the Philippines. A significant part consists of the banana export to China, which was heavily impacted by the COVID-19 crisis (Rabena 2021, p. 37; Castaneda 2021). Furthermore, China has many BRI investments in the country, mainly in infrastructure and tourism projects. Many of these projects were nevertheless delayed due to Covid-19 (Rabena 2021, p. 37).

Despite these setbacks because of the pandemic, Chinese investments in the Philippines increased by 82.5% in the first five months of 2020 (Rabena 2021, p. 38). Furthermore, Chinese Minister of Foreign Affairs Wang Yi, during his visit to the Philippines in January 2021, promised the Philippines a batch of free vaccine deliveries, coupled with enhanced economic aid to the Philippines (Hung, 2021): \$1.3 billion in loans next to an additional \$77 million in grants for infrastructure projects (Liow 2021; Poling and Hudes 2021).

Vietnam

Public opinion. Anti-China sentiment is deeply rooted in the Vietnamese population (Dien 2021). This can be traced back to at least the Sino-Vietnamese war in 1979 (Onishi 2021) and has been fuelled in recent times by ongoing territorial disputes in the SCS and China's actions in the Mekong River affecting Vietnam's water supply downstream (Nguyen 2021). Among other things, this anti-China sentiment can be seen in the general disapproval of products made in China (Hoang 2021; Dien 2021).

Due to the prevailing anti-China sentiment in Vietnam, there was also a high degree of anti-Chinese vaccines sentiment amid the COVID-19 outbreak (Nguyen 2022). The negative attitudes towards Chinese vaccines could be seen in public reactions on mainstream and social media. Hoang (2021) analysed the comments written under articles covering the Vietnamese approval of the Sinopharm vaccine published by two mainstream online Vietnamese newspapers in June 2021. The findings showed that very few comments expressed favour to the Sinopharm vaccine and that most people said they would rather wait longer and pay extra to get a Pfizer or Moderna vaccine instead. Respondents mentioned concerns about safety and efficacy, but most rejected the vaccine based on 'visceral anti-China attitudes or an entrenched distrust of made-in-China products' (Hoang 2021). The attitudes of the Vietnamese people towards Chinese vaccines expressed on social media were consistent with the survey findings. According to the 2022 ISEAS Southeast Asia

expert survey, only 4.2% of surveyed Vietnamese experts chose Sinopharm/Sinovac when asked which COVID-19 vaccine they trusted the most, compared to 55.6% for Pfizer/Moderna (Seah et al. 2022). Overall, a majority of Vietnamese indeed refused to take Chinese vaccines (Jennings 2021), prompting the Vietnamese government to start a propaganda campaign using texts like: 'the best vaccine is the first one: get vaccinated when it's your turn' (Nguyen 2022, p. 14).

Most authors agree that Chinese vaccine diplomacy failed in Vietnam because of the distrust of China and Chinese vaccines (Nguyen 2021; Nguyen 2022). Vietnamese officials such as General Secretary Nguyen Phu Trong lavishly uttered Vietnam's gratitude to China for its vaccine deliveries publicly celebrating China's and Vietnam's joint 'socialist road' and 'strategic partnership of comrades and brothers' (Onishi 2021). Strong anti-China sentiments among the Vietnamese population nevertheless showed no signs of weakening despite Chinese vaccine diplomacy (Vietnam Remains Outlier 2021). China's image was further plummeted when the first Chinese vaccine deliveries to Vietnam were meant exclusively for Chinese nationals living in Vietnam, leading to the Vietnamese public viewing China's donation not as a generosity but as a self-interested move (Hoang 2021). Since the public was generally more concerned about increasing Chinese aggressiveness in the SCS, Chinese vaccine diplomacy did not substantially generate more trust in China among the Vietnamese public (Nguyen 2022; Zaini 2021a).

These conclusions were also prevailing in the annual ISEAS Southeast Asia expert survey. Most Vietnamese respondents chose the United States and not China as the country that provided the most help during COVID-19 (29.7% in 2021 and 52.8% in 2022 chose the United States, compared with just 13.7% in 2021 and 16.0% in 2022 who chose China). According to the survey, China's influence on Vietnam was worrying to a large majority of respondents. 'China's strong-arm tactics in the SCS and the Mekong' was chosen as the most worrying concern in both 2021 and 2022. China's economic influence was viewed as worrying by 72.8% in 2022 (compared with 80.2% in 2020 and 90.4% in 2021), and the percentage that was worried about China's political and strategic influence was even higher: 80.3% in 2022 (compared with 95.3% in 2020 and 97.7% in 2021). These high scores reflect the anti-China sentiment in Vietnam, as described above. However, it seems these scores decreased substantially in 2022 as compared to 2021. Still, only 6.9% of Vietnamese respondents called China a benign and benevolent power in 2022 (Tang et al. 2020; Seah et al. 2021; Seah et al. 2022).

Foreign policy. Vietnam has been described as the 'gateway to Southeast Asia' and as being of critical strategic importance for major powers (Tran et al. 2021, p. 37). In light of the struggle for geopolitical dominance between the United States and China, Vietnam typically uses 'check and balance' diplomacy to avoid taking sides (Tran et al. 2021, p. 39).

As previously mentioned, sovereignty disagreements in the SCS are the biggest problem in Sino-Vietnamese bilateral relations (Hoang 2021). Vietnamese leaders raised concerns over the transparency and legitimacy of Chinese vaccine diplomacy in light of the SCS dispute and remained sceptical of Chinese intentions (Chheang 2021). Vietnam accused China of taking advantage of the pandemic to increase its presence in the SCS (Nguyen and Tran 2021, p. 11). While China could reap strategic goals by preventing Vietnam from further leaning towards the United States, there is no clear evidence that Vietnam changed its foreign policy stance on the SCS dispute (Nguyen 2022). For example, in August 2021, the Vietnamese Ministry of Foreign Affairs officially condemned a Chinese military drill near the disputed Paracel Islands in the SCS (China's Military Drill, 2021).

In contrast to the unchanged Vietnamese stance towards China, the United States was, in fact, able to get a win out of their vaccine diplomacy in Vietnam. In July 2021, Vietnam and the United States reached a new agreement on monetary policy, after which the United States increased its vaccine donations. Additionally, in September 2021, Vietnam implicitly endorsed the new security pact AUKAS between the United States, the United Kingdom, and Australia, in contrast to countries like Indonesia and Malaysia that were openly opposed to it (Nguyen 2022).

Attractiveness. China’s attractiveness for the Vietnamese public has improved in 2022, according to the yearly ISEAS Southeast Asia expert survey. The percentage of Vietnamese respondents that said they would pick China as their first choice for university when offered a scholarship has increased substantially: 11.1% chose China in 2022, compared with 0.0% in 2019, 0.7% in 2020, and 1.1% in 2021. The same holds for Vietnamese’ favourite holiday destination: in 2022, 10.4% chose China, compared with 5.6% in 2019, 4.6% in 2020, and 5.1% in 2021 (Tang et al. 2019; Tang et al. 2020; Seah et al. 2021; Seah et al. 2022).

Business and trade. China is one of Vietnam’s most important trading partners (Nguyen and Tran 2021, p. 117), but their trade relationship has been complicated in recent years because of some economic disputes (Chheang 2021). Furthermore, Vietnam has been frosty to China’s BRI intentions in the region, showing a degree of resistance to Chinese investments in the country (Demongeot 2021; Chheang 2021).

In contrast to the Philippines, Vietnam was not included on the itinerary of Chinese Minister of Foreign Affairs Wang Yi’s Southeast Asia trip in early January 2021 (Center for Strategic and International Studies 2021) because Vietnam was at first not a participant in Chinese vaccine diplomacy. There are no concrete examples in the studied literature of new infrastructure projects or cooperation agreements during the period of Chinese vaccine diplomacy.

Discussion

Based on the analysis (summarised in Table 4), Chinese vaccine diplomacy in the Philippines was unsuccessful. Chinese vaccine diplomacy was complicated by several problems and controversies and failed to improve China’s image in the Philippines. The distrust of China in the Philippines remained very high. Some early Philippine government statements hinted at giving in to China concerning the SCS dispute. However, later it became clear that the Philippines was unwilling to change its foreign policies in favour of China because of vaccine diplomacy. In contrast, the United States was more successful in increasing (or restoring) its influence in the Philippines. China did get some more infrastructure projects for Chinese businesses, but there is no clear evidence of a significant win for Chinese vaccine diplomacy as measured in business and trade. Finally, China’s attractiveness to Filipinos remained extremely low.

The analysis shows that Chinese vaccine diplomacy in Vietnam had mixed effects but was mainly unsuccessful. Vietnam was a relative latecomer in acquiring Chinese vaccines. The prevailing anti-China sentiment and distrust in Chinese vaccines among the Vietnamese public made it difficult for China to improve its image with vaccine diplomacy. The only clear positive effect for China was the apparent increase in Chinese attractiveness to the Vietnamese public. However, when put in perspective, China’s attractiveness in absolute terms was still relatively low, lagging behind other countries’ attractiveness, such as Australia, the United Kingdom, the United States, and European Union member states (Seah et al. 2022). While the very high levels of distrust and worry about China decreased somewhat, they remained prevalent among a vast majority of the Vietnamese population. Vietnam did not change its foreign policies on issues such as the SCS conflict in favour of China, and there is no evidence pointing to a surge in bilateral business and trade in the context of Chinese vaccine diplomacy.

Overall, the effectiveness of Chinese vaccine diplomacy during COVID-19 in the Philippines and Vietnam was thus not very successful from a soft power perspective. While in the areas of attractiveness and business and trade, Chinese vaccine diplomacy had mixed to at best slightly positive results, no evident success for Chinese vaccine diplomacy could be seen in the areas of public opinion and foreign policy.

On the one hand, some differences could be observed in the two country case studies. While China’s attractiveness increased during Chinese vaccine diplomacy in Vietnam, it remained the same in the Philippines. A possible explanation for why China’s attractiveness did not increase in the Philippines is that Chinese attractiveness in the Philippines was already lower than that in Vietnam and that the Philippine public was arguably already the most anti-China prior to the COVID-19 pandemic. Additionally, Chinese success in business and trade was most visible in the Philippines, while no apparent increase in business and trade was seen in Vietnam.

On the other hand, the countries showed a similar pattern regarding the public opinion and foreign policy indicators. While China’s scores on public opinion may have improved somewhat or remained the same, in both countries, there still was a large majority distrusting China and worried about China’s influence in the region. China failed to change this with its vaccine diplomacy. Concerning the effects of Chinese vaccine diplomacy on the Southeast Asian countries’ foreign policy, no success for China could be seen. At the early stages of the pandemic, during the scramble for vaccines, it looked like China could expand its geopolitical influence and advance its agenda in the SCS conflict. However, when the Philippines and Vietnam had secured their vaccine supplies from alternative sources later on, both countries continued to resist and condemn Chinese aggression in the SCS, and even became more closely aligned with the United States, which can be seen as a defeat for China.

Several factors contributed to the failure of Chinese vaccine diplomacy during COVID-19 in the Philippines and Vietnam. One important factor was pre-existing anti-China sentiment in both countries. This sentiment was worsened during the pandemic by problems concerning China’s vaccine delivery and pricing. In the case of the Philippines, the population was angry at the higher price the country had to pay as compared to neighbouring countries and because of allegations of political corruption, and in the case of Vietnam, China did not deliver as many donations as was promised (i.e., it delivered only 5.3 out of 10.5 million vaccines) (Bridge Beijing 2023). The fact that China was allegedly not always transparent in its communication of data and figures concerning vaccines further complicated the trust in and reception of Chinese vaccine diplomacy (Tanveer et al. 2022).

Table 4 Effectiveness of Chinese vaccine diplomacy in the Philippines and Vietnam.

	The Philippines	Vietnam
Public opinion	-	-
Foreign policy	-	-
Attractiveness	-	+
Business and trade	±	-

Another key factor why China was not able to achieve its goals with vaccine diplomacy was that Chinese COVID-19 vaccines were less effective than other vaccines. When alternative COVID-19 vaccines (such as Pfizer) became available, the Philippines and Vietnam quickly acquired those, which shows they had a very pragmatic approach to acquiring vaccines, minimising Chinese success (Wee and Myers 2021). These problems are crucial for China and other countries to consider when conducting health diplomacy in the future.

The other critical reason why Chinese vaccine diplomacy during COVID-19 in the Philippines and Vietnam was not successful is that China's soft power efforts could not overcome broader concerns of the two countries related to hard power, such as Chinese geopolitical and economic influence, and China's aggression in the SCS. There are limitations to what soft power and hard power can achieve on their own. Therefore, in order to produce effective foreign policies, Nye (2009, p. 160) suggests ambitious countries should develop smart power (i.e., an integrated strategy that combines hard and soft power). Concerning Chinese vaccine diplomacy in the Philippines and Vietnam, it is concluded Beijing lacked 'contextual intelligence' (i.e., the ability to realise changing environments, capitalise on trends, and utilise the flow of events to implement strategies) (Nye 2009, p. 161). This means that while China gained the upper hand in vaccine diplomacy in the early stage of the pandemic, the Chinese authorities could not figure out alternative soft power strategies once vaccines were made available by other vaccine-manufacturing countries. Meanwhile, they continued to exert hard power tactics, complicating China's soft power efforts. This observation is in line with the argument by Zaini (2021a; 2021b), who stated that Chinese vaccine diplomacy failed because of the imbalance between the use of soft power and hard power tactics. This has implications for Chinese health diplomacy in the future: if Beijing wants to use vaccine diplomacy or other forms of health diplomacy to make the 'China dream' of becoming an influential world power come true, it should calibrate its hard power accordingly.

When reflecting on Chinese vaccine diplomacy in the time of COVID-19 from a global health perspective, there is an apparent tension between the two distinct goals of vaccine diplomacy: achieving global health goals and pursuing foreign policy objectives. Initially, Chinese President Xi raised high expectations in the global health community by calling the Chinese vaccines 'global public goods.' However, instead of donating vaccines to all countries in need, China mostly sold vaccines to strategically chosen countries. For many, this made Xi's claim highly doubtful, raising scepticism about China's true intentions (Niquet 2020; Lin et al. 2021). Chinese vaccine diplomacy during COVID-19 was more focused on improving soft power and bilateral relations than on improving global health, solidarity, and equity (Kickbusch et al. 2021).

As described earlier, based on our analysis of Chinese vaccine diplomacy in the Philippines and Vietnam, China mainly failed to achieve its most dominant goal of vaccine diplomacy to improve soft power. However, it can be argued that China did, in fact, still contribute to achieving the other goal of vaccine diplomacy: improving the global health agenda. The fact that Chinese inactivated vaccines do not require cold storage infrastructure for distribution is particularly appealing to many tropical and subtropical low- and middle-income countries such as the Philippines and Vietnam. In addition, Chinese vaccines filled the gap left by Western vaccine-manufacturing countries, considering the billions of doses needed and the shorter delivery time of the Chinese vaccines over the Western ones. Additionally, China had supplied more COVID-19 vaccines to low- and middle-income countries than the WHO co-sponsored COVAX facility as of December 2021.

So, China increased vaccine access for many people in the Philippines and Vietnam, contributing to protection against COVID-19. However, because of the tension between the two distinct goals of vaccine diplomacy, China would likely have been able to improve global health further if it had been less focused on improving soft power. Realistically, foreign policy objectives and geopolitical interests will always play a role in vaccine diplomacy. This dual purpose of global vaccine diplomacy does not have to be a problem per se, but ideally, vaccine diplomacy should be mostly free of geopolitical considerations. Vaccine diplomacy should improve global cooperation to benefit global health (Hotez 2021).

China was no exception in using vaccine diplomacy during the COVID-19 pandemic. The United States, Russia, India, Australia, and the European Union, among others, all provided vaccines to other parts of the world both to improve global health and to increase soft power (British Foreign Policy Group 2021). Vaccine diplomacy during the COVID-19 pandemic has been described as entrenching and perpetuating coloniality because it showcased and increased asymmetrical power relations between countries (Benyera 2021). Countries without vaccine production capacity, often low- and middle-income countries, were dependent on vaccines produced in other countries. These vaccine manufacturing countries either practised vaccine nationalism by acquiring all vaccines for themselves, or conducted vaccine diplomacy by selling vaccines at near unaffordable prices to improve their soft power (Zhou 2022; Pannu and Barry 2021). The world would benefit if the idea were debunked that vaccine manufacturing countries are 'charitably delivering their technology to low- and middle-income countries' (Pannu and Barry, p. e744). If COVID-19 vaccines were truly a global public good, more equitable vaccine access could be achieved and the asymmetrical power relations could be changed (Benyera 2021). More equitable vaccine access would make it easier to achieve world herd immunity, which is significant to curb the pandemic (Irwin 2021).

A COVID-19 vaccine patent waiver would address the asymmetrical power relations while boosting the global vaccine supply, and could thus be a possible way to achieve more equitable vaccine access (Ullah et al. 2021). However, a patent waiver has been opposed by Germany, Switzerland and the United Kingdom (Okereke and Esser 2021), since these vaccine producing countries claimed that the waiver will not immediately solve the problems of the material shortages and lack of manufacturing capability (Gindler and Tran 2022). A way forward can be taken from Hotez's original idea of vaccine diplomacy, focusing on scientific cooperation instead of competition between countries for enhancing soft power (Hotez 2021). If the world would focus more on multilateral cooperation, such as in combining knowledge to develop vaccines, or in cooperating to distribute vaccines through COVAX instead of through bilateral channels, while taking into account equity and focusing on innovation, the world's population could get better and more equitable access to vaccines (Hotez and Narayan 2021). An example of such cooperation is the 'Team Europe Initiative on Manufacturing and Access to Vaccines, Medicines and Health Technologies,' which aims to mobilise 1 billion euros from European Union funds to create an enabling environment for local vaccine manufacturing in Africa, tackling barriers on both supply and demand sides (European Commission 2021). Initiatives like this are of great importance for future pandemics.

Conclusion

This first multiple case study looking at the effect of Chinese vaccine diplomacy during the COVID-19 pandemic on the most vocal SCS claimant states, the Philippines and Vietnam, found

that it was not successful from a soft power perspective. While China's attractiveness and China's business and trade increased somewhat, there was no evident success for China in the areas of public opinion and foreign policy.

The extensive data collection method enabled a complete overview of all available data, while the use of the soft power analytical framework made a systematic approach possible. A limitation of this study is that it only shows a correlation, instead of a causation, between Chinese vaccine diplomacy and the various soft power indicators. Other limitations include language barriers (no articles written in the local languages could be used), the fact that soft power effects can take a long time to become clear (this study was conducted quite shortly after the main period of Chinese vaccine diplomacy), the use of existing literature (the risk of bias was minimised by including articles from various sources and published in various countries and by adhering to the inclusion criteria for quality), and the difficulty to measure the soft power indicator of attractiveness (there had to be relied on the number of people saying they would hypothetically like to travel to or study in China, because no figures of the number of foreign tourists and students in China were found and because there were still travel restrictions in place because of the pandemic).

Future research could take several directions. First, it would be interesting to conduct a longitudinal study regarding the long-term effects of Chinese vaccine diplomacy. Secondly, future research could focus on the effects of Chinese vaccine diplomacy during the COVID-19 pandemic in other countries or regions, comparing the effects between Southeast Asia and those other regions. Thirdly, another area of interest would be to investigate American vaccine diplomacy during the COVID-19 pandemic in the region, enabling comparison with China in the light of the China-United States rivalry for world power. Finally, taking a global health perspective, it would be interesting to investigate how global health diplomacy and vaccine diplomacy could be conducted in future pandemics with a better focus on equitable vaccine access and asymmetrical power relations.

Data availability

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study. The coding matrix used for the data analysis is available on request.

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References

- Amador III J, Baladajay DMN, Carrozza I et al. (2021) An appraisal of Philippines-China security relations under the Duterte administration (2016–2020). Peace Research Institute, Oslo, <https://www.prio.org/publications/12888>. Accessed 28 Nov 2022
- Amul GG, Ang M, Kraybill D et al. (2022) Responses to COVID-19 in Southeast Asia: diverse paths and ongoing challenges. *Asian Econ Policy Rev* 17(1):90–110. <https://doi.org/10.1111/aep.12362>
- Anholt S (2007) Competitive identity: the new brand management for nations, cities and regions. Palgrave Macmillan, Basingstoke
- Benyera E (2021) COVID-19 vaccine nationalism and vaccine diplomacy: a new currency in soft power? *Strateg Rev South Afr* 43(2):193–217. <https://doi.org/10.35293/srsa.v43i2.871>
- Brand Finance (2022) Global soft power index 2022. <https://brandirectory.com/softpower/report>. Accessed 13 Nov 2022
- Braun V, Clarke V (2006) Using thematic analysis in psychology. *Qual Res Psychol* 3(2):77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Bridge Beijing (2023) China COVID-19 vaccine tracker. <https://bridgebeijing.com/our-publications/our-publications-1/china-covid-19-vaccines-tracker/>. Accessed 18 Apr 2023
- British Foreign Policy Group (2021) The rise of vaccine diplomacy. <https://bfpgrp.org.uk/2021/07/the-rise-of-vaccine-diplomacy/>. Accessed 7 Jan 2023
- Capri A (2021) Commentary: How COVID-19 vaccines are being weaponised as countries jostle for influence. CNA. <https://www.channelnewsasia.com/commentary/covid-19-vaccines-weaponised-coronavirus-china-us-russia-199116>. Accessed 28 Nov 2022
- Carminati D (2022) The economics of soft power: reliance on economic resources and instrumentality in economic gains. *Econ Polit Stud* 10(1):19–43. <https://doi.org/10.1080/20954816.2020.1865620>
- Castaneda J (2021) Philippine's economy tanks as the virus rages. *Asia Times*. <https://asiatimes.com/2021/05/philippines-economy-tanks-as-the-virus-rages/>. Accessed 28 Nov 2022
- Center for Strategic and International Studies (2021) The latest on Southeast Asia: 22 January 2021. <https://www.csis.org/blogs/latest-southeast-asia/latest-southeast-asia-january-22-2021>. Accessed 28 Nov 2022
- Chang PTC (2021) China's vaccine diplomacy in Malaysia: problems and prospects. *ISEAS Perspect* 2021:121
- Chen ITY (2022) The crisis of COVID-19 and the political economy of China's vaccine diplomacy. *Foreign Policy Anal* 18(3):orac014. <https://doi.org/10.1093/fpa/orac014>
- Chheang V (2021) COVID-19 pandemic and China's rising soft power in mainland Southeast Asia. *ThinkChina*. <https://www.thinkchina.sg/covid-19-pandemic-and-chinas-rising-soft-power-mainland-southeast-asia>. Accessed 28 Nov 2022
- China's military drill in Hoang Sa violates Vietnam's sovereignty: Spokeswoman (2021) Vietnam News Agency. <https://en.vietnamplus.vn/chinas-military-drill-in-hoang-sa-violates-vietnams-sovereignty/205890.vnp>. Accessed 28 Nov 2022
- Cohen J (2020) China's vaccine gambit. *Science* 370(6522):1263–1267. <https://doi.org/10.1126/science.370.6522.1263>
- Colley T, van Noort C (2022) China's COVID-19 strategic narratives in 2020 and how states responded to them. In: Colley T, van Noort C (eds) *Strategic narratives, ontological security and global policy: responses to China's Belt and Road Initiative*. Palgrave Macmillan, Cham, p 211–264
- Cook M (2021) The Philippines in 2020: continuity despite crisis. *Southeast Asian Aff* 2021:237–256
- Creswell JW, Hanson WE, Plano Clark VL, Morales A (2007) Qualitative research designs: selection and implementation. *Couns Psychol* 35(2):236–264. <https://doi.org/10.1177/0011000006287390>
- Demongeot M (2021) China: Vaccine diplomacy in every dose. *Energy Intelligence*. <https://www.energyintel.com/0000017b-a7dc-de4c-a17b-e7dbefcf0000>. Accessed 28 Nov 2022
- Dien I (2021) Vietnam proves immune to China's vaccine diplomacy campaign. *Nikkei Asia*. <https://asia.nikkei.com/Opinion/Vietnam-proves-immune-to-China-s-vaccine-diplomacy-campaign>. Accessed 28 Nov 2022
- Drager N, Fidler DP (2007) Foreign policy, trade and health: at the cutting edge of global health diplomacy. *Bull World Health Organ* 85(3):162. 10.2471/2FBLT.07.041079
- Dunford M, Qi B (2020) Global reset: COVID-19, systemic rivalry and the global order. *Res Glob* 2:100021. <https://doi.org/10.1016/j.resglo.2020.100021>
- Economist Intelligence Unit (2020) China plays vaccine diplomacy card with Mekong countries. http://country.eiu.com/article.aspx?articleid=230065006&Country=Myanmar&topic=Politics&subtopic=F_3. Accessed 28 Nov 2022
- European Commission (2021) €1 billion Team Europe initiative on manufacturing and access to vaccines, medicines and health technologies in Africa. https://ec.europa.eu/commission/presscorner/detail/en/ip_21_25942021. Accessed 28 Nov 2022
- Fan Y (2008) Soft power: ppower of attraction or confusion? *Place Brand Public Dipl* 4(2):147–158. <https://doi.org/10.1057/pb.2008.4>
- Fauci AS (2007) The expanding global health agenda: a welcome development. *Nat Med* 13(10):1169–1171. <https://doi.org/10.1038/nm1646>
- Ferdinand P (2016) Westward ho—the China dream and 'one belt, one road': Chinese foreign policy under Xi Jinping. *Int Aff* 92(4):941–957. <https://doi.org/10.1111/1468-2346.12660>
- Fereday J, Muir-Cochrane E (2006) Demonstrating rigor using thematic analysis: a hybrid approach of inductive and deductive coding and theme development. *Int J Qual Methods* 5(1):80–92. <https://doi.org/10.1177/160940690600500107>
- Fidler DP (2013) Health diplomacy. In: Cooper A, Heine J, Thakur R (eds) *The Oxford handbook of modern diplomacy*. Oxford University Press, Oxford, p 691–707
- Focus: SE Asia struggles to increase COVID-19 vaccination among peoples (2021) *Kyodo News*. <https://advance.lexis-com.ru.id.oclc.org/api/document?collection=news&id=urn:contentItem:62XW-SXR1-JC5B-G4BR-00000-00&context=1516831>. Accessed 28 Nov 2022
- Gauttam P, Singh B, Kaur J (2020) COVID-19 and Chinese global health diplomacy: geopolitical opportunity for China's hegemony? *Millenn Asia* 11(3):318–340. <https://doi.org/10.1177/0976399620959771>
- Gindler D, Tran JL (2022) COVID-19, patents, and trade secrets. *Bill of Health*. <https://blog.petrieflom.law.harvard.edu/2022/06/22/covid-19-patents-and-trade-secrets/>. Accessed 28 Nov 2022

- Goldsmith BE, Horiuchi Y (2012) In search of soft power: does foreign opinion matter for US foreign policy? *World Polit* 64(3):555–585
- Grossman D (2021) Duterte's dalliance with China is over. *Foreign Policy*. <https://foreignpolicy.com/2021/11/02/duterte-china-philippines-united-states-defense-military-geopolitics/>. Accessed 28 Nov 2022
- Heydarian RJ (2021a) Biden's 'hyper-diplomacy' goes kinetic in SE Asia. *Asia Times*. <https://asiatimes.com/2021/12/bidens-hyper-diplomacy-goes-kinetic-in-se-asia/>. Accessed 28 Nov 2022
- Heydarian RJ (2021b) China's vaccine diplomacy falls flat in the Philippines. *Asia Times*. <https://asiatimes.com/2021/03/chinas-vaccine-diplomacy-falls-flat-in-the-philippines/>. Accessed 28 Nov 2022
- Heydarian RJ (2021c) China's vaccine diplomacy stumbles in Southeast Asia. *Al Jazeera*. <https://www.aljazeera.com/opinions/2021/4/5/chinas-vaccine-diplomacy-stumbles-in-southeast-asia>. Accessed 28 Nov 2022
- Hoang, TH (2021) Commentary: Vietnam's attitude towards Chinese vaccines is very telling. *CNA*. <https://www.channelnewsasia.com/commentary/commentary-vietnams-attitude-towards-chinese-vaccines-very-telling-2022376>. Accessed 28 Nov 2022
- Hodge A (2021) Asian sceptics reject Chinese vaccine. *The Australian*. <https://www.theaustralian.com.au/world/asian-sceptics-reject-chinese-sinovac-covid19-vaccine/news-story/14aa0e1ef4fe46ea6a8c7e2740e3dfc>. Accessed 28 Nov 2022
- Hotez PJ (2021) Vaccine diplomacy: the multinational effort to eliminate disease might not only save lives but prevent conflict. *Foreign Policy* 124:68–69. <https://doi.org/10.2307/3183194>
- Hotez PJ (2014) 'Vaccine diplomacy': historical perspectives and future directions. *PLoS Negl Trop Dis* 8(6):e2808. <https://doi.org/10.1371/journal.pntd.0002808>
- Hotez PJ (2021) Preventing the next pandemic: vaccine diplomacy in a time of anti-science. Johns Hopkins University Press, Baltimore
- Hotez PJ, Narayan KMV (2021) Restoring vaccine diplomacy. *J Am Med Assoc* 325(23):2337–2338. <https://doi.org/10.1001/jama.2021.7439>
- Huang Y (2022) The Health Silk Road: how China adapts the Belt and Road Initiative to the COVID-19 pandemic. *Am J Public Health* 112(4):567–569. <https://doi.org/10.2105/AJPH.2021.306647>
- Hung J (2021) In China's 'vaccine diplomacy' with the Philippines, both sides are taking big risks. *East-West Center Wire*. <https://www.eastwestcenter.org/news-center/east-west-wire/in-china%E2%80%99s-%E2%80%98vaccine-diplomacy%E2%80%99-the-philippines-both-sides-are-taking-big>. Accessed 28 Nov 2022
- Hunt L (2021) China's 'vaccine diplomacy' leaves its mark on ASEAN. *The Diplomat*. <https://thediplomat.com/2021/01/chinas-vaccine-diplomacy-leaves-its-mark-on-asean/>. Accessed 13 Nov 2022
- Irwin A (2021) What it will take to vaccinate the world against COVID-19. *Nature* 592(7853):176–178. <https://doi.org/10.1038/d41586-021-00727-3>
- Jennings R (2021) China's COVID-19 vaccine diplomacy reaches 100-plus countries. *Voice of America*. <https://www.voanews.com/a/china-s-covid-19-vaccine-diplomacy-reaches-100-plus-countries/6233766.html>. Accessed 28 Nov 2022
- Ji L (2017) Measuring soft power (section overview). In: Chitty N, Ji L, Rawnsley D, Hayden C (eds) *The Routledge handbook of soft power*. Routledge, Oxon, p 75–92
- Kahraman E (2017) A methodological approach to nation branding: measurement and issues. In: Chitty N, Ji L, Rawnsley D, Hayden C (eds) *The Routledge handbook of soft power*. Routledge, Oxon, p 93–103
- Kickbusch I, Kökény M (2013) Global health diplomacy: five years on. *Bull World Health Organ* 91(3):159–159A. <https://doi.org/10.2471/BLT.13.118596>
- Kickbusch I, Kökény M, Kazatchkine M, Karaman E (2021) Responding to COVID-19: a resurgence of global health diplomacy. *Rev Mex Polit Ext* 119:13–32
- Kickbusch I, Liu A (2022) Global health diplomacy—reconstructing power and governance. *Lancet* 399(10341):2156–2166. [https://doi.org/10.1016/S0140-6736\(22\)00583-9](https://doi.org/10.1016/S0140-6736(22)00583-9)
- Kobierecka A, Kobierecki MM (2021) Coronavirus diplomacy: Chinese medical assistance and its diplomatic implications. *Int Polit* 58:937–954. <https://doi.org/10.1057/s41311-020-00273-1>
- Lee ST (2021) Vaccine diplomacy: Nation branding and China's COVID-19 soft power play. *Place Brand Public Dipl*. <https://doi.org/10.1057/s41254-021-00224-4>
- Lee-Brago P (2021) No vaccine diplomacy for China—Locsin. *The Philippine Star*. <https://www.philstar.com/headlines/2021/01/19/2071390/no-vaccine-diplomacy-china-locsin>. Accessed 28 Nov 2022
- Lin B, Funairole MP, Hart B, Price H (2021) China is exploiting the pandemic to advance its interests, with mixed results. *Center for Strategic and International Studies*. <https://www.csis.org/analysis/china-exploiting-pandemic-advance-its-interests-mixed-results>. Accessed 13 Nov 2022
- Liow JC (2021) China, ASEAN, and the COVID-19 pandemic. *Jt US Korea Acad Stud* 32:64–87
- Massola J (2020) Vaccine diplomacy offers risks and rewards for rising superpower. *The Sydney Morning Herald*. <https://www.smh.com.au/world/asia/vaccine-diplomacy-offers-risks-and-rewards-for-rising-superpower-20201007-p562zr.html>. Accessed 28 Nov 2022
- Meyer ET (2018) *The scholarly impacts of newspapers: The Guardian*. Oxford University Consulting, Washington Post, Wall Street Journal, and New York Times, 10.2139/ssrn.3194632. Accessed 14 Nov 2022
- Mfinanga FA, Mrosso RM, Bishibura S (2019) Comparing case study and grounded theory as qualitative research approaches. *Int J Latest Res Humanit Soc Sci* 2(5):51–56
- Nguyen CT (2022) US-China COVID-19 vaccine diplomacy competition in Vietnam: where vaccines go, influence may follow. *Aust J Int Aff*. <https://doi.org/10.1080/10357718.2022.2077302>
- Nguyen S (2021) Vietnam begins COVID-19 vaccination drive without China-made shots. *South China Morning Post*. <https://www.scmp.com/week-asia/health-environment/article/3124384/vietnam-begins-covid-19-vaccination-drive-without>. Accessed 28 Nov 2022
- Nguyen TK, Tran NT (2021) Vietnam-China relations in the context of COVID-19: situation and prospect. In: Peng N (ed) *The reshaping of China-Southeast Asia relations in light of the COVID-19 pandemic*. Springer Nature, Singapore, p 111–122
- Niquet V (2020) Decoding Xi Jinping's speech at the World Health Assembly. *The Diplomat*. <https://thediplomat.com/2020/05/decoding-xi-jinpings-speech-at-the-world-health-assembly/>. Accessed 13 Nov 2022
- Nowell LS, Norris JM, White DE, Moules NJ (2017) Thematic analysis: striving to meet the trustworthiness criteria. *Int J Qual Methods* 16(1):1–13. <https://doi.org/10.1177/1609406917733847>
- Nye Jr JS (2004) *Soft power: the means to success in world politics*. Public Affairs, New York
- Nye Jr JS (2008) Public diplomacy and soft power. *Ann Am Acad Pol Soc Sci* 616(1):94–109. <https://doi.org/10.1177/0002716207311699>
- Nye Jr JS (2009) Get smart: combining hard and soft power. *Foreign Aff* 88(4):160–163
- Okereke M, Esser MY (2021) Time to boost COVID-19 vaccine manufacturing: the need for intellectual property waiver by big pharma. *Ethics Med Public Health* 19:100710. <https://doi.org/10.1016/j.jemep.2021.100710>
- Onishi T (2021) Vietnam takes Sinopharm vaccines to ease Ho Chi Minh City's woes. *Nikkei Asia*. <https://asia.nikkei.com/Spotlight/Asia-Insight/Vietnam-takes-Sinopharm-vaccines-to-ease-Ho-Chi-Minh-City-s-woes>. Accessed 28 Nov 2022
- Paez A (2017) Gray literature: an important resource in systematic reviews. *J Evid Based Med* 10(3):233–240. <https://doi.org/10.1111/jebm.12266>
- Page MJ, McKenzie JE, Bossuyt PM et al. (2021) The PRISMA 2020 statement: an updating guideline for reporting systematic reviews. *Syst Rev* 10:89. <https://doi.org/10.1136/bmj.n71>
- Pannu J, Barry M (2021) The state inoculates: vaccines as soft power. *Lancet Glob Health* 9(6):e744–745. [https://doi.org/10.1016/S2214-109X\(21\)00091-7](https://doi.org/10.1016/S2214-109X(21)00091-7)
- Pascual FD Jr (2021a) China vaccine: how costly as a solution? *The Philippine Star*. <https://www.philstar.com/opinion/2021/01/19/2071379/china-vaccine-how-costly-solution>. Accessed 28 Nov 2022
- Pascual FD Jr (2021b) 63% of adult Pinoys prefer US vaccines. *The Philippine Star*. <https://www.philstar.com/opinion/2021/05/27/2101061/63-adult-pinoys-prefer-us-vaccines>. Accessed 28 Nov 2022
- Peng N (2021) Preface. In: Peng N (ed) *The reshaping of China-Southeast Asia relations in light of the COVID-19 pandemic*. Springer Nature, Singapore, p v–vi
- Philippine citizens rejecting Chinese COVID-19 vaccines due to delays, erratic supplies (2021) *Asian News International*. <https://www.annews.in/news/world/asia/philippines-citizens-rejecting-chinese-covid-19-vaccines-due-to-delays-erratic-supplies20210527164545/>. Accessed 28 Nov 2022
- Pitlo III LB, Karambelkar A (2013) Philippines and Vietnam in the South China Sea. *The Diplomat*. <https://thediplomat.com/2013/10/philippines-and-vietnam-in-the-south-china-sea-2/>. Accessed 4 Jan 2023
- Poling GB, Hudes ST (2021) Vaccine diplomacy is Biden's first test in Southeast Asia. *Center for Strategic and International Studies*. <https://www.csis.org/analysis/vaccine-diplomacy-bidens-first-test-southeast-asia>. Accessed 28 Nov 2022
- Rabena AJ (2021) The COVID-19 pandemic and Philippines-China relations. In: Peng N (ed) *The reshaping of China-Southeast Asia relations in light of the COVID-19 pandemic*. Springer Nature, Singapore, p 25–50
- Rakhmat MZ, Pashya MH (2021) *The political economy of China-Indonesia relations in 2021*. Institute for Development of Economics and Finance, Jakarta
- Ramani S (2021) Vaccines are Japan's new tool to counter China. *Foreign Policy*. <https://foreignpolicy.com/2021/07/23/vaccine-diplomacy-covid-japan-china-competition/>. Accessed 28 Nov 2022
- Rose AK (2015) Like me, buy me: the effect of soft power on exports. *National Bureau of Economic Research*. https://www.nber.org/system/files/working_papers/w21537/w21537.pdf. Accessed 14 Nov 2022
- Rusli AIM (2021) How COVID-19 pandemic bolsters China's influence toward hegemonic race in ASEAN. *Nation State J Int Stud* 4(2):178–203. <https://doi.org/10.24076/nsj.v4i2.587>

- Satoh H (2022) Fighting for a global community in a post-COVID world. In: van der Veere AP, Scheider F, Lo CYP (eds) *Public health in Asia during the COVID-19 pandemic*. Amsterdam University Press, Amsterdam, p 31–44
- Seah S, Hoang TH, Martinus M, Pham TPT (2021) The state of Southeast Asia: 2021 survey report. ISEAS—Yusof Ishak Institute. <https://www.iseas.edu.sg/wp-content/uploads/2021/01/The-State-of-SEA-2021-v2.pdf>. Accessed 14 Nov 2022
- Seah S, Lin J, Suvannapakdhy S, et al (2022) The state of Southeast Asia: 2022 survey report. ISEAS—Yusof Ishak Institute. https://www.iseas.edu.sg/wp-content/uploads/2022/02/The-State-of-SEA-2022_FA_Digital_FINAL.pdf. Accessed 14 Nov 2022
- Seymour M (2020) Analysis: the problem with soft power. Foreign Policy Research Institute. <https://www.fpri.org/article/2020/09/the-problem-with-soft-power/>. Accessed 14 Nov 2022
- Singh JP, MacDonald S (2017) Soft power today: Measuring the influences and effects. British Council. https://www.britishcouncil.org/sites/default/files/3418_bc_edinburgh_university_soft_power_report_03b.pdf. Accessed 13 Nov 2022
- Siregar CI, Napitupulu TG (2020) Scrutinizing the political and economic dynamics of China's distribution of vaccines in securitizing health. *Glob South Rev* 2(2):189–207. <https://doi.org/10.22146/globalsouth.63086>
- Starman AB (2013) The case study as a type of qualitative research. *J Contemp Educ Stud* 1:28–43
- Stuart-Fox M (2004) Southeast Asia and China: the role of history and culture in shaping future relations. *Contemp Southeast Asia* 26(1):116–139
- Sutter R, Huang CH (2021) Pushing regional advantages amid heightened US rivalry. *Comp Connect* 23(2):63–70
- Suzuki M, Yang S (2022) Political economy of vaccine diplomacy: explaining varying strategies of China, India, and Russia's COVID-19 vaccine diplomacy. *Rev Int Polit Econ*. <https://doi.org/10.1080/09692290.2022.2074514>
- Tan CK, Maulia E (2020) Red pill? China's COVID-19 vaccine diplomacy. *Nikkei Asia*. <https://asia.nikkei.com/Spotlight/The-Big-Story/Red-Pill-Behind-China-s-COVID-19-vaccine-diplomacy>. Accessed 28 Nov 2022
- Tang SM, Hoang TH, Qian AS, et al. (2020) The state of Southeast Asia: 2020 survey report. ISEAS—Yusof Ishak Institute. https://www.iseas.edu.sg/wp-content/uploads/pdfs/TheStateofSEASurveyReport_2020.pdf. Accessed 14 Nov 2022
- Tang SM, Thuzar M, Hoang TH et al (2019) The state of Southeast Asia: 2019 survey report. ISEAS – Yusof Ishak Institute. https://www.iseas.edu.sg/wp-content/uploads/pdfs/TheStateofSEASurveyReport_2019.pdf. Accessed 14 Nov 2022
- Tanveer S, Rowhani-Farid A, Hong K, Jefferson T, Doshi P (2022) Transparency of COVID-19 vaccine trials: decisions without data. *BMJ Evid Based Med*. <https://doi.org/10.1136/bmjebm-2021-111735>
- The Straits Times (2021). Sinopharm's two covid-19 vaccines show over 70 per cent efficacy against symptomatic cases: Study. <https://www.straitstimes.com/asia/east-asia/sinopharms-two-covid-19-shots-effective-study-says>. Accessed 15 May 2023
- Torregoza H (2021a) DFA says no strings attached in donated Chinese COVID vaccines. *Manila Bulletin*. <https://mb.com.ph/2021/01/22/dfa-says-no-strings-attached-in-donated-chinese-covid-vaccines/>. Accessed 28 Nov 2022
- Torregoza H (2021b) PH should not compromise WPS claim in procuring COVID-19 vaccines from China – Sen. Hontiveros. *Manila Bulletin*. <https://mb.com.ph/2021/01/22/ph-should-not-compromise-wps-claim-in-procuring-covid-19-vaccines-from-china-sen-hontiveros/?amp>. Accessed 28 Nov 2022
- Tran AT, Nguyen TH, Nguyen TPY (2021) Why Vietnam is being emphasized as the main subject of the acceleration of vaccine diplomacy from leader countries? *J Glob Polit Curr Dipl* 9(2):20–44
- Ullah AKMA, Kumpoh AAZA, Haji-Othman NA (2021) COVID-19 vaccine and international relations: new frontiers of vaccine diplomacy. *Southeast Asia Multidiscip J* 21(1):1–14
- Vanderwagen W (2006) Health diplomacy: winning hearts and minds through the use of health interventions. *Mil Med* 171(10 suppl_1):3–4. <https://doi.org/10.7205/MILMED.171.1S.3>
- Vietnam remains outlier to China's COVID-19 diplomacy (2021). *Asian News International*. <https://www.aninews.in/news/world/asia/vietnam-remains-outlier-to-chinas-covid-19-vaccine-diplomacy20210328213313/>. Accessed 28 Nov 2022
- Wee SL, Myers SL (2021) As Chinese vaccines stumble, U.S. finds new opening in Asia. *The New York Times*. <https://www.nytimes.com/2021/08/20/business/economy/china-vaccine-us-covid-diplomacy.html>. Accessed 28 Nov 2022
- Wu H, Gelineau K (2021) Chinese vaccines sweep much of the world, despite concerns. *AP News*. <https://apnews.com/article/china-vaccines-worldwide-0382aefa52c75b834fbaf6d869808f51>. Accessed 28 Nov 2022
- Wu IS (2019) Measuring soft power with conventional and unconventional data. National Academies of Sciences, Engineering and Medicine. https://sites.nationalacademies.org/cs/groups/dbassesite/documents/webpage/dbasse_179613.pdf. Accessed 14 Nov 2022
- Yang L (2020) The price of Beijing's vaccine diplomacy in Southeast Asia. *Voice of America*. https://www.voanews.com/a/east-asia-pacific_voa-news-china_price-beijings-vaccine-diplomacy-southeast-asia/6195787.html. Accessed 28 Nov 2022
- Yap DJ (2021) No sea row compromises in Sino vaccine talks: Galvez. *Philippine Daily Inquirer*. <https://newsinfo.inquirer.net/1387240/no-sea-row-compromises-in-sino-vaccine-talks%CB%90-galvez>. Accessed 28 Nov 2022
- Yeh YY, Wu CKS, Huang WH (2021) China's soft power and US public opinion. *Econ Polit Stud* 9(4):447–60. <https://doi.org/10.1080/20954816.2021.1933766>
- Yeo A, Gloria EV (2022) National identity and the limits of Chinese public diplomacy in the Philippines. *J Contemp China*. <https://doi.org/10.1080/10670564.2022.2052438>
- Yun SH (2018) An overdue critical look at soft power measurement. *J Int Area Stud* 25(2):1–20
- Zaini K (2021a) China's vaccine diplomacy in Southeast Asia—a mixed record. *ISEAS Perspective* 2021:86
- Zaini K (2021b) Commentary: Chinese vaccine diplomacy in Southeast Asia seeds goodwill but has limited strategic gains. *CNA*. <https://www.channelnewsasia.com/commentary/chinese-vaccine-diplomacy-sinovac-sinopharm-southeast-asia-267411>. Accessed 28 Nov 2022
- Zhang JY, Burton SD (2022) The dragon-elephant tango: making sense of the rise of China and India. In: Zhang JY, Burton SD (eds) *The elephant and the dragon in contemporary life sciences: a call for decolonising global governance*. Manchester University Press, Manchester, p 126–152
- Zhou YR (2022) Vaccine nationalism: contested relationships between COVID-19 and globalization. *Globalizations* 19(3):450–465. <https://doi.org/10.1080/14747731.2021.1963202>
- Zimmer C, Corum J, Wee SL (2022) Coronavirus vaccine tracker. <https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html>. Accessed 15 Jun 2023

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