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Manuscripts for consideration and editorial communication should be sent to:

The Editor, *International Journal of China Studies*

Institute of China Studies, University of Malaya

50603 Kuala Lumpur, Malaysia

Tel: +(603) 7967 7288

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# **Research Articles**





# **China's Economic Initiatives and their Impact on Environmental Governance of Global Infrastructure Projects**

Ian Tsung-yen *Chen*\*

Institute of Political Science, National Sun Yat-sen University

## **Abstract**

The Belt and Road Initiative (BRI) and the Asian Infrastructure Investment Bank (AIIB) have raised concerns among critics about their potential negative impact on global environmental governance. These China-led initiatives may lower the environmental and social safeguard standards of their infrastructure investments abroad to outcompete other international financial institutions (IFIs) like the Asian Development Bank (ADB) and the World Bank. This could trigger a race to the bottom in the global infrastructure investment market. The study found that while the BRI may have a significant influence on the norms and standards of development finance, the AIIB has only had limited impact. The market has become more concentrated rather than intensified competition. The ADB's standards have not been affected, but the World Bank may have been negatively impacted and reduced its project-level environmental safeguards. The negative impact extends beyond BRI countries to other countries. The most concerning finding relates to the substantial global investments in coal power projects under the BRI. To improve global sustainability, China and developed countries must collaborate to provide cleaner and more affordable infrastructure investment to developing countries.

**Keywords:** *Belt and Road Initiative, Asian Infrastructure Investment Bank, international financial institutions, race to the bottom, China*

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\* Ian Tsung-yen Chen is an Associate Professor at the Institute of Political Science at National Sun Yat-sen University in Taiwan. His research focuses on international political economy, international organizations, and Taiwan's foreign relations. In 2021, he published the book *Configuring the Asian Infrastructure Investment Bank* through Routledge. He can be reached at <ianchen@mail.nsysu.edu.tw>.

## 1. Introduction

When Chinese President Xi Jinping proposed the construction of the “One Belt One Road” initiative, later renamed the Belt and Road Initiative (BRI), and the Asian Infrastructure Investment Bank (AIIB) to finance infrastructure in Asia, many people were skeptical that the impact of these two mega-projects would be entirely positive. Before the emergence of the BRI and the AIIB, major international financial institutions (IFIs) in Asia, such as the Asian Development Bank (ADB) and the World Bank, had been raising environmental and social standards for the infrastructure projects they financed. Such efforts can encourage host countries to protect the environment and society from extreme pollution and exploitation while implementing infrastructure projects, and thus, they can encourage a race-to-the-top effect. After Xi launched his grand proposal, critics were concerned that given China’s poor record on environmental and social policies in building domestic infrastructure, the Beijing-led BRI and AIIB would negatively impact participating countries. Low-and middle-income countries (LMICs) would no longer depend on project loans from major IFIs, which require fund-recipient countries to comply with costly and stringent conditions or standards. Alternatives proposed by China that impose lower standards provide more attractive and cheaper options. With the emergence of the AIIB and the BRI making the market more competitive, major IFIs might no longer insist on strict standards (Katada and Liao, 2020). Given that the BRI and the AIIB are considered China’s grand economic initiatives that complement each other, the emergence of both initiatives may have brought even more negative impacts on other IFIs’ environmental safeguard standards. To retain their dominant position, they may be forced to dilute environmental and social safeguards to compete with China’s initiatives. Rather than a race to the top, the emergence of China in the development finance market could lead to a race to the bottom among host countries and IFIs. Whether this outcome will materialize has become an important question, as well as a challenge, for global environmental governance.

This paper primarily focuses on whether the emergence of the AIIB and the BRI has increased competition in the infrastructure finance market and whether such heightened competition will lead to detrimental environmental and social impacts, resulting in an environmental race-to-the-bottom phenomenon. To investigate these questions, this paper compares environmental and social impact assessments of all infrastructure projects

financed by the ADB and the World Bank before and after the emergence of the BRI and AIIB. Additionally, it compares the impacts in AIIB vs. non-AIIB and BRI vs. non-BRI countries to identify any country-specific differences resulting from China's grand initiatives. The findings of this study are mixed. Rather than raising the level of competition, the emergence of the BRI and the AIIB has made the market more concentrated. The BRI itself may become powerful enough to change the norms and standards of development finance. However, the AIIB has had limited influence. Moreover, the market structure change has not sparked a race to the bottom in the ADB's standards, but the World Bank appears to have been negatively influenced and lowered its environmental safeguards. However, this race-to-the-bottom effect on the World Bank has not been limited to BRI countries but appears to be a more general response. The most alarming finding of this paper is the significant worldwide investments in coal power projects under the BRI, which may pose a potential challenge to global sustainability. The solution requires inputs from both China and high-income countries (HICs) and advanced technology to provide affordable alternatives for power generation in LMICs.

The remainder of the paper initially presents contrasting viewpoints on the current state of the issue under investigation. Subsequently, a section on research design and methodology is presented, along with the exposition of the empirical outcomes and a thorough discussion of the implications of the findings. The final section serves as the conclusion of this study.

## **2. Divergent Perspectives**

The question of the impact of the emergence of AIIB and BRI on global environmental sustainability remains unsolved. Existing literature suggests three different views. First, optimists argue that AIIB can bridge the development finance shortfall in Asia and bring momentum to the evolution of a more efficient global development finance regime (Chen, 2021: 36-40). The AIIB's current governing body is pursuing innovative and transformative methods for sustainable infrastructure investment that can generate positive developmental spillovers (Vazquez and Chin, 2019). Additionally, the presence of several European shareholders in AIIB makes the bank more likely to raise its environmental standards when issuing infrastructure loans (Tracy et al., 2017). At least, the AIIB complements the existing international development finance system and seeks to align with the established norms

and practices of multilateral development banks (Wilson, 2019). Although non-regional members together cannot hold more than 25% of shares, almost half of the bank's senior management officers are from Europe or HICs. All these features suggest that AIIB is more likely to follow or even help improve established global arrangements rather than causing a degradation of global sustainability (Gransow and Price, 2019; Yuan, 2018). Rather than a race to the bottom, AIIB may surprisingly encourage host countries to join in a race to the top. In the case of BRI, one study shows that China's outward foreign direct investment (FDI) has improved BRI countries' institutional quality in terms of regulation and the rule of law. This result further implies that BRI investments can promote national sustainable development (Pan et al., 2020).

On the other hand, for pessimists, the World Bank has been under tremendous pressure to retain its dominant status in development finance due to the emergence of the AIIB, which might not adhere to established standards. Before the establishment of the AIIB, Washington had raised concerns about the environment, as well as sovereign debts and human rights practices (Etzioni, 2016). As a result, the AIIB may be more attractive to LMICs and dilute the global influence of the World Bank (Priester, 2020; Güneylioglu, 2022). Non-governmental organizations have criticized the AIIB's Environmental and Social Framework (ESF) for not allowing for adequate consultation processes. Critics expect that the AIIB may soon become an accomplice in forced evictions, violations of the rights of indigenous peoples, and environmental degradation (Inclusive Development International, 2015).

The legal wordings adopted in the AIIB's ESF are relatively ambiguous compared to those of its counterparts. For example, the AIIB stipulates that it "will not knowingly finance projects involving" activities or items specified in its Environmental and Social Exclusion List (ESEL). The use of the word "knowingly" weakens its ESEL compared to the standards of other lenders (Chen, 2021: 87-89). Moreover, the AIIB claims that by implementing streamlined and fast-track procedures (Zhao, Gou, and Li, 2019), it has resolved problems related to lengthy and inefficient project evaluations that characterize major lenders. However, others worry that these reforms will encourage inadequate environmental and social assessments of infrastructure projects. When the AIIB joined the game in 2016, the World Bank announced that it had perceived a need to revise its environmental and social safeguards more flexibly to keep up with new and varied development

demands. Some considered these revisions a degradation of standards caused by the need to respond to increasing competition from newcomers, namely the AIIB (Laurance, 2016).

In regards to the BRI in comparison with the AIIB, several studies suggest that although China aims to implement infrastructure projects with higher environmental standards at home, it might not encourage such development with its overseas infrastructure investments. Critics worry that the BRI lacks meaningful environmental and social safeguards to protect local populations from adverse impacts (Tracy et al., 2017). One study shows that trade with China does not promote stringent environmental policies among China's trade partners and may generate a race to the bottom in the environmental policies of trading partners (Gamso, 2018). The investments abroad under the BRI may have adverse effects. The most criticized of these negative impacts is the massive investments in worldwide coal power projects, which make China the dominant exporter and financier in this field. In the pursuit of rapid economic development, private interest groups and domestic political-economic structures of developing countries have welcomed abundant capital from China and other countries into the non-renewable energy sector, leading to hindrances in renewable energy expansion and ecological damage (Lim, 2022). This impact is especially significant given that major IFIs have avoided investments in polluting coal power plants. Although it provides efficient and cheaper power generation options for BRI countries, it creates a significant environmental risk that requires innovative solutions (Lin and Bega, 2021).

There are also quantitative studies showing a possible association of the BRI with a race-to-the-bottom effect. One study shows that the World Bank issues loans with significantly fewer conditions to recipient countries that receive aid or investments from China. This result suggests that LMICs may perceive new donors or investors as an attractive outside option and thus force the World Bank to finance with fewer restrictions to retain its competitiveness in the market (Hernandez, 2017). Another study shows that unlike projects financed by major donors from HICs, infrastructure investment projects in Africa underwritten by China discourage the involvement of trade unions in the local area and have not promoted higher labor standards (Isaksson and Kotsadam, 2018).

Third, there are studies elaborating on and evaluating existing arguments and offering neutral assessments rather than choosing sides in this debate.

Most of these studies do not provide a clear-cut answer and instead consider China to be crucial in determining the environmental standards of investment projects in host countries. Improving global sustainability requires China to construct the BRI in an integrative rather than exploitative manner to protect the environment. Doing so will protect the reputations of both China and the BRI (Teo et al., 2019). In addition, the effectiveness of environmental governance under the BRI will also depend on the host countries' determination to implement stringent environmental laws and regulations (Coenen et al., 2021). In the asymmetric relationships under the initiative, China possesses enough power to compel its BRI partners to adopt greener standards at home.

In summary, existing research suggests that although many are concerned that the AIIB will trigger a race to the bottom, the bank, in practice, has not deviated much from established international best practices. In contrast, existing studies show that the BRI has indeed introduced negative environmental impacts on BRI countries. However, these studies focus more on international trade, labor rights, loan conditionality, or quality of governance. This paper differs from existing studies in at least two aspects. First, it specifically focuses on the field of global environmental standards. Although a few studies have touched upon this dimension, most of them focus on theoretical debates or the evaluation of divergent arguments. Few have empirically tested competing arguments. Second, unlike most research focused on competition among fund-receiving countries, this study is more concerned with competition among financing agencies. Instead of competition, the market can also become more concentrated with China's enormous inputs of investments abroad. If this is the case, then China's growing market share will also increase its influence in shaping the global environmental standard of infrastructure projects. Specifically, this paper asks whether established international financial institutions will degrade their environmental protection standards in loan issuance in the face of China's growing ambition for global economic initiatives. These are the main focuses and contributions of this paper.

### **3. Methods and Data**

This study primarily relies on quantitative data to analyse and draw conclusions. First, it investigates the change in competition level among IFIs after the emergence of the AIIB and the BRI by using the Herfindahl-

Hirschman index (HHI) for total infrastructure investments. The HHI is the sum of squares of the share percentage in a specific market, and a high HHI indicates a highly concentrated market structure. In this case, a high HHI would mean that the distribution of Asia's infrastructure loans is highly concentrated among a few institutions and vice versa. The descriptive statistics of the ADB, World Bank, European Bank for Reconstruction and Development (EBRD), AIIB, and BRI are included in the analysis. The IFI data come from official statistics in annual reports or project-level data.<sup>1</sup> The BRI data come from the China Global Investment Tracker (CGIT), published by the American Enterprise Institute (AEI) and the Heritage Foundation (Scissors 2021).

Other descriptive statistics measure the IFI- and country-level environmental and social safeguards. The IFI-level data calculate the annual average score in the environmental assessment category of all infrastructure projects, with projects in category A, B, and C coded as 1, 2, and 3, respectively. The higher the number assigned to a project, the more it aligns with environmental and social safeguards or the less adverse its impact is perceived to be. The coding strategy applies to the World Bank, ADB, and AIIB projects.<sup>2</sup> For example, if a country's ADB score for 2016 is 3, it means that all of its ADB projects approved in 2016 are categorized as C, with minimal or no adverse environmental impact. In contrast, if a country's average score in 2018 is 1, all the projects receiving IFI investments in 2018 in that country are likely to have significant adverse environmental impacts. The calculation of country-level scores includes only IFI investment projects in a specific country.

Following these descriptive statistics on the level of competition and environmental and social safeguards, the paper uses regression analysis to determine whether the emergence of the AIIB and BRI is associated with changes in national sustainability levels. The related variables include a country's participation in the AIIB and the BRI and its environmental, economic, and national development indicators. Dummy variables are used to code whether a country was a member of the AIIB or a BRI country in 2015. The reason for using 2015 as the separation point is that these countries were early members and partners of China's BRI and AIIB and are therefore the most enthusiastic about them. The World Bank should be subject to the greatest competitive pressures of development finance projects in these countries. Therefore, if an environmental race to the bottom were



to materialize in World Bank projects, it would most likely occur in those countries. The measure of AIIB membership uses official data,<sup>3</sup> and national participation in the BRI is based on data collected by the Council on Foreign Relations (Sacks, 2021).

The environmental variables represent national changes in the sustainability level, acting as a proxy for the race-to-the-bottom effect. The first variable is the country-level score on environmental and social safeguards, as previously mentioned. The second uses the 10-year change in the Environmental Performance Index (EPI) from Yale University (Wendling et al., 2020). The economic variables capture potential changes in the national sustainability level and include the national proportion of IFI financial commitments. The data for this comes from IFI official statistics.<sup>4</sup> Additionally, the national economic performance variables are based on World Bank data, which include national GDP, GDP per capita, GDP growth, and government debt as a percentage of GDP. The variables on national development include a country's level of infrastructure development, based on its World Bank Logistics Performance Index (LPI) value for 2014 or 2016, subject to data availability. In addition, the quality of public governance is measured using the World Bank's Worldwide Governance Indicators (WGIs) (Kaufmann and Kraay 2021). The WGIs adopted in the following sections include control of corruption and government effectiveness, which proxy the public sector's corruption control capability and policy formulation and implementation.

This study considers the practices of AIIB and BRI, which may prompt questions as to whether the financing model of BRI falls within the purview of IFIs and hence should not be incorporated in this research. However, there are several reasons for including BRI in this study. Firstly, both AIIB and BRI have come under criticism from governments and scholars for potentially compromising the environment and social sustainability aspects of development finance. This study directly addresses these concerns by including BRI, despite its possible shortcomings. Secondly, this study argues that although BRI is not formally part of IFIs, it may play a critical role in supporting AIIB. Infrastructure projects that China cannot finance through AIIB or request financing from it could still receive funding from BRI, which has greater autonomy. The BRI shares the AIIB's objective of achieving enhanced connectivity, regional cooperation, and economic development on a trans-continental scale. Its worldwide coverage surpasses

that of the AIIB (Rana and Ji, 2020). Therefore, it is essential to analyse AIIB and BRI together in certain contexts, as these development finance strategies are likely to impact the international development finance order. Thirdly, BRI's flexibility allows China to provide financing for infrastructure projects that major IFIs have previously declined to fund. Consequently, BRI could be seen as a viable alternative to mainstream IFIs in practical considerations for governments. Thus, in reality, BRI may become a major competitor of important IFIs. Finally, the empirical analysis below includes both BRI and non-BRI scenarios at the national level, offering relevant insights for readers who argue against the inclusion of BRI. Based on these reasons, this study incorporates BRI data.

#### **4. AIIB, BRI and the Impacts**

Theoretically, if the competition among International Financial Institutions (IFIs) intensifies, there is a risk of lowering environmental safeguards in infrastructure projects. Therefore, it is crucial to check first whether the infrastructure development finance sector in Asia has become more competitive with the massive inputs of China through AIIB and BRI. If so, how competitive is it? The HHI is used here to measure the competition level of development finance in Asia among the IFIs mentioned above. The HHI is the sum of the squares of the share percentages. A large HHI suggests a concentrated market structure, which means a low level of competition. This research also calculates the effective number of IFIs by using the multiplicative inverse of the HHI.<sup>5</sup> Using these two indices, previous studies have found that the competition intensity of development finance in Asia has become greater, although not significantly, since the establishment of the AIIB. In Asia, the effective number of IFIs increased from approximately 2.5 in 2014 to 3.0 in 2019 (Chen, 2021: 92-93).

Building on previous research, this study incorporates BRI data. Although the BRI operates differently from IFIs, they share similar infrastructure funding goals. Therefore, this paper considers the BRI an important complementary financing arm of major IFIs, and includes the funding opportunities added by the BRI. The results in Table 1 below show that after the BRI entered the market in 2013, the effective number of infrastructure investors increased due to China's initial BRI investments. The BRI became a major competitor in Asia's infrastructure loan market and had the potential to influence other IFIs. Since 2014, the effective number

of financing agencies has dropped to around two as China significantly increased the scale of the BRI. This means that development finance in Asia has become less competitive and more concentrated. The main loan competition may exist between the BRI and the rest of the IFIs. The creation of the AIIB in 2015 slightly raised the level of competition.

As a result, after China launched the BRI and AIIB, major IFIs immediately faced a formidable competitor from China's grand economic initiatives, which have the potential to result in a more concentrated market structure. This outcome may have caused traditional IFIs to relax their environmental and social safeguard policies to attract the attention of state leaders. China could be more capable of controlling the financing market for infrastructure projects. If the BRI and AIIB finance more environmentally detrimental projects, other major IFIs are more likely to follow suit. Next, this paper will analyse whether this is the case.

**Table 1. Investment Percentage and Competition Level of Development IFIs in Asia**

Year	ADB	WB	EBRD	AIIB	BRI	Inverse HHI
2012	36.3%	42.4%	21.2%	0.0%	0.0%	2.80
2013	22.1%	25.6%	10.6%	0.0%	41.7%	3.34
2014	9.0%	14.3%	4.7%	0.0%	71.9%	1.82
2015	9.7%	13.3%	4.5%	0.0%	72.6%	1.80
2016	12.1%	13.4%	4.2%	1.1%	69.1%	1.95
2017	14.4%	13.7%	5.0%	1.6%	65.3%	2.13
2018	10.8%	14.1%	4.4%	2.1%	68.6%	1.98
2019	14.6%	12.2%	5.0%	3.2%	65.0%	2.16

*Note: The inverse HHI represents the effective number of competitors.*

Having found a more concentrated structure and China's growing control, in the next step, this paper examines whether these changes have coincided with the environmental and social degradation of infrastructure projects financed by traditional IFIs. To evaluate this question, this paper compares the overall environmental and social safeguard performance of ADB and World Bank projects before and after 2015, the year when the AIIB and BRI emerged. The World Bank's environmental safeguard performance is measured with the average score mentioned above. The exact same measurement applies to the ADB and AIIB projects. The only

difference is that the ADB has safeguard assessments on three dimensions: impacts on the environment, indigenous peoples, and involuntary resettlement.

Table 2 presents the average safeguard performance scores of the AIIB, World Bank, and ADB projects from 2010 to 2020. From 2016 to 2020, the AIIB's projects had a lower average environmental safeguard performance score than those of the World Bank and the ADB, indicating that they were more environmentally detrimental. If negative impacts are observed, this may cause other IFIs to impose even lower standards in an effort to regain their previous advantage. The average environmental safeguard performance score of the World Bank has decreased since 2015, with scores dropping from 2.2 in 2010-2015 to 2.04 in 2016-2020. The score of 2.01 in 2019 suggests that a larger number of the Bank's projects may have caused adverse environmental impacts on average that year, and the situation further worsened in 2020. The percentage of the Bank's category A projects increased from 10.87% in 2014 to 14.3% in 2020, while the percentage of category B projects rose from 66.6% in 2014 to 80.5% in 2020. These results seem to support the criticism that the Bank's new ESF, approved in 2016, led to the financing of more environmentally detrimental infrastructure projects. This trend echoed concerns that the Bank's response to competition from new players such as the AIIB was more environmentally and socially unfriendly (Priester, 2020). In contrast, the ADB's safeguard performance does not appear to have been affected, but rather improved on all three dimensions since 2015. These findings suggest that the race-to-the-bottom phenomenon is only empirically supported at the World Bank, not at the ADB.

**Table 2. Average Safeguard Performance of IFI Projects, 2010–2020**

	<b>AIIB</b>	<b>World Bank</b>	<b>ADB-envi.</b>	<b>ADB-indig.</b>	<b>ADB-rest.</b>
2010	n/a	2.25	2.18	2.73	2.35
2011	n/a	2.30	2.03	2.71	2.16
2012	n/a	2.20	2.18	2.87	2.21
2013	n/a	2.20	2.10	2.75	2.19
2014	n/a	2.16	2.05	2.84	2.26
2015	n/a	2.12	2.18	2.80	2.31
2016	1.67	2.13	2.22	2.82	2.36

	<b>AIIB</b>	<b>World Bank</b>	<b>ADB-envi.</b>	<b>ADB-indig.</b>	<b>ADB-rest.</b>
2017	1.82	2.07	2.19	2.81	2.29
2018	1.63	2.08	2.18	2.79	2.41
2019	1.63	2.01	2.24	2.88	2.46
2020	2.09	1.91	n/a	n/a	n/a
Avg. 10–15	n/a	2.20	2.12	2.78	2.25
Avg. 16–20	1.77	2.04	2.21	2.82	2.38

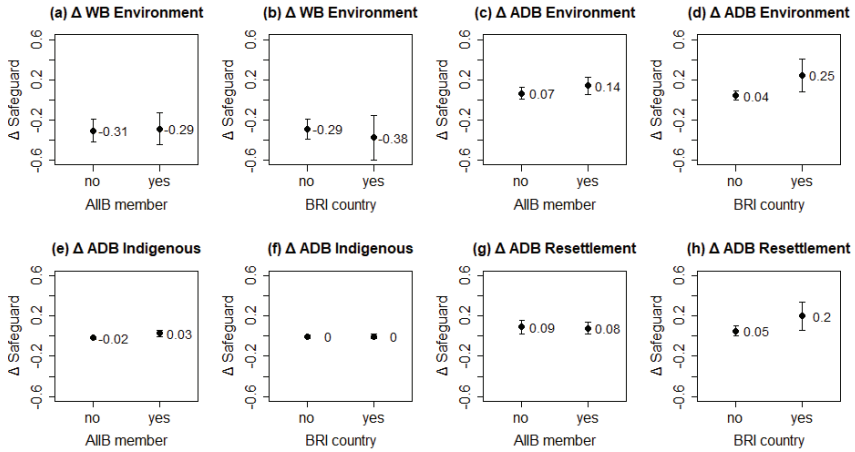
In the next step, this paper investigates country-level data to determine whether negative impacts can be detected in countries that are members of the AIIB and partners of the BRI. Existing studies show that the World Bank has invested less in AIIB member countries. Total World Bank financial commitments per capita to non-AIIB member countries have increased two- to three-fold since 2016, but there has been little change in investments to AIIB members (Chen, 2021: 95-97). This change is country-specific and depends on membership in the AIIB, which suggests that LMICs that have joined the AIIB have reduced their dependence on the World Bank, thus increasing competition among IFIs. If the race-to-the-bottom hypothesis holds, traditional IFIs may approve projects with much more significant potential impacts in those countries due to the new pressures of competition. As a result, IFI projects' environmental and social safeguard performance in such countries is likely to have declined after they joined the BRI and the AIIB.

First, we calculate each country's average environmental and social safeguard scores on World Bank projects from 2010 to 2015 and 2016 to 2020, and then compare each country's performance in these two periods. The countries under comparison include 127 countries that received World Bank commitments in both periods. Among them, 31 were AIIB members in 2015, while 96 were not; 22 were BRI countries, while 105 were not. Adopting the same measure, this study identifies 40 countries that secured ADB projects in both periods. Fifteen were AIIB members, 11 were BRI countries, 25 were not AIIB members, and 29 were not BRI countries. The comparisons show whether the negative impact has varied at the country level and allow us to examine the magnitudes of the effects of China's two initiatives.

Figure 1 demonstrates the results of the comparisons. In the case of the World Bank, both AIIB and non-AIIB members, as well as BRI and non-

BRI countries, show negative changes in Figures 1(a) and 1(b), indicating that all groups of countries performed worse on environmental safeguards. This result corresponds to the finding above. For example, Figure 1(a) shows that the average environmental safeguard score of World Bank projects from 2016 to 2020 across 31 AIIB members decreased by 0.29 points from that in 2010 to 2015. This decline is not unique to AIIB members, as non-AIIB members also experienced a similar situation, with their average score dropping by a more pronounced 0.31 points. However, with a 95% confidence interval, the difference is not statistically significant. The same situation remains when comparing BRI and non-BRI countries in Figure 1(b). Although the safeguard score of countries participating in the BRI dropped more, there is no statistical significance. This finding suggests that the degradation in environmental safeguards by the World Bank appears to be a general trend without country-specific variation.

**Figure 1. The Change in Safeguard Scores Before and After 2015**



Figures 1(c) to 1(h) illustrate the changes in ADB projects' environmental and social safeguard scores in different countries. The impacts on the environment, indigenous people, and involuntary resettlement are assessed in Figures 1(c) and 1(d), 1(e) and 1(f), and 1(g) and 1(h), respectively. Compared to the change in World Bank projects, the change in environmental and social impacts of ADB projects after 2015 is relatively

minor. There are also no statistically detectable country-specific differences. For AIIB, non-AIIB, BRI, and non-BRI countries, the changes in ADB projects' environmental and social impacts appear to be trivial. Furthermore, the performance on all three dimensions improved after 2015, albeit at a negligible level. This finding further strengthens existing studies concluding that negative effects have not occurred in the ADB. Instead, when the infrastructure market became more concentrated after the emergence of China's economic initiatives, ADB projects' environmental and social safeguard levels slightly improved.

In summary, the results in Figure 1 indicate that only the World Bank appears to have suffered from the negative effect. Without observing country-specific variation, we see instead that the effect in the World Bank appears to be a general trend applicable to all borrowers. Such effect might not be a result of a race to the bottom but a response to China's growing concentrated power. The bank's changed funding patterns do not appear to discriminate against countries by membership in other IFIs. This may indicate that the bank regards this rising competition in development financing as a global challenge that therefore requires a globally applicable strategy. The new strategy cannot restrict its scope to a specific country or region.

To evaluate the relationship between the degradation of environmental safeguards in World Bank projects and the emergence of the BRI and AIIB, we conducted country-level regression analysis, controlling for the economic and developmental factors discussed in the previous section. In models 1 to 4, the dependent variable is the proportional changes in World Bank financial commitments before and after 2015, and the main independent variables are dummy variables for whether a country was a member of the AIIB or a BRI country in 2015. Economic control variables in the model include national GDP in 2015, national GDP per capita in 2015, GDP growth, and government debt as a percentage of GDP. Unlike national GDP and GDP per capita data, which vary more stably across time, the last two variables are calculated as the average from 2015 to 2019 because national GDP growth and debt levels may fluctuate more drastically in the short term. Using the average as a proxy can better avoid bias resulting from short-term economic shocks.

The models also control for three developmental variables: a country's infrastructure level, the government's capability of controlling corruption, and the change in a country's sustainability status. The corruption level is

measured by the index of corruption control from the World Bank WGI. The change in the national sustainability level is measured with the 10-year change in the EPI in 2020 (Wendling et al. 2020). The regression analysis also investigates the association between the level of competition and World Bank projects' change in environmental safeguards. As the dependent variables are continuous, the ordinary least squares (OLS) estimation method is adopted.

Table 3 presents the results of the regression analysis. Firstly, it shows that BRI countries have received relatively lower World Bank financial commitments compared to non-BRI countries (model 1). The relationship is statistically significant. Although membership in the AIIB appears to be negatively associated with the change in World Bank funds, the association is not statistically significant. Moreover, under the statistical models incorporating economic and developmental variables (models 3 and 4), both the BRI and AIIB variables are statistically nonsignificant. After controlling for other factors, we see that smaller or wealthier economies received a larger proportion of World Bank commitments after 2015. Both economic associations are statistically significant. Although analysing these economic factors is beyond the scope of this paper, this result shows that the competition effect may relate more to economic factors than to participation in the BRI or AIIB. Lastly, models 3 and 4 do not detect a significant association between the national percentage change in World Bank projects' financial commitments and the projects' level of environmental safeguards. This finding further weakens the arguments for the existence of a race to the bottom at the national level.

Models 5 to 8 were conducted to investigate the factors that may have caused the national environmental safeguard score change before and after 2015, with the dependent variable being the change in environmental safeguard scores between 2011 and 2015 and 2016 and 2020. The independent and control variables were the same as in previous models. The results indicated that none of the above factors had statistically significant associations with changes in environmental safeguards. Therefore, there is insufficient evidence to support that the level of environmental safeguards of World Bank infrastructure projects in AIIB member states or BRI countries has declined in comparison with the level in non-AIIB or non-BRI countries. These findings demonstrate only that BRI countries appear to have received lower World Bank financial commitments since 2015, probably due to the



generosity under the BRI, which is financed by China's state-owned banks and enterprises, making these countries less dependent on the World Bank. However, this declining dependence has not resulted in an environmental race to the bottom by the World Bank in AIIB or BRI countries.

**Table 3. National Changes of World Bank's Funds and Environmental Safeguard Score Before and After 2015**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$\Delta$ Funds	$\Delta$ Funds	$\Delta$ Funds	$\Delta$ Funds	$\Delta$ Safeguard	$\Delta$ Safeguard	$\Delta$ Safeguard	$\Delta$ Safeguard
BRI country	-0.342**		-0.137		-0.087		-0.093	
	(0.160)		(0.157)		(0.142)		(0.161)	
AIIB member		-0.310		-0.158		0.019		0.078
		(0.201)		(0.182)		(0.120)		(0.187)
$\Delta$ Safeguard			0.019	0.027				
			(0.058)	(0.056)				
$\Delta$ Funds							0.022	0.032
							(0.073)	(0.071)
GDP			-0.165***	-0.159***			0.038	0.028
			(0.058)	(0.048)			(0.059)	(0.070)
GDP/capita			0.028***	0.029***			-0.002	-0.003
			(0.009)	(0.010)			(0.009)	(0.010)
GDP growth			-0.004	-0.001			0.015	0.011
			(0.016)	(0.019)			(0.018)	(0.020)
Debt/GDP			-0.002	-0.001			-0.001	-0.000
			(0.002)	(0.002)			(0.002)	(0.002)
WB LPI			0.004	0.001			-0.105	-0.118
			(0.206)	(0.208)			(0.372)	(0.361)
Corruption			-0.132	-0.126			0.149	0.160
			(0.091)	(0.093)			(0.160)	(0.158)
$\Delta$ EPI			0.009	0.008			0.011	0.0112
			(0.011)	(0.011)			(0.0128)	(0.013)
Countries	152	152	106	106	132	132	106	106

Note: Robust standard errors are reported in parentheses; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Kazakhstan stands out as one of the most prominent cases of increasing reliance on the BRI. Since 2016, when the AIIB and BRI accelerated, Kazakhstan has received minimal funding from either the World Bank or the ADB, as compared to the over US\$1 billion loans received from both IFIs in 2016. However, Astana has secured substantial infrastructure investments from China's BRI (Chen, 2021: 114-116). According to the CGIT dataset, Kazakhstan has received a total of US\$9.45 billion in BRI investments from 2016 to 2022, making the BRI the primary source of funds for Kazakhstan's national development. The majority of BRI funds have been directed towards the energy and transportation sectors, constituting 54% of the total BRI investments. In contrast, there have been almost no investments from the World Bank or ADB in the same sectors since 2016. The change in the structure of foreign financial resources indicates that Astana considers the BRI as the most critical source of external funding, since BRI projects are not required to adhere to universally recognized best practices.

Another aspect of the negative impact relates to the fact that international financial institutions (IFIs) such as the World Bank and the ADB have essentially frozen environmentally detrimental coal-fired power plant projects. As a result, developing countries dependent on cheaper coal-fired power may ask for funds from new IFIs such as the AIIB (Chin, 2016). Indeed, the ADB has stopped funding coal-fired power plants since 2013 (Bin, 2021). Although critics charge that the International Finance Corporation (IFC), the World Bank's private arm, has indirectly supported coal power by financing commercial banks, private equity funds, and hedge funds that have investments in coal, the World Bank itself has not directly financed coal-fired power plants for a long time (Gerretsen, 2020).

In general, developing countries have become less likely to ask for coal power investments from major IFIs. Like the World Bank, the new AIIB has not directly approved coal projects, but it has been a co-financer of the IFC Emerging Asia Fund's equity in coal projects (Freeman, 2019). In terms of governance structure, the AIIB has followed most of the international best practices set up by the established IFIs (Lichtenstein, 2018). The BRI, however, has acted differently and become the largest financer of global coal-fired power, to the detriment of the global climate. Research shows that China's BRI has been involved in at least 240 coal projects in 25 BRI countries. China's coal spree abroad may threaten its partners in high-emissions development (Hilton, 2019). According to CGIT (Scissors, 2021),

approximately 20% of all BRI funds had gone to coal power projects by the end of 2020. Rather than the AIIB, the BRI may be more likely to trigger global competition in financing coal power plants and thus harm the global environment.

The following OLS regression analysis investigates the potential effects of BRI projects on global sustainability. The dependent variables are the Environmental Performance Index (EPI), the environmental health index (a subcategory of the EPI),<sup>6</sup> and the 10-year change in the EPI. These variables measure the level of national sustainability, the national capability of protecting populations from environmental health risks, and the level of improvement of environmental performance over the past ten years. The main independent variables that measure the national level of BRI involvement are total BRI funds and BRI funds for coal power projects. The control variables include the abovementioned economic and developmental variables. Table 4 presents the results. According to models 1 to 6, countries receiving more total BRI funds or funds for coal power projects appear to perform worse in terms of national sustainability and environmental health risks. However, this performance might not have worsened during the past ten years. This result suggests that BRI coal projects are more likely to go to countries with higher environmental risks *ex ante*, but not necessarily to countries experiencing continuous degradation in national sustainability. The results also show that the level of national environmental sustainability is positively related to economic size (GDP), the level of economic development (GDP/capita), and the quality of public services in policy formulation and implementation (government effectiveness).

**Table 4. National Sustainability and BRI Projects**

	(1)	(2)	(3)	(4)	(5)	(6)
	EPI	EPI-Health	ΔEPI	EPI	EPI-Health	ΔEPI
BRI funds	-0.303*** (0.109)	-0.347*** (0.117)	-0.115 (0.071)			
BRI-coal funds				-1.013*** (0.350)	-1.172** (0.462)	-0.109 (0.277)
GDP	1.343** (0.604)	1.866*** (0.708)	1.007*** (0.356)	0.968* (0.540)	1.440** (0.688)	0.822** (0.323)
GDP/capita	0.352*** (0.110)	0.746*** (0.166)	-0.015 (0.058)	0.342*** (0.120)	0.734*** (0.166)	-0.012 (0.066)

	(1)	(2)	(3)	(4)	(5)	(6)
	EPI	EPI-Health	ΔEPI	EPI	EPI-Health	ΔEPI
Debt/GDP	0.022 (0.018)	0.049 (0.033)	-0.009 (0.017)	0.024 (0.018)	0.0518 (0.031)	-0.007 (0.016)
World Bank LPI	1.511 (2.845)	0.286 (3.536)	-1.625 (1.837)	2.155 (2.834)	1.029 (3.450)	-1.552 (1.881)
Government effectiveness	6.578*** (1.344)	10.32*** (1.945)	1.579 (0.995)	6.506*** (1.347)	10.23*** (1.969)	1.595 (0.998)
ΔWorld Bank commitments	0.486 (1.457)	1.296 (1.852)	0.324 (0.643)	0.484 (1.402)	1.291 (1.783)	0.487 (0.672)
<i>Countries</i>	123	123	122	123	123	122

*Note: Robust standard errors are reported in parentheses; \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01*

Furthermore, the analysis in table 5 investigates the potential determinants of the locations of BRI projects, energy projects, and coal power projects. The results show that the amount of BRI funding received is positively related to the national level of infrastructure development, suggesting that countries most in need of infrastructure investments may not be those most likely to secure funds from the BRI. Additionally, the amount of BRI funds does not significantly relate to national economic development (GDP/capita). Instead, countries with lower performance in public policy formulation and implementation and environmental sustainability appear to receive more BRI funds in energy and coal power projects.

**Table 5. BRI Projects and Governance**

	(1)	(2)	(3)
	BRI	BRI-Energy	BRI-Coal
World Bank LPI	9.040*** (2.942)	3.289** (1.485)	1.293** (0.582)
GDP/capita	0.074 (0.097)	-0.004 (0.024)	-0.008 (0.008)
Government effectiveness	-2.723*** (1.004)	-1.380** (0.551)	-0.242** (0.118)
EPI	-0.232** (0.112)	-0.066 (0.044)	-0.032** (0.015)
<i>Countries</i>	145	145	145

*Note: Robust standard errors are reported in parentheses; \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01*

## 5. Discussion and Conclusion

Based on the empirical results above, there are six points that are worthy of further discussion. First, if one includes China's BRI as an alternative source of development finance for Asian countries, then after China's state-owned agencies started bankrolling BRI countries in 2013, the level of competition in development finance declined. The market moved toward a concentrated structure nearly dominated by the BRI, with all other financiers competing with the BRI. As a result, the BRI has become powerful enough to change the development finance pattern of other IFIs. After the AIIB emerged in 2016, the market became slightly more competitive, although the situation can still be characterized as China initiatives vs. the rest of the IFIs. If one combines the BRI and the AIIB, the market has become even more concentrated since 2013, giving China a dominant market standing. Consequently, traditional IFIs have raised their vigilance vis-à-vis China's uncertain next move in the field of regional development finance. In this context, we can interpret why the World Bank relaxed its environmental and social safeguard policy in 2016. Rather than resulting from more intensive competition, the negative impact on the part of the World Bank is more likely a result of its fear of China's monopolizing the development finance market, rather than an environmental race to the bottom.

Second, there is no evidence to suggest that the ADB has suffered a lowering of environmental and social safeguard standards for their funding projects in the face of the emergence of the BRI and AIIB. Instead, the evidence presented in this paper shows that the ADB has responded to the changed market structure by increasing its infrastructure investments. Furthermore, the average level of environmental and social safeguards in ADB projects has remained unchanged since 2015 and has even slightly improved. In contrast to the World Bank, the ADB has taken a different approach to this challenge.

Third, if the role of the BRI is excluded, the emergence of the AIIB has only marginally increased the level of IFI competition and does not appear to have triggered an environmental race-to-the-bottom effect. Instead, the AIIB has acted as a co-financing partner with major IFIs and signed a cooperation memorandum with other IFIs. Up until the end of 2020, the AIIB had followed the environmental safeguards established under international best practices while co-financing infrastructure projects with its partners. Therefore, there is no substantial evidence suggesting that the establishment

of the AIIB has resulted in an environmental race to the bottom.

Fourth, after conducting a series of statistical tests, no strong evidence was found to support that the World Bank's dilution of best practices has country-specific variation. This phenomenon appears to be universal, applying to all countries receiving World Bank funding. Thus, countries not participating in the BRI and the AIIB have experienced the same environmental degradation in World Bank projects as those joining the BRI or the AIIB. This finding suggests that while the BRI may have introduced a negative impact, it is not a BRI-specific effect. It is possible that if another grand plan for infrastructure financing initiated by other countries were to emerge soon, the World Bank might react in the same way and adjust its standards for all financing destinations.

Fifth, the BRI's worldwide massive investments in coal power projects may pose a potential challenge to global sustainability. Although other IFIs have not directly competed with the BRI in coal projects, some have been involved indirectly. Statistical evidence strongly supports that countries receiving more BRI funds as a whole or BRI coal project investments have low national sustainability levels, inferior public governance quality, and a weaker capability of protecting people from environmental health risks. If these countries continue to receive BRI coal project investments not easily available elsewhere or if China with its BRI does not intend to force these fund-recipient countries to implement higher environmental and governance standards, global environmental protection will not improve, leaving the world with significant sustainability challenges.

In the face of mounting diplomatic pressure to discontinue funding for coal-based infrastructure projects overseas and support the objectives of the Paris Climate Agreement to curb carbon emissions, Chinese leader Xi Jinping announced during his speech at the United Nations General Assembly in September 2021 that China would refrain from initiating any new coal-fired power projects abroad (Brant, 2021). According to data from CGIT, as of 2022, China has financed only one coal power project associated with the BRI in Indonesia. This marks a significant reduction from the average of ten coal projects supported by China through the BRI from 2015 to 2020. These developments suggest that China has attempted to address the criticisms directed towards its BRI policy. Nevertheless, the sustainability of China's commitment and the possibility of financing coal power projects through other official or private channels remain uncertain.

Last, in terms of environmental impact, the BRI and the AIIB differ significantly. The former may have caused adverse effects on global sustainability, whereas the latter has not. This difference can be attributed to their divergent policy goals, operations, and governance systems. The BRI not only focuses on infrastructure development in the region but also serves Beijing's multiple geopolitical and geoeconomic objectives that promote China's strategic interests. Its primary financing arms are China's state-owned policy banks and enterprises, which are not subject to external monitoring mechanisms. The BRI projects are facilitated in a state-centric manner, as China implements a state-centric approach with geopolitical ambitions and recipient countries' state-directed public-private partnerships. This could lead to inefficient resource allocation and political bias, compromising appropriate resource and risk management (Liu and Lim, 2022). Additionally, environmental and social sustainability may be compromised in favour of political objectives.

Furthermore, the BRI is sustained by the Chinese government and independent of external interference. These factors have provided the BRI with greater flexibility in adhering to established international best practices in infrastructure project financing. On the other hand, the institutional design of the AIIB has limited China's role. Although Beijing remains the most powerful player in the AIIB, the bank is subject to supervision by sovereign shareholders. In addition, the AIIB must follow established best practices to secure cooperation opportunities with other IFIs. Many of these practices concerning global sustainability originate from Western countries. Much of the AIIB's senior leadership and staff comes from major IFIs and incorporates best practices into the AIIB's investments. As a result, the AIIB, at least thus far, has become an essential complementary financing institution for infrastructure development rather than a trigger for a race to the bottom in environmental standards.

In conclusion, this paper does not find enough evidence to support the criticism that China's BRI and AIIB will result in global environmental degradation. At most, the emergence of the BRI may trigger a vicious cycle of increased investments in coal power projects, which could have an adverse impact on global sustainability in the energy sector. However, the solution to this problem may not rely solely on China's efforts; it also requires HICs and more advanced technology to offer affordable power generation alternatives in LMICs countries. Additionally, the participating

countries need to optimise the benefits and reduce the hazards associated with the BRI projects (Rana and Ji, 2020). If the costs of using renewable energy decrease, the demand for coal power options will decrease, and as a result, the BRI's coal investments will be less attractive in LMICs. If infrastructure projects cannot be both affordable and environmentally sustainable for LMICs, then even if China's BRI exits the market, another supplier is likely to emerge. Consequently, established IFIs, such as the World Bank, would face the same challenge and might make subsequent adjustments to their environmental and social safeguards that move away from international best practices. Rather than criticizing the BRI, it is more crucial to encourage further cooperation between HICs and LMICs in initiating affordable and sustainable global development strategies.

## Notes

1. The World Bank project data is available at <https://datacatalog.worldbank.org/dataset/world-bank-projects-operations> (accessed on 21 July 2021); ADB data is available at <https://www.adb.org/projects> (accessed on 20 July 2021); AIIB data is available at <https://www.aiib.org/en/projects/list/index.html> (accessed on 20 June 2021); EBRD data is available at <https://www.ebrd.com/news/publications/annual-report/annual-review-2020.htm> (accessed on 22 July 2021).
2. Please refer to footnote 1 for data sources.
3. The data can be accessed online via <https://www.aiib.org/en/about-aiib/governance/members-of-bank/index.html> (accessed on 20 June 2021).
4. Please refer to footnote 1 for data sources.
5. The calculation is the same as the widely used effective number of political parties. For example, an HHI of 0.25 for four competitors means that each competitor controls roughly the same 25% market share. The inverse of 0.25 is 4, which suggests that all four of them are effective competitors in the market.
6. The EPI comprises three dimensions: climate change performance, environmental health, and ecosystem vitality. Given the focus of this study, the dimension of environmental health is the most relevant



index. It is worth noting that the EPI is highly correlated with the dimensions of climate change performance and ecosystem vitality; hence, it can be used as a proxy for the other two dimensions.

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## **China-Malaysia Relations as a Campaign Strategy: The BN Prime Ministers' Understanding of China and the Ethnic Chinese**

Soon Thean Bee\*

Universiti Tunku Abdul Rahman, Malaysia

### **Abstract**

During the administration of the Barisan Nasional in Malaysia, three Prime Ministers, namely Abdul Razak, Mahathir Mohamad and Najib Razak, strategically incorporated the China factor to attract the support of the Chinese voters in their respective election campaigns. These campaigns took place in 1974, 1999, and 2013. It appeared that the Prime Ministers perceived a preference among the Chinese community for China, despite the Chinese were born in Malaysia or had been granted Malaysian citizenship. Thus, Razak, Mahathir and Najib's understanding of China and Chinese voters played a crucial role in shaping their decision to employ diplomatic relations as a campaign strategy.

**Keywords:** *Malaysia-China Relations, Elections, Chinese*

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\* Soon Thean Bee attained a PhD in Political Science at the National Taiwan University. She is an assistant professor in the Department of Mass Communication in Tunku Abdul Rahman, Malaysia. This journal article is a chapter from the writer's PhD dissertation. The title of the dissertation was "*Ma Lai Xi Ya Shou Xiang Dui Zhong Guo Ji Hua Ren Xuan Min De Shen Fen Ren Zhi: Zuo Wei Xuan Ju Ce Lue De Ma Zhong Guan Xi* (Understanding China and Chinese Voters' Identities in the Eyes of Malaysian Prime Ministers: Sino-Malaysian Relations as Campaign Strategy)". She can be reached at [tbsoon@yahoo.com](mailto:tbsoon@yahoo.com), [soontb@utar.edu.my](mailto:soontb@utar.edu.my).

## 1. Introduction

The Barisan Nasional (BN) had been in power since the independence of Malaysia in 1957 until it lost its first general election in 2018. BN had held 14 general elections throughout these 61 years. Three of these elections were held within three months after the friendly interaction of Malaysian high-ranking officers with China. The elections were the 1974 election during the administration of Abdul Razak, the 1999 election during the administration of Mahathir Mohammad, and the 2013 election during the administration of Najib Razak. The purpose of these Prime Ministers was obvious. They aimed to attract support from the Chinese<sup>1</sup> community. Yet, it is worth highlighting that this strategy was the Prime Ministers' last resort because national interest always took precedence.

Bilateral relations between Malaysia and China had been seen as cordial after the 1990s despite territorial disputes over the South China Sea. Both countries had managed to set aside their differences and collaborated for mutual benefit. However, during the initial 17 years following the formation of Malaya/Malaysia, the country posed a hostile attitude toward China. This was partly due to Malaya/Malaysia's adoption of a pro-western foreign policy during the Cold War and the presence of domestic communist threats. Beginning in 1948, the Communist Party of Malaya (CPM), an overseas branch of the Chinese Communist Party (CPC) with most of its members being Chinese, launched numerous armed struggles in Malaysia with the aim to establish a communist Malayan People's Republic (O'Ballance, 1966). Even though the Alliance, BN predecessor had led Malaysia to gain independence from the British, CPM never ceased fighting. Tunku Abdul Rahman, the first Prime Minister of Malaysia, therefore refused to establish diplomatic relations with China even though Zhou Enlai, the Premier of China extended his goodwill in 1957 (*Nanyang Siang Pau*, 1957a; 1957b). According to Baginda (2016), Malaya perceived China as an enemy at this stage.

During the second half of the 1960s, the British planned to gradually reduce their garrison in Malaysia and Singapore and eventually complete a full withdrawal by the mid-1970s to reduce their defence expenditure (*The Straits Times*, 1966; 1967). This news came as a shock to Malaysia, as the country had heavily relied on the British military for its defence since gaining independence. The Tunku did not hide his despair and openly stated that the government would surrender if a major power, such as China, were to attack the country. He said:

*It is just impossible to defend (ourselves against aggression from a big power) .....it is not that I foresee any such danger from China but if we cannot fight, we might as well give up to avoid unnecessary destruction of life and property.*

*If Communist China wants to attack us, all the communists here will support her while the others will just sit on the fence. (The Straits Times, 1968).*

In the midst of losing British defence support and against the backdrop of the Cold War, Malaysia made a strategic shift in its foreign policy, transitioning from pro-Western to neutrality and non-alignment. Malaysia began establishing diplomatic relations with communist countries such as Yugoslavia, Romania, Hungary, North Korea, and finally China on May 31, 1974. Yet, Baginda (2016) indicated that BN had an additional motive for formalizing relations with China, which was to gain the support of Chinese voters who considered China as their ancestral country in the upcoming election. The BN leaders aimed to capitalize on the enthusiasm of the Chinese electorates, who were pleased with the newly established relations. Therefore, the general election needed to be held before their enthusiasm subsided. Consequently, BN conducted the general election on September 14, 1974, which was 83 days after Razak left China on June 2, 1974. Approximately 20 to 30 years later, Mahathir and Najib followed in Razak's footsteps by incorporating the China factor in the 1999 and 2013 general elections during their respective administrations. In 1999, Mahathir invited Chinese Premier Zhu Rongji to visit Malaysia from August 20 to August 27, and the election took place on November 29, 1999 (*Nanyang Siang Pau*, 1999). During Zhu Rongji's visit, he and Mahathir jointly witnessed the signing of the Memorandum of Understanding for the reopening of the "Bank of China," which Chinese businessmen had urged the Malaysian government to reopen for seven years. As for Najib (2009-2018), he jointly presided over the opening ceremony for the Malaysia-China Kuantan Industrial Park (MCKIP) with Jia Qinglin, the chairman of the Chinese People's Political Consultative Conference (CPCPP) on February 5, 2013. According to Cai Xi, the former Chinese ambassador to Malaysia, the date of the opening ceremony was deliberately fixed before the Chinese New Year. BN instructed its members to utilize the establishment of MCKIP to enhance the impression of friendly relations between BN and China within the



Chinese society when they participated in the Chinese New Year celebrations (*Guang Ming Daily*, 2013). BN later conducted the general election on May 5, 88 days after the opening ceremony.

When analyzing the historical context of these elections, the Prime Ministers desperately required support from not only the Malays, the largest population in the country but also from the Chinese, the second-largest population to secure a two-thirds majority and their party leadership. By strategically employing China's influence as a campaigning tool, it was obvious that even though the Chinese were born in Malaysia or held Malaysian citizenship, the Prime Ministers always perceived that they had a preference for China over Malaysia. The main objective of this paper is to examine the approaches that Razak, Mahathir, and Najib adopted to understand China and Chinese. Given that this paper is intended to study from the perspective of the Prime Ministers, it does not explore how the Chinese identified themselves, or how they viewed the Prime Ministers and the BN government. This paper employs content analysis as a research methodology and gathers secondary data from journal articles, book chapters, newspaper articles, and an opened ended interview. This paper is divided into four parts. The first part introduces the background of the three elections. The second part discusses the theoretical framework adopted in this paper. The third part analyses the formation of the perspective of the Prime Ministers on China and Chinese identity. The final part is the conclusion.

## **2. The Three Elections and the Visits of the High-Ranking Officers from Both Countries**

After the establishment of diplomatic relations between Malaysia and China in 1974, high-ranking officers from both countries frequently visited each other. Razak visited China once (1974) during his administration; Mahathir five times (1985, 1993, 1994, 1996, 1999 and 2001); Abdullah Ahmad Badawi, the fifth Prime Minister, twice (2004 and 2006); and Najib seven times (2009, 2011, 2012, 2014, 2015, 2016 and 2017) (Table 1). In contrast, Zhao Ziyang, the third Premier of China, visited Malaysia once (1981); Li Peng, the fourth Premier, twice (1990 and 1997); Yang Shangkun, the fourth President, once (1992); Jiang Zemin, the fifth President, three times (1993, 1997 and 1998); Zhu Rongji, the fifth Premier, once (1999), Wen Jiabao, the sixth Premier, twice (2005 and 2011); Hu Jintao, the sixth President, once

(2009); Xi Jinping, the seventh president, once (2013); and Li Keqiang, the seventh premier, once (2015). (Table 2).

**Table 1. The Timeline of the Prime Ministers of Malaysia's Visit to China**

Year	Name
1979	Hussein Onn
1985	
1993	
1994	Mahathir Mohamad
1996	
1999	
2001	
2004	Abdullah Ahmad Badawi
2006	
2009	
2011	
2012	
2014	Najib Razak
2015	
2016	
2017	

*Source: Compiled by Author from Newspapers Coverage*

**Table 2. The Timeline of the Presidents and Premiers of China's Visit to Malaysia**

Year	Name and Designation
1981	Premier Zhao Ziyang
1990	Premier Li Peng
1992	President Yang Shangkun
1993	President Jiang Zemin
1997	Premier Li Peng
1997	President Jiang Zemin
1998	President Jiang Zemin
1999	Premier Zhu Rongji
2005	Premier Wen Jiabao
2009	President Hu Jintao
2011	Premier Wen Jiabao
2013	Jia Qinglin (Chairman of the National Committee of the Chinese People's Political Consultative Conference)

*Source: Compiled by Author from Newspapers Coverage*

When comparing the dates of the visits with the Malaysia general elections, most of the interactions between the two countries high-ranking officers occurred almost more than six months before the general elections. Only three exceptions: Razak's China trip and the 1974 general election; Zhu Rongji's Malaysia trip and the 1999 election; and Jia Qinglin's Malaysia trip and the 2013 election. The 1974 general election was held on August 24, 1974, 83 days after Razak had left China, while the 1999 general election was held on November 29, 1999, 3 days after Zhu Rongji had left Malaysia. The visit of Jia Qinglin, chairman of the National Committee of the Chinese People's Political Consultative Conference to Malaysia was noteworthy (Table 3). Even though Jia Qinglin's position was lower than that of the President and Premier of China, it suited the model, particularly because Malaysia was sending the invitation to Wen Jiabao rather than Jia Qinglin. Cai Xi pointed out that Wen Jiabao had to send Jia Qinglin because China was scheduled to convene the National People's Congress the following month (*Guang Ming Daily*, 2013). Given that Wen Jiabao was the premier of the country, it is understandable that he was unable to leave the country during that time.

**Table 3. Malaysia and China High-Ranking Officers' Nearest Interaction Before Elections**

Administration	Election Date	Malaysia High-Ranking Officers to China	Date of the Visit	China High-Ranking Officers to Malaysia	Date of the Visit	Days before election
Tunku Abdul Rahman	19.08.1959	-	-	-	-	-
	25.04.1964	-	-	-	-	-
	10.05.1969	-	-	-	-	-
Abdul Razak	24.08.1974	Prime Minister Abdul Razak	28.05.1974 to 02.06.1974	-	-	83
Hussein Oon	08.07.1978	-	-	-	-	-
Mahathir Mohammad	22.04.1982	-	-	Premier Zhao Ziyang	09.08.1981	256
	03.08.1986	Prime Minister Mahathir Mohammad	20.11.1985 to 27.11.1985	-	-	249
	25.04.1995	-	-	President Jiang Zemin	10.11.1994	166
	29.11.1999	=	=	Premier Zhu Rongji	22.11.1999 to 26.11.1999	3

Administration	Election Date	Malaysia High-Ranking Officers to China	Date of the Visit	China High-Ranking Officers to Malaysia	Date of the Visit	Days before election
Abdullah Badawi	08.03.2008	Prime Minister Abdullah Badawi	29.10.2006 to 31.10.2006	-	-	494
Najib Razak	05.05.2013	-	-	*Chairman of the National Committee of the Chinese People's Political Consultative Conference Jia Qinglin	04.02.2013 to 06.02.2013	88
	19.05.2018	Prime Minister Najib Razak	12.05.2017 to 16.05.2017	-	-	733

Source: Compiled by Author from Newspapers Coverage

The use of China's influence by the BN Prime Ministers to secure support from Chinese voters was not mere speculation, but rather a proven fact. After a decade out of office, Abdullah Badawi acknowledged that the BN government intended to influence the 1974 election through the establishment of Malaysia-China relations. Michael Chen Wing Sum, the former vice president of the Malaysian Chinese Association (MCA) and one of the individuals who played important roles in facilitating the Malaysia-China diplomatic relations, expressed a similar sentiment. They recalled that Razak was scheduled to visit China in the spring of 1974 under the pretext of normalizing relations. Following Razak's return from China, an opinion poll had to conduct within one to two months to gauge public sentiment before the general elections. The BN political elites believed that by shifting the country's foreign policy towards China from being adversarial to cordial, they could gain the approval of the Chinese community who still held strong connections with China as their ancestral homeland and secure the Chinese support in the election. Although the establishment did not occur until the summer, the plan remained unchanged (Baginda, 2016). The 1974 general election took place 83 days after Razak's return from China. It marked the best result the BN government had ever achieved, garnering 60.7% of the popular votes and winning 135 parliamentary seats out of 154.

The MCA, which was responsible for capturing Chinese support, won 19 seats, a significant increase of 6 seats from the previous election. This was a resounding triumph for the BN government. It was not surprising that Razak's successors adopted this strategy when they needed Chinese votes to secure their election victories.

The following paragraph provides an overview of the background of the 1974, 1999, and 2013 elections and explores the factors that prompted the Prime Ministers to consider leveraging China's influence as their final option to secure Chinese support in these elections.

### *The 1974 General Election*

The May-13 tragedy, an ethnic riot between the Malays and the Chinese that occurred in 1969, cast a shadow over the Chinese community. The National Operations Council (1969) revealed in a report that the death toll was 196, and the number of injured was 439. The Chinese were the largest victim of this incident; with 143 fatalities and 270 injuries. The National Operations Council (1969) pointed out that the reasons for this ethnic clash were: 1. different interpretations of certain provisions of the Constitution, principally Articles 152 and 153 which related to the Malay language and the position of Malays among the Malays and immigrant races; 2. Certain politicians and supporters' disrespectful language and insulting behaviours after the 1969 general election sparked the conflict, and 3. CPM and secret societies exacerbated the existing tension between Malays and Chinese. Additionally, according to Brown (2005), Razak believed that the economic disparity, with the Chinese being wealthier than the Malays, also contributed to the May 13 Tragedy. In 1970, the national family poverty rate in West Malaysia was 49.3%, of which 65.9% were Malay families and 27.5% were Chinese families; among the shareholdings of limited companies, Malays only had 2.4% and Chinese 27.2% (Gomez, E.T. and Jomo, K.S., 1997).

After Razak assumed office as the Prime Minister of Malaysia in September 1971, he made significant efforts to reassure the Malays that the government would protect their future survival and well-being in their own country. He led the Parliament in amending the constitution to prohibit any form of open discussion on the special rights of the Malays, the official status of the Malay language, the status of the Malay ruler, and any other sensitive ethnic issue pertaining to ethnic relations (Cheah, 2002). Later, he introduced the "New Economy Policy" aimed at eradicating poverty in the

country, but it predominantly benefited the Malays in practice. These policies pleased the Malays while infuriating the Chinese (Faaland, Parkinson & Saniman, 1991). The 1974 general election held great significance for Razak as it marked his first election as the Prime Minister. He had to regain the government's two-thirds majority in parliament, which it had lost in the 1969 election, in order to validate his leadership. This mission could only be accomplished by gaining support from both Malays and Chinese voters. Therefore, establishing diplomatic relations with China became the most cost-effective strategy that would satisfy the Chinese but would not provide a substantial benefit to them. This would also prevent the recently appeased Malay population from becoming agitated.

### ***The 1999 General Election***

In the first 8 years of Mahathir's tenure, Malaysia and China only maintained limited interactions because CPM was still presumably a threat to Malaysia. It was only when the CPM announced its dissolution on December 2, 1989, did Malaysia's suspicion of China reduced and began to develop closer ties with China. Collaboration with China in terms of trade help Malaysia to reduce its dependence on Western countries to prevent a recurrence of the mid-1980s economic downturn. In addition, Mahathir also had the tendency to utilize China to organize an East Asian regional organization to counter the West, especially the United States.

Despite the fact that Malaysia had recovered from the effects of the Asian financial crisis by 1999 (Felker, 2000), BN lost its popularity among Malays after Mahathir's sacking of Deputy Prime Minister Anwar Ibrahim on September 2, 1998. Anwar was charged with ten counts of criminal activity, including disclosing state secrets, corruption, and unnatural sex (Chin, 2010). Anwar, the blue-eyed boy of Malay society, immediately gathered tens of thousands of Malays to initiate the "Reformasi" movement and condemn Mahathir for corruption, cronyism, and nepotism (Weiss, 2000). The police later arrested him under the Internal Security Act, which permitted detention without prosecution. Wan Azizah Wan Ismail, wife of Anwar, later founded the Parti Keadilan Nasional and allied with the Parti Islam Se-Malaysia and the People's Action Party, to jointly challenge the ruling BN in the upcoming election (Cheah, 2002; Felker, 2000).

In comparison to Malay society, Chinese society displayed a largely indifferent attitude (*Kwong Wah Yit Poh*, 1999). The majority of Chinese

individuals viewed the “Anwar Incident” and the “Reformasi” as primarily Malay issues and held that it would be best for the Chinese to refrain from interfering (Chin, 2000). This response from the Chinese community could be attributed to 1987 when Anwar served as the Minister of Education and was involved in the Vernacular Chinese Primary School Incident.<sup>2</sup> In addition, Anwar’s indirect involvement in the Operation Lalang crackdown later deepened the Chinese community’s grievances. Prominent Chinese intellectuals, Chinese opposition politicians, and students were among the more than 100 people arrested, and the publishing licenses of three newspapers, *The Star*, *Sin Chew Daily*, and *Watan*, were revoked. The incident, although occurred 10 years ago, left a lasting impact on the Chinese community, and their resentment towards Anwar remained. Giving the Malay votes broadly divided, Chinese electorates became crucial for Mahathir to retain his power.

### **2013**

Najib Razak led the 2013 election for the first time since he was sworn in as Prime Minister in April, 2009. His predecessor Abdullah Badawi was forced to step down after he failed to maintain a two-thirds majority in the 2008 election. BN lost approximately 50% of Chinese ballots compared to the 2004 election (Case, 2014). Najib needed Chinese votes to regain a two-thirds majority to establish he was the party’s legitimate leader. Before the 2013 election, Najib actively engaged in Chinese societal activities and sought to make an impression on the Chinese community. He visited Chinatown in Kuala Lumpur to demonstrate his willingness to connect with the local Chinese population. He even participated in two events that previous Prime Ministers never attended, which were the annual dinner of the Chinese independent high school and participating in the Chinese New Year gathering organized by the United Chinese School Committees Association (Chin, 2010). These gestures held great significance for Chinese society, showcasing Najib’s commitment to engaging with their community and addressing their concerns.

Najib introduced the concept of “1Malaysia: People-First, Performance Now” within a month of assuming office. He promised that no eligible nationals would be excluded from receiving state subsidies. Singh (2010) interpreted “1Malaysia” as intended to replace the differences between ethnic groups and religions in Malaysia with performance as the goal of

national governance. Five months later, to attract foreign investment and enhance Malaysia's competitiveness in the global economy, Najib announced that the government would reduce economic intervention. He amended the restriction in the 1971 New Economy Policy, reducing the requirement for bumiputra equity in public listed companies from 30% to 12.5%. In addition, the requirement for bumiputra equity ownership in 27 areas, such as tourism, transportation, and medicine would be eliminated (*Malaysiakini*, 2009; *Guang Ming Daily*, 2009).

These policies initially pleased the Chinese community, but Malay extremists eventually weakened them. Some members of UMNO instilled a great deal of fear among non-Malays. As Pakatan Harapan, the opposition coalition, gained large-scale popularity among urban Malays, UMNO candidates shifted their attention to rural or semi-rural areas to manipulate rural Malays' emotions by generating their animosity towards urban Malays and Chinese. They conveyed to local Malays that UMNO's purpose was to protect the power of "Malays First" while accusing greedy and untrustworthy urban Malays of joining Chinese forces to threaten Malay privileges. To demonstrate UMNO's concern for the Malays, the party distributed grocery coupons, rice subsidies, and 1Malaysia People's Aid (BR1M) via the government. UMNO's campaign strategy successfully consolidated the support of non-urban Malays and won back some urban middle-class Malays who had defected to Pakatan Rakyat, the predecessor of Pakatan Harapan, in 2008 (Case, 2014). In another incident, Ibrahim Ali, the chairman of PERKASA and a former member of UNMO, accused the Chinese of being greedy, urged the Chinese to spare the Malays, distributing white envelopes to the Chinese during Chinese New Year<sup>3</sup> and urged the burning of the Bible<sup>4</sup> (*Sin Chew Daily*, 2010; *Malaysiakini*, 2012, 2013). Furthermore, the Bersih 2.0 and Bersih 3.0 demonstrations which accused the government of engaging in electoral misconduct successfully attracted tens of thousands of Chinese individuals to participate. As a result, Najib's popularity among the Chinese plummeted. In December 2009, Najib's approval rating was 54% but by December 2012, it had declined to 34% while it remained around 77% among the Malays and Indians (Merdeka Centre, 2013).

### 3. The Post-Chineseness

Wang Gungwu (2002) remarked that the study of *Chineseness* among overseas Chinese had historically intertwined with China. It involved



exploring the memories of overseas Chinese towards China and how those memories shape their identity, encompassing factors such as biological origin, culture, and tradition. However, the notion of *Chineseness* was inevitably influenced by local culture, social structures, legal constraints, and political systems. As a result, the manifestation of *Chineseness* in each country was distinct yet recognizable. Both Wang Gungwu (2002) and Gu Hongting (1994) argued that overseas Chinese could not and should not be rigidly classified as a homogeneous group. Shih (2018a) further asserted that the meaning of *Chineseness* also varies based on interactive dynamics. Even individuals without Chinese heritage, if they possessed certain aspects of *Chineseness* and strategically exhibited it in the presence of objects who self-identified and had commonly recognized as having *Chineseness*, those objects would acknowledge their *Chineseness*. For instance, if an Indian Sinology professor demonstrated his proficiency in Chinese calligraphy to an individual commonly perceived as Chinese, this individual would recognize and appreciate the Indian Sinology professor's *Chineseness*. This illustrated the fluidity, contextualized, and individualized nature of *Chineseness*. Building upon this observation, Shih (2018a) introduced the concept of *Post-Chineseness* to better comprehend this phenomenon.

The concept of *Post-Chineseness* emerged with the perspective that, while it was derived from *Chineseness*, it rejected the notion of a fixed and predetermined meaning of *Chineseness* and what it meant to be Chinese. Moreover, *Post-Chineseness* argued that *Chineseness* could be cultivated through cultural and political means and strategically exhibited to achieve individual objectives (Shih, 2018b). In short, one's ancestor came from China or not no longer a determining factor. Anybody could possess *Chineseness* as long as they were willing to learn or to be assimilated. Shih (2017) further divided *Chineseness* into six categories:

1. *Cultural Chineseness*: Engaging in cultural or religious practices that are commonly associated with Chinese traditions, such as following Confucian principles and participating in ancestor worship.
2. *Experiential Chineseness*: Having had prolonged interactions with self-identified Chinese groups, acquiring the ability to mimic their preferences and behaviours, yet not fully grasping the essence of *Chineseness*.
3. *Sinological Chineseness*: Possessing the capacity to communicate

and elucidate cultural beliefs and differences between Chinese and non-Chinese groups, as a result of studying and researching various aspects of Chinese culture.

4. *Ethnic Chineseness*: Constantly being examined by both the non-Chinese society where they resided and by the China society. Consequently, they developed an ability to adapt and adjust to accommodate different expectations from both sides.
5. *Civilizational Chineseness*: Not identifying oneself as “Chinese” and lacking empirical knowledge of *Chineseness*. Using one’s civilization as a standard to distinguish similarities and differences between oneself and “Chinese”, to demonize or romanticize “Chinese”.
6. *Scientific Chineseness*: Not identifying oneself as “Chinese”. Systematically distinguishing others’ *Chineseness* using objective criteria, such as citizenship, class identity, kinship, and other universal standards.

In summary, the *Post-Chineseness* suggested that the interpretation of *Chineseness* was determined by the interaction of different combinations (Shih, 2018b). As such, *Chineseness* could have diverse compositions and carry different meanings. Even individuals without Chinese ancestry could acquire elements of *Chineseness* through political engagement or cultural assimilation. When one strategically demonstrated the *Chineseness* to the objects that were self-identify or widely recognized as possessing *Chineseness*, the objects might develop a sense of approval and satisfy the purpose of the individual. In this vein, Shih proposed that *Chineseness* was a kind of “imagined identity” that was reaffirmed through the political dynamics’ difference.

#### 4. The Post-Chineseness of Razak, Mahathir and Najib

There is no doubt that Razak, Mahathir, and Najib’s self-identification were Malay. Three of them had no public record of having learnt Chinese culture or lived and studied in China as well. Based on the classification of *Post-Chineseness*, they fell into the category of either *Scientific Chineseness* or *Civilizational Chineseness*. To recap, *Civilized Chineseness* referred to distinguishing the similarities and differences between oneself and the Chinese using subjective civilization standards and ideologies to demonize or romanticize others. *Scientific Chineseness* defined *Chineseness* according

to certain common or universal standards such as sovereign territory, kinship, skin colour, language, citizenship, etc. In short, *Civilized Chineseness* was a subjective understanding of *Chineseness*, whereas *Scientific Chineseness* was an objective understanding (Shih, 2017; 2018a).

### **Razak**

After assuming the position of Prime Minister in 1970, Razak actively pursued the establishment of diplomatic ties with China (Jeshurun, 2009). He believed that a neutral foreign policy was necessary for Southeast Asian nations, including Malaysia, to remain outside the scope of the Cold War between the United States and the Soviet Union (*Nanyang Siang Pau*, 1970). Razak believed that by establishing formal relations with China, China would no longer support or assist the CMP. Consequently, the threat posed by the CPM would be eliminated. This logical assumption did not require an in-depth comprehension of China, and it could be applied to any small country caught in the power struggle between the two superpowers. As such, China in Razak's view was a specific object that was defined by international relations, geography, demography, social structure, and government policy. Razak's understanding of China was the *Scientific Chineseness*. Sadly, after the establishment of diplomatic relations between Malaysia and China, not only did China refuse to cut ties with the CMP, but also attacks by the CMP in Malaysia increased. Due to these factors, the relations between Malaysia and China became estranged. It was obvious that Razak viewed China and the CPM as a single organism with a shared ideology. Hence, since CPM was a threat to the security of Malaysia, so did China.

Razak's also used *Scientific Chineseness* to view the Chinese. Given the ethnic Chinese ancestral ties to China, Razak assumed that the Chinese would inherently hold pro-China views due to their bloodline and genetic influences. This presumption did not require a comprehensive understanding of China and the Chinese; in fact, many leaders of a country with a diverse immigrant population shared the same viewpoint.

### **Mahathir**

Mahathir exhibited two distinct forms of *Post-Chineseness*. Despite China being a communist country when the CPM was disbanded in 1989, Mahathir began developing closer ties with China compared to the pre-1989 era.

As the threat from China was less direct geographically than that of the CPM, Mahathir objectively evaluated China from a standpoint of national interests and recognized China as a vast market with potential for business opportunities. Mahathir possessed a *Scientific Chineseness* in this case. In addition, Mahathir also sought China as an ally that shared Asian values to stand together in opposition to the spread of Western liberalism. It was these perspectives that played significant roles in furthering bilateral relations between the two countries. Mahathir's understanding of China in this context needed familiarity with China's historical culture, indicating his *Post-Chineseness* took on a civilizational perspective. Mahathir's *Post-Chineseness* towards the Chinese community can be characterized as *Scientific Chineseness*, similar to Razak's approach. In emulating Razak's election strategy, it was obvious that he also perceived a deep and inseparable connection between the Chinese community and China could not be easily severed. Hence, Mahathir recognized the importance of engaging with China before the general election to garner support from the Chinese community.

### *Najib*

Malaysia-China relations during Najib involved historical connection and personal sentiments. Wen Jiabao once told the Malaysian Chinese press that Malaysia had rendered China two enormous favours: 1) Malaysia was the first ASEAN country to establish diplomatic relations with China, and 2) Malaysia proposed dialogues between China and ASEAN during the Mahathir administration, thereby facilitating the cooperation between the two parties. If Malaysia required assistance, China would assist in return (*Sin Chew Daily*, 2011). Najib was the son of Razak and the protégé of Mahathir. His relations with Razak and Mahathir made China willing to accommodate his requests as long as they did not compromise the national interest of China. Cai Xi indicated that the establishment of the Malaysia-China Kuantan Industrial Park (MCKIP) and the scheduling of its opening ceremony was in response to Najib's specific requests (*Sin Chew Daily*, 2012; *Guang Ming Daily*, 2013). Najib made use of the debt China owed to his predecessors, employing cultural norms of reciprocity and gratitude shared by both Chinese and Malays. His *Post-Chineseness* to China, therefore, was *Civilizational Chineseness*.

Najib shared the same *Post-Chineseness* as Razak and Mahathir when viewing the Chinese. Najib overlooked the fact that the Chinese electorate of the twenty-first century had evolved, along with their views on China and Malaysia. His adherence to a *Scientific Chineseness* viewpoint limited his understanding of the changing dynamics. As a result, Najib failed to connect with the Chinese voters, leading to a significant loss of support from this community.

## 5. Conclusion

Based on the above analysis, the Prime Ministers' *Post-Chineseness* towards China was not static and was influenced by different factors, including the national power, civilization and their long relations with China. Razak's initial approach to establishing formal relations with China was driven by a *Scientific Chineseness* perspective, which aimed to navigate the complex dynamics against the backdrop of the Cold War. However, when China did not withdraw support for the CPM, Razak shifted towards a *Civilizational Chineseness* standpoint and maintained a certain distance from China. Mahathir inherited Razak's *Civilizational Chineseness* in the first 8 years of his administration. With the dissolution of the CPM, Mahathir's *Post-Chineseness* shifted to *Scientific Chineseness* and developed business cooperation with China. However, when Mahathir sought an ally to align with Asian values to counter Western liberalism, his *Post-Chineseness* towards China reverted to *Civilizational Chineseness* in this incident.

Najib's *Post-Chineseness*, meanwhile, was on *Civilizational Chineseness* for his interaction with China, such as urging China of setting up the MCKIP was driven by emotional and historical appeals rather than purely objective calculation. In contrast, Razak, Mahathir and Najib's *Post-Chineseness* toward the Chinese were static, primarily adopting *Scientific Chineseness*. They perceived the Malaysian Chinese had a preference for China over Malaysia because of the ancestral ties between the Chinese and China. This paper would like to emphasize that the flow of Malaysian Chinese votes in the above elections was influenced by various factors with the China factor being one that cannot be ignored. While it was not the sole determinant, it does reflect the perspective of the Prime Ministers on Malaysia-China and Chinese-China relations.

## Notes

1. In this article, the term “Chinese” refers to the Chinese population in Malaysia unless otherwise specified.
2. The government’s decision to appoint non-Mandarin-speaking teachers to senior administrative positions, including the principal, in Chinese primary schools raised concerns within the Chinese community. This move was perceived as a potential threat to the preservation of their Chinese identity, as the working language of these schools was Mandarin. The appointment of non-Mandarin-speaking teachers could have led to a change in the working language of the Chinese primary schools, possibly to Malay or English. The community interpreted this appointment as a deliberate attempt to undermine the essence of Chinese primary schools.
3. White envelopes generally given out at the funeral in Chinese culture.
4. Ibrahim Ali believed that the Malay version of the Bible was specially printed by people with ulterior motives to preach to Malays. According to Article 160 of the Malaysian Constitution, those who call themselves or are called Malays must be Muslims, and it is illegal to propagate teachings other than Islam to Malays. However, the religious language of the aborigines in East Malaysia was mostly Malay, and the existence of the Malay version of the Bible was basically printed for the needs of the aborigines in East Malaysia. Ibrahim Ali called for the burning of the Malay Bible insulted the Christians. Chinese Christian made up approximately 11% of Malaysia population.

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## **Chinese Development Aid and Finance: Effective Soft Power Tool or Public Diplomacy Liability? A Spatial Study of Project Influence**

Benjamin Toettoe\*

Department of Political Science, University of Montreal

### **Abstract**

China has risen to become a significant donor of foreign aid and assistance in recent years. As with other major donors, such economic flows in the provenance of China are tied to the latter's strategic aims. Specifically, the use of economic outlays as a tool of soft power and public diplomacy has been identified as a key motivation in Chinese disbursement decisions. However, studies examining the empirical success of Chinese foreign aid and assistance in acting as such have, so far, come to diverging conclusions. This study offers an investigation of the spatially diffused effects of infrastructure project sites tied to Chinese funding sources on local public opinion in Ecuador, a country that offers an interesting case showcasing the effects of the unfolding great power competition on local public opinion. We find, that controlling for socio-economic and ideological individual characteristics holding the potential to affect survey respondents' views on China, project influence is significantly and negatively correlated with levels of trust in the Chinese government. These results suggest that the frequently mediatized negative local spillover effects of Chinese-funded or financed infrastructure projects make it unlikely for China's foreign aid and assistance to achieve

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\* Benjamin Toettoe is a Ph.D. candidate in Political Science at the University of Montreal and a Research Fellow at Central European Institute of Asian Studies (CEIAS). His research lies in the field of International Relations and focuses on the effects of economic flows from China on foreign policy orientations in recipient states. Some of his recent research projects, which were published in journals such as the Canadian Foreign Policy Journal, have specifically examined the effects of projects funded through the Belt and Road Initiative on local public opinion, and the sources of domestic actors' foreign policy preferences on questions related to China. He can be reached at < benjamin.toettoe@umontreal.ca >.

its envisioned purpose of furthering the country's soft power and positive image beyond its borders.

**Keywords:** *Belt and Road Initiative, China, Foreign Aid, Foreign Assistance, Soft Power*

## 1. Introduction

Foreign aid and development finance have long been used as strategic tools by issuing countries. Beyond humanitarian and economic objectives, strategic considerations such as alliance-building, elite rapprochement, and soft power expansion have been central to decisions on the issuance and distribution of such forms of assistance. Public diplomacy has become an important tool for great powers seeking to further their influence abroad. As a result of their potentially positive impacts on the lives of local populations and the often-high visibility of officially sponsored aid and investment projects in recipient countries, such ventures have become key tools of public diplomacy for countries seeking to expand influence and soft power around the world.

China has, in recent years, become a particularly important player in this regard. Since the domestic adoption of its Belt and Road Initiative in 2013, the country has become one of the world's largest development financiers, surpassing the World Bank in terms of lending in all years from 2013 to 2017, despite a decline in its commitments since then (Ray & Simmons, 2021). While the type of projects funded, the actors involved on the Chinese side, and the dynamics surrounding financing agreements exhibit significant heterogeneity, strategic motivations such as the desire to promote a positive image of China abroad have been recognized as motivators behind the Belt and Road Initiative and associated initiatives.

This has raised significant international concern in today's context defined by growing hegemonic competition between China and the United States. Due to the lack of political conditionality attached to Chinese development finance, its potential of providing authoritarian governments shunned by traditional lenders a financial escape line has been highlighted by many. The lack of transparency surrounding Chinese development finance has also been argued to be problematic, with the possibility of recipient countries' elites capturing the benefits of the project while putting in place

economically self-interested political alliances with China. Finally, concerns related to levels of indebtedness, employment dynamics, and environmental concerns tied to BRI projects have become contentious political issues in many recipient countries.

Despite the burgeoning literature on the question in recent years, the effectiveness of Chinese development finance as a tool of public diplomacy remains little understood given the rising political importance of the issue. Studies on the question have indeed come to varying conclusions, with significant heterogeneity having been found based on the region and precise type of flow being considered (Wellner et al., 2022). Different methodological approaches to studying the above topic have also yielded conflicting conclusions. To adopt a positioning in such a debate, this article espouses the view that, despite parallel concerns related to elite capture, economic dependence, and socio-environmental shortcomings in recipient states, the effects of development finance on public opinion represent a key determinant of the success of such projects in the medium to long term. In a global environment showcasing deteriorating views on China among most national populations, political leaders in all but the most autocratic countries will likely perceive public opinion as a constraint on their embrace of both present and future projects funded by China should such projects be negatively perceived by local populations. In many states, such constraints have already motivated the cancellation of previously pledged Chinese-financed projects. As a result, the medium and long-term success of the BRI in terms of both geopolitical and economic objectives hinges strongly on a positive perception of projects associated with it by local populations.

This article contributes to the understanding of the effects of projects tied to Chinese foreign aid and developmental finance on the perception of China among populations of recipient countries. Adopting a quantitative methodology and using a spatial dataset of geo-localized Chinese-financed development projects and AmericasBarometer surveys conducted by the Latin American Public Opinion Project (LAPOP), it examines the impact of proximity to project sites on voters' trust in the Chinese government in Ecuador, a country having received among the largest financing inflows from China in Latin America in recent years. As a country holding no consistently strong levels of foreign alignment with either the United States or China but having been actively courted by the two (Jepson, 2022), Ecuador represents an interesting case of the effectiveness of Chinese development finance in the

context of the increasing rivalry between the two great powers. After having controlled for various political typologies and demographic characteristics which could play a part in shaping voter stances on such questions, we find a negative effect of geographical proximity to project sites on individuals' trust in China. These findings contribute to the increasing body of literature investigating the effectiveness of China's development finance as a tool of public diplomacy both by narrowing on a national case noteworthy in the salience of the great-power rivalry unfolding within its borders, and by offering a new methodological approach to investigating the effects of the above flows on the perceptions of China held by local citizens.

## **2. Foreign Assistance as a Strategic Tool of Influence**

Scholars have long argued for the existence of a strategic dimension to decisions related to foreign aid and investment allocation by issuing states. While a humanitarian and developmental logic behind such decisions is recognized, the recognition of such outlays as a foreign policy tool has increased since the latter half of the 20th century (Bandyopahyay & Vermmann, 2013). Many studies have investigated causal relationships responsible for the allocations of foreign aid and have quantitatively demonstrated the role played by strategic geopolitical considerations (Canavire et. al., 2006; Kaufmann & Wang, 1995).

The strategic effects of foreign aid and developmental finance can be divided into two distinct categories. First, such outlays can directly influence foreign policy decisions made by the leaders of recipient countries in ways that benefit the interests of the issuing state. Links between increased voting alignment in international organizations between the recipient and issuing countries have been illustrated by existing literature (Kuziemko & Weker, 2006; Lai & Morey, 2006; Griffin, 2004). Beyond purely political realms, foreign aid and development finance have also been shown to be linked to more favorable economic policies in recipient countries from the perspective of issuing states (Younas, 2008; Bandyopahyay & Vermmann, 2013). Secondly, flows of foreign aid and developmental assistance can also lead to better perceptions of the issuing state among recipient populations, indirectly leading to increased influence by the former (Blair et. al., 2022; Alexander, 2018). This is closely tied to the concept of soft power developed by Nye (2004), and increasingly playing a part in foreign policy formulations. Several studies have furthermore identified concrete mechanisms through

which populations in recipient countries gain exposure to donor-funded projects. Blair et al. (2019), for example, argue such groups can become exposed to such projects either by being their direct beneficiaries or by indirectly gaining knowledge about them through media or word of mouth. They will then develop positive or negative views about the involved donor based on their assessment of the quality of aid provided and the procedural fairness through which it was distributed (Blair et al., 2019). While the literature on this type of indirect influence remains nascent, it is clear that both direct influence over government officials and benefits obtained through public diplomacy play an important role in strategic considerations tied to the allocation of foreign aid and development finance.

### **3. Characteristics and Aims of Chinese Foreign Aid and Developmental Finance**

With the growth of its economic power since the beginning of the 21st century, and particularly since the inception of the BRI in 2013, China has emerged as one of the largest providers of foreign aid and development finance (Ray & Simmons, 2021). The categorization of Chinese foreign economic flows tied to international assistance into categories of aid, assistance, finance, and investment is notoriously difficult (Ang, 2019). Authors such as Rudyak & Chen (2021) have, in recent years, categorized China's outlays in the above category as comprised mainly of foreign aid loans made up of zero-interest or concessional loans, non-foreign aid official loans handed out mainly by the Chinese Eximbank and China Development Bank, and commercial loans given by private banking institutions. Many BRI agreements contain a mixture of different types of assistance. This article will focus its analysis on the former two categories. While it is recognized that this definition excludes the significant portion of Chinese economic outlays made up of commercial loans and Foreign Direct Investment by state-owned or private firms, such portion is difficult to capture by existing data sources due to the complexity of disentangling commercial and political motivations lying behind them. In addition, such loans are usually not publicized as being tied to China to the same extent as foreign aid loans and non-foreign aid official loans, which would limit the ability of local populations to identify them as tied to their issuer. In addition, this article has made the conscious decision to omit funding stemming from the Asian Infrastructure Investment Bank (AIIB) from its

scope. While it is true that such funding has helped support BRI projects, the AIIB's nature of being a multilateral development bank makes it problematic to study it in line with China's sovereign development lending. While China possesses the biggest share and voting power in the institution, it cannot be assumed that funding emitted by it is tied to China's political considerations to the same extent as sovereign lending over which the country has full authority. Finally, the AIIB has, so far, been little involved in Ecuador, the country of interest to this analysis. While a \$50 million credit line was approved in 2022, it was tied to Covid-19 relief efforts and does not constitute a site-specific project, making it inadequate for inclusion in the article's quantitative analysis for reasons outlined in the sections below.

Chinese development finance differs considerably from traditional forms of development assistance provided through the OECD's Development Assistance Committee (DAC) frameworks (Rudyak & Chen, 2021). One significant difference lies in the absence of political conditionality in the terms of Chinese aid and development finance agreements. Assistance provided through DAC frameworks indeed commonly attempts to influence the behavior of recipient regimes by making itself conditional on the adoption of practices deemed democratic or respectful of human rights. In contrast, in line with its long-standing statement of support for the principle of non-interference in the domestic affairs of sovereign states, China has long emphasized that its assistance does not include such formal requirements (China State Council Information Office, 2014). However, the formal absence of conditionality in Chinese assistance agreements does not mean that the country's assistance is unconditional on political considerations (Dreher & Fuchs, 2015). Indeed, the allocation of Chinese development finance is strongly tied to the recipient country's stance on the One China Principle, with the use of Chinese labor and technology in funded projects also oftentimes required (Santino & Regilme, 2021). Chinese *de facto* conditions on the provision of international assistance hence hinge on more narrow definitions of Chinese self-interest but leave more leeway to recipient states relative to Western sources on issues or behavior falling outside of such scope. In addition, the concessionality considered to be an inherent component of DAC aid provisions is often not included in flows categorized by China as development finance (Dreher et al., 2022). From the above, a picture emerges in which Chinese aid is no less bound by political considerations than those issued by competing powers, and it is motivated

by different categories of behavior and issues over which the donor seeks influence.

While often portraying the BRI and its provisions of international assistance as an illustration of mutually beneficial cooperation between developing states, several strategic dimensions can be tied to Chinese foreign aid and development finance. Chinese scholars have sometimes argued that China's aid is motivated by factors stretching beyond national interests (Wang, 2015). However, many authors have identified strategic interests lying between the country's decisions on where and how to allocate foreign assistance (Holt, 2020). Especially, in the Indo-Pacific region, China has primarily been seeking to ensure its security in terms of state, economy, and regime (Holt, 2020). Beyond this region, desires to increase the country's international influence have also been identified as motivators (Wei, 2019). Tied into the traditionally strong emphasis among China's leaders to promote a positive image of China abroad, Chinese international assistance has also been argued to hold the expansion of the country's soft power as a primary motivator (Tursanyi & Kachlikova, 2020). In short, Chinese assistance can be considered similarly motivated and defined by self-interest as that stemming from alternative sources. Among its motivations, assurances of security and the promotion of both geopolitical influence and soft power can be identified as primary motivations.

#### **4. Public Responses to Chinese International Assistance**

If considering the strategic considerations behind Chinese assistance outlined above, public attitudes towards China in recipient countries are key to the success of initiatives such as the BRI from China's perspective. Public animosity towards China and, more specifically, opposition to Chinese economic involvement among recipient countries' populations indeed has the potential to derail the strategic objectives motivating Chinese international assistance. Despite its obvious negative effects on China's soft power, such negative public opinion could constrain the political choices of leaders and make adherence to new Chinese foreign aid and development projects politically unviable. While we expect such effect to be the strongest in democratic regimes, it will likely play a partial effect on determining governmental stances towards China in all but the most totalitarian regimes. The above constraints on leaders would threaten China's other strategic objectives tied to international assistance by limiting its hard influence



abroad and limiting the dependence of other states on it. It becomes clear that most of the Chinese strategic objectives tied to the BRI, and the provision of development finance more generally, depend on relatively positive perceptions from recipient populations.

Research examining the effects of Chinese development finance on recipient populations' attitudes has significantly expanded since the mid-2010s. However, no consistent theoretical or methodological paradigm has emerged providing consensus on how to effectively approach the study of such a relationship. As a result, existing studies have largely devised approaches deemed appropriate for the specific bounds of their analyses, whether in terms of geography or assistance type. Such studies have adopted widely different methodologies in instrumentalizing populations' exposure to Chinese-funded development aid and assistance and have yielded highly diverging results. While overall public opinion on China has worsened substantially since 2016 and can now be described as strongly unfavorable in most regions, significant regional variations remain (Silver & Huang, 2021), with Latin America standing out in terms of having the most positive perceptions (Armony & Velasquez 2016). Eichenauer et al. (2018) find that when instrumentalizing China's aid flows by their lagged national totals, such flows have no significant overall impact on the country's image throughout the region. However, effects were found to vary based on respondents' age, wealth, and educational status. In Peru, Ratigan (2021) finds weak evidence of a slightly negative effect of Chinese extractive projects, including ones undertaken on a commercial basis, on local perceptions of the country when instrumentalizing exposure through residence in the region in which the project takes place. Blair et al.'s (2022) study of same question in Africa, undertaken by comparing the differences in opinion of the population living within 30 kilometers of the sites of projects funded by Chinese aid and those living further afield, concludes that Chinese aid has no, and sometimes negative effects, on affinity for China. Also in Africa, and when employing a similar instrumentalization of exposure to aid flows, Chen & Han (2021) conclude that interactive effects between Chinese aid projects and recipient populations' party affiliation in shaping their opinion of the donor. Positive images of the donor were found to depend on whether individuals were affiliated with the party in power nationally, as such elites were likely to divert some of the benefits from funded projects for private gains (Chen & Han, 2021). Examinations of BRI approval in Europe

were largely conducted based on media analysis and focused on perceptions of overall foreign aid and development finance programs divorced from the impact of concrete projects tied to it, (Gaspers & Lang, 2016; Turscanyi et al., 2019). From the above review, it becomes clear that existing studies investigating the effectiveness of Chinese aid flows as a tool of public diplomacy employ a large array of methodological approaches and have, so far, not arrived at a unified conclusion, with results varying vastly based on the region and population being considered as well as the approach being used to instrumentalize such population's exposure to the economic flows of interest. Given the importance of determining the future success or failure of Chinese initiatives such as the BRI, further research investigating the effects of Chinese international assistance projects on perceptions of China among recipient populations is crucial. Through this article, we hope to contribute to such understanding by focusing on a country representing a battleground in the US-China competition for global influence and by employing a novel methodology aimed at measuring populations' exposure to specific aid sites more accurately.

## **5. Chinese foreign aid and development finance in Ecuador**

For our analysis, Ecuador was chosen as the subject of the study. Ecuador has been one of the Latin American countries seeing large inflows of Chinese foreign aid and development finance in recent years. Indeed, according to Ray et al. (2023), it has received the third most such inflows in the region since 2012, surpassed only by Venezuela and Brazil in such a measure. This fact is especially noteworthy given the small size of Ecuador's economy relative to other regional states such as Argentina and Brazil. Furthermore, unlike some of the other countries exhibiting the above characteristic such as, for example, Cuba or Venezuela, Ecuador cannot be said to possess any kind of consistent and solid geopolitical alignment with China. Instead, the country has been actively courted by both China and the United States, with its foreign policy depending largely on the composition of the government in power (Jepson, 2022). On one hand, Ecuador stands as one of only two in the region to have become a full member of the Asian Infrastructure Investment Bank and a signatory to the BRI (Lang, 2021). Under the leftist administration of Rafael Correa, who came to power in 2007, Ecuador signed agreements leading to a total debt of \$8.1 billion to China in the period going from 2008 and 2016 (Palma, 2021), with a large majority

of such flows tied to the China Development Bank and the China Export-Import Bank. Much of what is owed is due in the form of discounted oil sales (Palma, 2021). During the above period, economic interdependence between the two countries grew rapidly, with trade (mainly in seafood, copper ore, and crude petroleum) reaching historically record amounts by the late 2010s (Monni & Serafini, 2017). The largest development assistance projects in China include the \$1.7 billion Coca-Codo Sinclair hydroelectric dam and the \$570 million Sopaladora hydroelectric dam, both of which were financed by the China Export-Import Bank. As illustrated, the largest share of these flows is tied to the country's power generation infrastructure. During the tenure of the Correa administration, Ecuador also distanced itself from the US on geopolitical issues. Illustratively, Correa forced the closure of the only US military base in the country in 2009, calling it an affront to national sovereignty (Mercopress, 2009). However, the latter's economic dependence on China combined with record levels of indebtedness has since emerged as a concern. Following the ascendance to power of center-right president Guillermo Lasso in 2021, the Ecuadorian government has once again sought to make the country attractive to traditional investors and has aligned closely with the US on international issues such as the war in Ukraine. Following concerns related to dependence on and indebtedness to China, Lasso has also argued for the need to renegotiate Ecuador's debt with the latter, opening the door to a potential shift in relations. In the Fall of 2021, the US announced plans to invest in significant projects in the country in an attempt to offer an alternative to the BRI (Hunnicut, 2021). Developments in the country will hence likely serve as an interesting case study of the dynamics surrounding the effects of the emerging great-power competition on developing states. Central to the question is the public opinion surrounding the issue. While a strong partisan divide has consistently existed on questions of foreign policy alignment in Ecuador and has remained constant during the respective Correa and Lasso administrations, specifically understanding the effects of exposure to Chinese-funded infrastructure projects on local respondents of diverse ideological orientations remains a crucial area of inquiry.

In addition to its relevance as a case study of the effectiveness of foreign aid in an environment of great-power rivalry, the choice to focus on Ecuador yields several methodological advantages. Firstly, the small size of administrative cantons in the country allows for the relatively precise geolocalization of individual survey respondents, which represents a crucial

requirement of our modeling approach, as will be outlined in the sections below. The country has also seen the development of enough project sites tied to Chinese aid and investment to provide the basis for a statistically meaningful study. No comprehensive empirical work has so far investigated the links between the many Chinese foreign aid and development finance projects in Ecuador and the opinions of its citizens on questions related to China. This article will undertake such a task, in an attempt to both provide clarity on the future geopolitical alignment of the country and to contribute to the growing understanding of the effectiveness of foreign aid and development finance as a tool of public diplomacy in the context of great power competition.

## **6. Hypotheses**

Using public opinion data measuring respondents' trust in the Chinese government, we will uncover the different factors that affect responses to such questions among Ecuadorians. This question provides an adequate tool for assessing the overall perception of China and its actions among the country's citizens. Numerous scholars have indeed highlighted the importance of political trust as a key component of legitimacy (Turper & Aarts, 2015). Voters are also likely to assign more trust to governments seen as acting in their interests or along personally approved lines.

As our primary aim relates to assessing the effects of Chinese foreign aid and development finance on public opinion of the country among Ecuadorean citizens, our first hypothesis posits the impacts of projects funded by such development assistance on individuals' appraisal of the Chinese government. While not all foreign aid and development finance provided by China to Ecuador is tied to specific projects, with some for example disbursed in the form of discretionary grants to firms such as Petro Ecuador (Ray et al., 2021), this analysis will focus only on flows tied to geo-localizable infrastructure projects. We contend that such projects are indeed likely to hold the largest influence over public opinion as a result of their observable impact on populations and a usually high degree of mediatization, especially in the case of residents of nearby regions. This is further true as a result of the large-scale and politicized nature of most of the included projects. Half of them are indeed tied to hydroelectric dam projects, with the others representing highway, thermoelectric, wind farm, and knowledge city projects. The analysis will furthermore be restricted to

projects funded by the two main vehicles of China's official developmental assistance, the China Development Bank and the China Export-Import Bank. According to Rudyak & Chen (2021), these two bodies are responsible for the vast majority of China's foreign aid loans and non-foreign aid official loans, the two categories on which this article chose to focus for the reasons outlined above. While the exact breakdown of Chinese development aid and finance by source varies significantly from year to year, the above two organizations have been shown to account for about 80% of China's total outflows in recent years (Chen, 2020). In addition to being the largest two providers of foreign aid and development finance to Ecuador, projects funded by these organisms tend to be large, highly visible, and explicitly tied to the Chinese state goals. Unlike in the case of some previous studies on the topic (see Ratigan, 2021), investments made by Chinese State-Owned Enterprises are excluded from the analysis, as they typically receive less political and media attention and may not always be easily attributed to actions of the Chinese state by survey respondents. In addition, while funding provided through China's development banks typically results from highly political motives, both strategic and economic interests likely play a role in shaping SOE investments, making them imperfect vehicles to assess the potential of the country's development assistance in meeting its geopolitical objectives. While the exclusion of these projects could lead to omitted variable bias in our model if their location was spatially correlated with included project sites, we find this to be highly unlikely. Indeed, much of China's commercial FDI in the country has been tied to extractive industries (Gonzalez-Vincente, 2013), while included projects mostly consist of energy generation ones. Because of the different geographic bases of the two sectors, we assess it to be implausible for China's commercial FDI in the region to be tied to the sites of projects funded through its foreign aid and development assistance. To assess the potential of Chinese foreign aid and development finance to meet its self-proclaimed aims as a strategic tool of influence abroad, we hypothesize that residents living closer to projects funded by Chinese foreign aid and development finance hold the same degree of trust in the Chinese government that those living further away from project sites. This hypothesis will be falsified if the potential of Chinese foreign aid and development finance as a tool of public diplomacy and a vector of soft power expansion is realized, or if negative effects of foreign aid and development finance on local public opinion are demonstrated.

Null Hypothesis 1: Ecuadorians residing close to projects funded by Chinese foreign aid and development finance hold the same degree of trust in the Chinese Government as those residing further away.

## 7. Data and Measurement

The study bases itself on AmericasBarometer surveys conducted in Ecuador by the Latin America Public Opinion Project (LAPOP) and includes the previous 3 waves of the survey (2014, 2017, 2019) in its analyses. While data from previous waves were available, a decision was made not to use it as a result of the quickly evolving nature of global public opinion regarding China in recent years. Evaluations of China have indeed turned significantly more negative in countries around the world (Silver & Huang, 2021) since the mid-2010s, with evidence also pointing to changes in population-based dynamics shaping individuals' appraisal of the country in many countries throughout the world. As a result, we believe that including data from survey waves before 2014 would risk reducing the applicability of the findings to the current reality of the Chinese global provision of foreign aid and development finance.

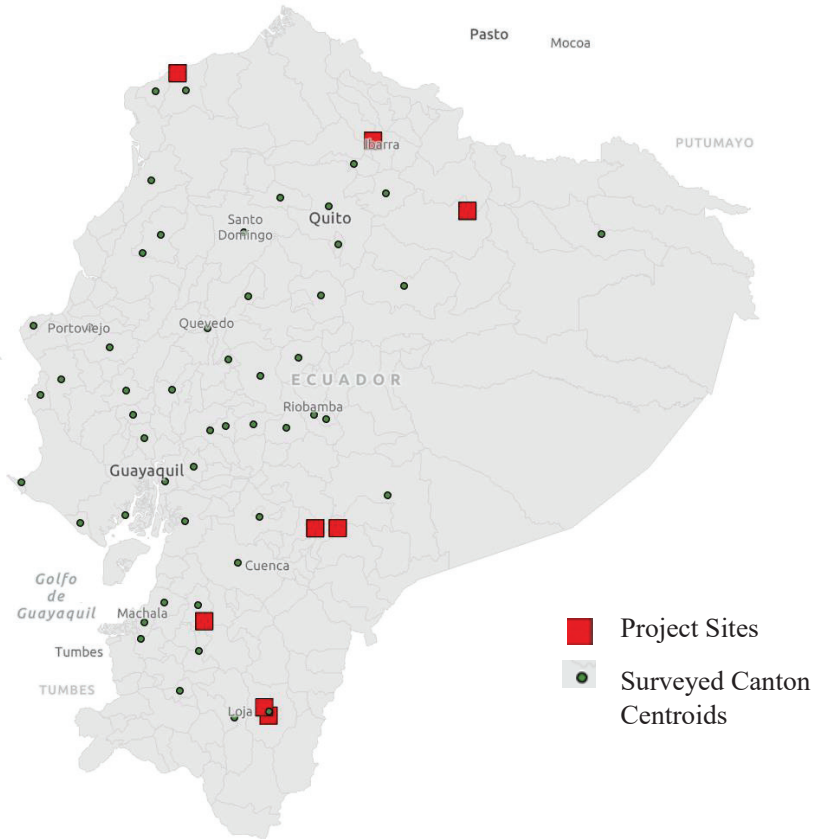
The main survey question used to assess individuals' favorability towards China for the dependent variable is phrased as "In your opinion, is the government of China very trustworthy, somewhat trustworthy, not very trustworthy, not at all trustworthy, or no opinion?" in all three waves of the survey included in the analysis. A decision was made to convert the 4-point Likert scale resulting from this question into a binary variable taking the value of 1 for the answers "very trustworthy" and "somewhat trustworthy", and a value of 0 for the answers "not very trustworthy" and "not at all trustworthy". This was decided on the basis that foreign relations, and trust in the Chinese government more specifically, likely represents an issue of low salience for a vast majority of the population who possess relatively little knowledge on the issue. As a result, we believe that the distinction in views between those expressing general trust or mistrust in China holds more empirical relevance than consideration of differing expressed degrees of trust or mistrust. This reality is likely further strengthened as a result of the political polarization and highly binary views on the question prevalent on the Ecuadorian political scene.

Exposure to projects funded by Chinese development assistance was measured through the distance of each respondent to sites of projects funded

by Chinese foreign aid and development finance. As mentioned earlier, such projects were limited to those tied to formal official finance provided by China's main two providers of such funding, the China Development Bank and the China Export-Import Bank. Furthermore, funding not geographically tied to specific project locations was excluded. Locations and characteristics of projects fitting the above characteristics were obtained from Ray et al. (2021). An exposure variable was then calculated based on a postulated linear relationship between the distance from a project and the resulting exposure to it. It was further assumed that proximity to projects involving a larger amount of Chinese finance led to a higher degree of exposure, as such projects typically receive more publicity and diffuse more benefits locally. The exposure resulting from any given project was hence assumed to take on the total dollar amount of Chinese foreign aid and development finance disbursed to such project at its exact location and to decrease linearly as distance from the project increases, before reaching a value of 0 at a distance of 100km from the project. This distance represents our assumption of the distance at which individuals' opinions are no longer significantly affected by proximity to project sites. It was obtained using previous research examining the effects of spatial proximity to political events on the formulation of political opinions in the United States (Wallace et al., 2014), and adjusting such estimates based on road network quality and resulting transit times using data from the World Economic Forum (2019). The localization of survey respondents was done based on the "Municipio" variable included in all three waves of the LAPOP survey used. This represents the lowest level of geographic identifier used in the survey, with a resulting classification of respondents into one of 221 Ecuadorian cantons. As the precise location of respondents within their canton remained unknown, all were assigned to the centroid of the polygon representing the canton in question. The value of the above-described exposure variable at such centroids was then obtained and applied to all survey respondents assigned to the centroid in question. It is important to note that the exposure of individuals does not necessarily stem from only one project. Often, the final exposure score assigned to a respondent represents the sum of exposure scores from several projects, each within a 100km radius of them. The location of the infrastructure sites tied to Chinese foreign aid and development finance included in the research, as well as the centroids of cantons containing surveyed individuals in relevant waves of LAPOP are

shown in Figure 1. Summary statistics of the resulting exposure variable, “Project Influence”, are shown below in Table 1.

**Figure 1. Chinese-financed sites (Red) and Surveyed Canton Centroids in Ecuador (Green)**



We believe that the above approach to representing exposure from projects tied to Chinese foreign aid and development finance represents a significant methodological improvement compared to previous studies having been undertaken on the question. In much of the past literature, exposure has indeed been represented with a binary variable taking a value of 0 if the respondent is located outside of a certain national political subdivision or beyond a certain distance from a project site, and a value



of 1 if they are located within it (Ratigan, 2021; Chen & Han, 2021; Blair et al., 2022). This does not account for the fact that, even within such subdivisions, which are often geographically expansive, individuals residing near project sites likely incur significantly higher exposure than ones residing at a significant distance from them. Neither does it allow for the consideration of the combined effects of distance and the magnitude of Chinese disbursement in influencing local populations' exposure to Chinese foreign aid and development finance, leading to the effects of larger projects tied to larger financing being unrealistically represented as similar to those linked to less significant ones. The method used in this paper instead offers a more realistic assessment, based on both distances from a project and such project's magnitude, of the varying exposure of local populations to site-specific Chinese foreign aid and development finance. This approach also allows for a more targeted consideration of influence effects tied to specific project sites compared to methods employed in some past studies that measured variations in national total disbursements over time (see Eichenauer et al., 2018). It is recognized that one limitation of our approach lies in that influence scores for respondents located very close to project sites might be distorted, as the impact of such sites on individuals likely decreases at a greater rate in their immediate proximity, likely at distances below five kilometers. This is however unlikely to alter results since none of the canton centroids fell within such a short distance of project sites.

In attempting to control for the role of ideological and socio-economic characteristics in affecting individuals' favorability towards China, several additional variables from the LAPOP survey were used. To measure respondents' income, the question asking, "In which of the following ranges does the monthly income of your family fall, including remissions from abroad and the income of all the adults and children working?" was used. The resulting variable is categorical, with 16 possible income ranges included, in addition to the "Do not know" and "Do not wish to answer" options. To measure respondents' educational attainment, a question asking, "What was the ultimate year of education that you completed?" was used. Responses are once again categorical, with 19 possible levels of educational attainment in addition to "Do not know" and "Do not wish to answer" options. Finally, to measure the extent to which favorability towards the United States is tied to lower favorability towards China, a question asking about respondents' level of trust towards the United States

government was used. This question was phrased as “In your opinion, is the government of the United States very trustworthy, somewhat trustworthy, not very trustworthy, not at all trustworthy, or no opinion?”. Responses were categorized on a 4-point Likert scale including the answers “very trustworthy”, “somewhat trustworthy”, “not very trustworthy” and “not at all trustworthy”. All of the above survey questions did not vary in wording or terms of response scales between included survey waves.

Variables controlling individual characteristics were also included in the model. A gender variable was included, which took the value of 1 if the respondent was male and a value of 2 if they were female. An age variable taking the age of the respondent in years as its value was also included. Personal ideology was also controlled through the inclusion of a question asking respondents to rank themselves on a scale ranging from 0 signifying “left” and 10 signifying “right” in terms of political vision. A satisfaction variable was also included, asking the extent to which a respondent is satisfied with the state of democracy in their country. Responses to this question consist of a four-point Likert scale containing the options “Very Satisfied”, “Satisfied”, “Unsatisfied” and “Very Unsatisfied”. Finally, the degree of respondents’ interest in politics was also controlled through the inclusion of a question asking, “How much interest do you hold in politics: A lot, some, little, or none?”. In addition to such four categories, “Do not know” and “Do not wish to answer” options were included in possible responses. Summary statistics for all included variables are included in Table 1.

**Table 1. Summary Statistics of Included Variables**

Variable	Obs	Mean	Std. Dev.	Min	Max
Trust in China	2,340	2.516667	.872444	1	4
Project Influence	4,567	90.26086	167.863	0	731
Gender	4,558	1.502633	.5000479	1	2
Age	4,551	38.73259	16.39708	16	96
Political Orientation	4,008	5.343812	2.572834	1	10
Educational attainment	4,511	11.1953	3.982805	0	18
Satisfaction with Democracy	4,388	2.500912	.7586589	1	4
Interest in Politics	4,558	2.879772	.9399474	1	4
Income	4,245	7.697527	4.824332	0	16

## 8. Estimation

As a result of the binary nature of the dependent variable measuring individuals' trust in the Chinese government, a logistic regression strategy was adopted. Our primary explanatory variable consists of our instrumentalization of the influence of nearby projects funded by Chinese foreign aid and development finance. A set of demographic control variables including age and gender was also included. The formal equation of the adopted model is shown in Equation 1.

### Equation 1: Model Regression Equation

$$\ln\left(\frac{P(Y_i = 1 | X_i)}{1 - P(Y_i = 1 | X_i)}\right) = \beta_0 + \beta_1 Project\_Influence_i + \beta_2 Income_i + \beta_3 Education_i + \beta_4 Trust\_In\_US_i + \beta_5 \gamma_i$$

In the above equation,  $Y_i = 1$  refers to an outcome where an individual expresses trust in the Chinese government and  $X_i$  to a vector including the measured characteristics of each individual  $i$ . Control variables tied to individual socio-economic, demographic and ideological characteristics are included in the form of a row vector  $\gamma_i$ , with  $\beta_5$  representing the corresponding column vector of effect coefficients.

## 9. Results

Odds Ratios derived from the estimation of the above model on a final sample of just over 2,300 observations are shown in Table 1. Independent variables were added over several model iterations to test the robustness of the coefficients of interest. In addition, one model iteration (Model 7) was included for the same reason despite heteroskedastic model residuals not representing a violation of unbiased regression assumptions in logistic regression. The direction of the effects demonstrated by our model, as well as the significance of such effects, was found to be highly robust across model iterations, providing a high degree of confidence that they represent meaningful empirical findings.

Regression output was not separated by survey wave for several reasons. While the overall public opinion of China has decreased significantly over the period for which data is included, with the dependent variable experiencing a decrease from 0.57 out of 1 in 2014 to 0.46 in 2019, no

evidence seems to imply that the effects of the different independent variables included in our study would experience meaningful changes in either direction or magnitude. In addition, the 2019 wave of the survey contains significantly fewer observations than ones conducted in previous waves. As a result of our wish to preserve a sufficient sample size for all years, the decision to pool data from the three waves was made. Finally, while projects included in the analysis were signed before the conduction of the first wave in 2014, their influence over respondents can be argued to be occurring throughout all the waves. However, their stage of planning or construction might differ between such waves. As a result of the fact that we do not distinguish between the influence of such projects in planning, construction, and completed phases, the decision to pool the available data allows for differences between such types of influence to be smoothed out. We believe that this strategy allows us to best capture the average effects of the projects over their planning, construction, and recent post-completion phases. It also likely helps exclude small shocks tied to the above phases. For example, it is likely that certain periods during large infrastructure projects' construction lead to outsized local disruption which could temporarily affect residents' assessments of them. However, this analysis does not aim to capture such temporary effects tied to project implementation. We however acknowledge that expanding the understanding of how the influence of projects on public opinion varies across the above phases remains a welcome area of future research.

**Table 2. Logistic Model Regression Results**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>	<b>Model 5</b>	<b>Model 6</b>	<b>Model 6</b>
Influence	0.999*** (0.001)	0.999*** (0.001)	0.999*** (0.000)	0.999*** (0.000)	0.999** (0.029)	0.999** (0.027)	0.999** (0.030)
Gender	0.765*** (0.001)	0.757*** (0.002)	0.736*** (0.001)	0.749*** (0.002)	0.778** (0.013)	0.786** (0.021)	0.786** (0.021)
Age	0.989*** (0.000)	0.991*** (0.002)	0.993** (0.018)	0.993** (0.019)	0.993** (0.045)	0.994* (0.073)	0.994* (0.075)
Income		1.013 (0.181)	1.013 (0.231)	1.012 (0.256)	1.018 (0.107)	1.019 (0.105)	1.019 (0.105)
Eudcation		1.032** (0.015)	1.023* (0.097)	1.018 (0.202)	1.015 (0.309)	1.027* (0.077)	1.027* (0.076)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 6
Trust in US			0.715*** (0.000)	0.720*** (0.000)	0.718*** (0.000)	0.703*** (0.000)	0.703*** (0.000)
Political Interest				0.854*** (0.002)	0.865*** (0.007)	0.866*** (0.009)	0.866*** (0.009)
Ideology					0.945*** (0.004)	0.943*** (0.003)	0.943*** (0.004)
Satisfaction with Democracy						0.671*** (0.000)	0.671*** (0.000)
N	2335	2157	1958	1958	1738	1689	1689
Standard Errors Robust	Standard	Standard	Standard	Standard	Standard	Standard	Standard

*Exponentiated coefficients; p-values in parentheses*

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Our discussion of results will focus on Model 6, which represents the model iteration containing all independent variables. To refute Null Hypothesis 1, we would need to establish that individuals influenced by projects funded through Chinese development assistance programs hold either significantly less or significantly more trust in the Chinese government than those less influenced. Our model finds significant evidence that the influence of projects financed by Chinese foreign aid and development finance is negatively tied to the level of trust expressed by individuals towards the Chinese government. An individual perceiving a 1-unit higher influence from such projects indeed has 0.999 times the likelihood of expressing trust towards the Chinese government than one perceiving a 1-unit lower degree of influence. While this effect might seem small, it must be considered given the continuous nature of the influence variable, which contains values ranging from 0 to 731. These findings constitute significant evidence that Chinese development assistance tied to specific projects negatively influences nearby residents' trust in the Chinese government, allowing us to refute Null Hypothesis 1.

Many of the other control variables included in the model were also found to hold significant effects on the likelihood of an individual expressing trust toward the Chinese government. Older individuals, as well as female respondents, were found to be less likely to be favorable towards the latter,

with the latter effect stronger in significance. Political ideology was also found to hold significant effects through several variables. Individuals identifying themselves as holding more right-wing ideologies were found to be less likely to express favorability towards China. In parallel, those expressing higher degrees of satisfaction with the state of democracy in Ecuador were similarly less likely to express trust in the Chinese government. Both of these effects were strongly significant. Those stating one higher degree of interest in politics were also 0.866 times as likely to express such trust as those expressing lower degrees of interest on the same measure. Educational attainment was found to have a weakly significant, but positive effect on the likelihood of individuals expressing trust toward China's government. Individuals having attained one more year in education have 1.027 times the likelihood of expressing such trust than ones having spent a year less. In contrast, income was found to have no significant effect on the likelihood of an individual expressing such trust. Respondents expressing one level of higher trust towards the U.S. government on the four-point Likert scale containing responses to the relevant survey question were indeed found to have 0.703 times the likelihood of expressing trust towards the Chinese government relative to ones expressing a one-degree lower trust towards the former. This likely reflects the fact that the two countries often represent competing influences and developmental visions in much of the developing world.

## **10. Local Impacts of Chinese-funded Projects**

The local impacts of projects funded through Chinese foreign aid and development finance must be examined to explain their negative impacts on the favorability expressed towards China by nearby populations. The developmental aspects of such projects remain the subject of contentious scholarly debate. Some authors highlight the many positive opportunities brought to receiving countries by Chinese foreign aid and development finance funding under programs such as the BRI, arguing the latter to be a leading example of win-win international cooperation (Khan et al., 2018). Others have adopted more skeptical approaches, showcasing the self-interested and market-seeking nature of Chinese development assistance, and pointing out its limited benefits for local populations (Venkateswaran, 2020). Specifically, the lack of local labor participation and capture by local elite interests represent common complaints identified as having been voiced

in opposition to projects funded by China. Finally, some scholars adopt a middle-ground approach, pointing out the divergent outcomes tied to Chinese infrastructure investment (Chen & Li, 2021). Regardless of the above divide, clear empirical evidence exists regarding local opposition to BRI projects (Parepa, 2020). Our results provide additional support for the existence of such opposition.

In the context of Ecuador, it is clear that individuals living near the site of a project funded by official Chinese foreign aid and development finance express less trust in the Chinese government. This can, at first glance, be surprising given the nature of such projects. Out of the nine projects included in the analysis, seven pertain to energy generation infrastructure, with one consisting of transportation infrastructure and one tied to the development of a university campus (Ray et al., 2021). Among the ones tied to energy generation, the majority of funding was used to build hydroelectric dams and generating stations. These projects in particular are associated with significant sustainability challenges and have been shown to cause large-scale disruption to local communities. In addition, even in the country's rural regions, a near totality of Ecuadorians possess access to electricity, with only a limited increase in recent years (World Bank, 2021). While Ecuador's power generation capacity has increased substantially as a result of generation projects funded through Chinese foreign aid and development finance (Energy Information Agency, 2021), benefits tied to this may not have been directly perceptible to local populations.

In contrast, negative local effects from the above projects have been apparent and have sometimes led to significant opposition from local populations. Specifically, localized protests have erupted several times as a result of perceived environmental degradation surrounding projects (Carvalho, 2019). Further areas of local grievance include uncompensated land grabs and unmet promises concerning local employment and development (Carvalho, 2019). These concerns about the lack of opportunities and positive spillover provided by projects for local populations reflect ones expressed globally about BRI projects and Chinese foreign aid and development finance. In the case of Ecuador, our results suggest that they overpower the perceived benefits of the infrastructure developed. In such a case, while it remains possible that Chinese development assistance remains an attractive tool for national political and economic elites, it seems unlikely that it can fulfill its envisioned role as a

vector of broad-based influence and public diplomacy.

## **11. Diverging Elite Opinions**

Our findings showcased that the effects of income on support for the alternative political and development model represented by China and its activities in the country failed to meet our significance threshold. However, educational attainment was significantly tied to an increased likelihood of expressing favorable opinions toward China. This likely reflects the diverging perception of Chinese development assistance among economic and political elites. Much existing research has identified the outsized support from the economic and political elites of recipient countries towards Chinese development assistance. The lack of oversight and regulation associated with such funding has indeed allowed some elites to engage in rent-seeking behavior (Hillman & Sacks, 2021). In addition, attracting Chinese BRI projects has been used to further the political legitimacy of Latin American leaders by helping them perform well on metrics such as economic growth (Oliveira & Myers, 2021). As a result of such factors, projects such as the BRI have been argued to socialize the national elites of recipient countries towards the acceptance of Chinese norms and behavior (Tudoroiu, 2020). In addition to the above benefits, elites do not necessarily reside in proximity to relevant project sites, leading them to be further removed from the negative local impacts outlined in the above section. It is important to note that political and economic elites do not only include nationally prominent politicians and businessmen. Instead, benefits from Chinese foreign aid and development finance can trickle down to a large number of individuals with ties to government or business entities. Although the positive effect of income on favorability towards China did not meet our significance threshold, the success of the above socialization efforts help explains our results.

The academic sector has been another area of intense outreach for the Chinese state. Indeed, attempts to foster closer ties with academic institutions in many countries around the world have been seen as a way to foster positive perceptions among future influential individuals (Yang, 2021). In Latin America, such activities have included the development of many Confucius Institutes promoting the Chinese language and culture in universities around the continent (He, 2019). We suggest that the higher likelihood of individuals with higher educational attainment expressing trust



towards the Chinese government likely, at least partially, reflects the success of such initiatives targeting specific demographic groups identified by the Chinese governments as potential vectors of political influence.

## **12. Ideology and Competing Developmental Visions**

Our results provide significant support for the view that the United States and China provide alternative development paths and visions in the eyes of many residing in developing countries. Individuals expressing higher degrees of trust towards the U.S. government indeed express significantly lower trust in the Chinese one. This effect is noteworthy both for its high degree of significance and its size. Extensive texts have identified the above two states as engaged in significant competition for influence across Latin America (Paz, 2012), and specifically in Ecuador (Ordonez, 2021). The above result provides evidence for the internalization of such a situation by local populations in the latter country. To respondents in the LAPOP survey, favorability for one of the powers was seen through a zero-sum lens with support for the other.

Personal political orientation was further found to hold a significant effect on expressed trust for the Chinese government. While the ideology variable was included as a control in our model, it is interesting that it represented one of the most significant variables associated with one of the largest effect sizes. Specifically, individuals self-identifying as more politically right-wing were less likely to express favorable views of China. In Ecuador, this is likely linked to the strong ties between the leftist administration of Rafael Correa, which was in power until 2017, and China. Towards the later years of this administration, opposition voices raised their criticism of such ties, arguing that indebtedness towards China was reaching dangerous levels (Kraul, 2018). Guillermo Lasso, the right-wing president of Ecuador elected in 2021, further continued such criticism and has attempted to re-orientate his country towards its traditionally strong ties with the U.S. (Dube, 2021). As a result, political ideology and favorability towards the US have likely worked in mutually reinforcing manners in Ecuador. Individuals expressing right-wing political positions and trust in the US government are likely critical of both the leftist Correa administration and China. Evidence from our model provides strong support for such a suggestion.

### **13. Conclusion**

Our findings suggest that Chinese development assistance, which has become increasingly prominent as a result of the BRI, lacks the potential to act as a significant vector of Chinese influence and public diplomacy in Ecuador, a country representing a case of a key battleground in the current competition for influence between the great powers. Characteristics tied to such projects, such as their lack of oversight and regulation have likely led to opposition towards them, and a resulting loss of favorability towards China, from local populations. Our findings suggest that, as the distance to a relevant project decreases, such opposition becomes stronger, as a result of the stronger diffusion of negative externalities tied to the projects combined with disillusionment tied to unmet promises. This is likely particularly significant in infrastructure projects such as dams which are often tied to significant local disruption and environmental challenges. In contrast, our findings suggest that individuals with high educational attainments and higher incomes do not share such distrust of the Chinese government. This suggests the relatively higher success of Chinese outreach efforts tied to elite socialization and educational outreach. Finally, we find support for the hypothesis that populations of countries recipient of Chinese foreign aid and development finance view the U.S. and China as providing competing political and developmental models. It is important to note that the different mechanisms through which the observed results occur should not be considered in isolation, but rather constitute mutually contributing factors explaining them. As a result of the complexity of concepts such as soft power and favorability, a search for a single causal pathway is likely to be a fruitless endeavor.

The main limitation of this study stems from the high rate of nonresponse (49%) to the survey item examining trust towards China. While this likely reflects the relative lack of knowledge and opinion of the question from many Ecuadoreans as a result of the relatively recent rise in the importance of China in the country, respondents omitting to answer the question may differ in significant ways from those providing answers to it. An investigation of the differences between the above two groups of individuals represents an avenue for further research. Despite this, our research suggests that concerns surrounding the potential of programs such as the BRI to act as Chinese soft power tools are overstated. Instead, to better understand Chinese political influence, future researchers and

policymakers should focus on the vectorial nature of Chinese outreach targeting the academic sectors and politico-economic elites.

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## **International Students' Satisfaction with Online Learning and Faculty Engagement during the COVID-19 Pandemic in Northwestern Chinese Universities**

Shixue Zhang\* Florence Kuek<sup>o</sup> Yuntao Wu<sup>•</sup>

\*International Office, Baoji University of Arts and Sciences

<sup>o</sup>Department of Chinese Studies, Universiti Malaya

<sup>•</sup> School of Foreign Studies, Henan Polytechnic University

### **Abstract**

International students in China had not anticipated the unprecedented disruption to their educational experiences caused by the COVID-19 pandemic. In China, COVID-19 movement control on campus was managed solely by university authorities. Online teaching and learning following multilevel procedures were implemented for centralized emergency response, decision-making, and information dissemination. This study examined international students' academic and non-academic experiences in northwestern Chinese universities during the pandemic. Kuh's engagement theory of learning and the Keaveney and Young's Satisfaction Model were adapted and employed for insights into student satisfaction. The study was informed by Creswell's "exploratory sequential" mixed methods research design. The in-depth interviews with selected students from three universities with the highest international student intakes in northwest China yielded four factors affecting students' satisfaction, namely, online learning experience,

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\* Shixue Zhang leads the International Education Division at the International Office, Baoji University of Arts and Sciences. Her research areas include cross-cultural studies, and global education.

<sup>o</sup> Florence Kuek is a Senior Lecturer at Chinese Studies Department, Faculty of Arts & Social Sciences, Universiti Malaya. Her research foci include contemporary Chinese literature, literary criticism, and educational research.

<sup>•</sup> Yuntao Wu is a lecturer at the School of Foreign Studies, Henan Polytechnic University. His research areas include second language acquisition, psychology, English teaching and learning.



in class-interaction, out-of-class faculty-students engagement, and out-of-class student initiative. A validated questionnaire was distributed following the interviews at three universities. 410 international students completed the questionnaire. The analysis revealed a moderate level of satisfaction with both online learning and the faculty-students engagement during the pandemic. However, international students' expectations differed according to their respective backgrounds and disciplines. Undergraduates yearned for more interpersonal communication, while postgraduate students desired academic engagement during online learning and fulfilment of graduation criteria. These findings should help the universities in Northwest China with strategic planning and the formulation of management policies pertaining to international student satisfaction.

**Keywords:** *International Students in China, Pandemic, Online Learning, Faculty-student Engagement, Students' Satisfaction*

## 1. Introduction

The internationalization of higher education in China has progressed considerably and helped turn the Chinese education system into one of the biggest and potentially most ambitious globally (Yang, 2014; Li, 2016). As a result, China is not only a major "sending" country but has recently become a significant "receiving" country for international education in the global education market (Lin & Tian, L., & Liu, N. C., 2020). Since the early 2010s, the number of students admitted into higher education programs has increased (from 265,090 in 2010 to 520,000 in 2020), albeit at a lower rate than the increased enrollment allocations available across Chinese universities (Chen, 2017).

To ensure the quality of education development, the policies relating to international students' education have undergone three changes: Its purpose has shifted from diplomacy to education, its orientation reframed from scale expansion to quality improvement, and the management regulations have moved from fragmented to systematic. Table 1 highlights the changes in policy documents circulated by the Ministry of Education of the People's Republic of China (PRC), and to a certain extent, could be used as a source to project foreseeable development in the internationalization of higher education in China.

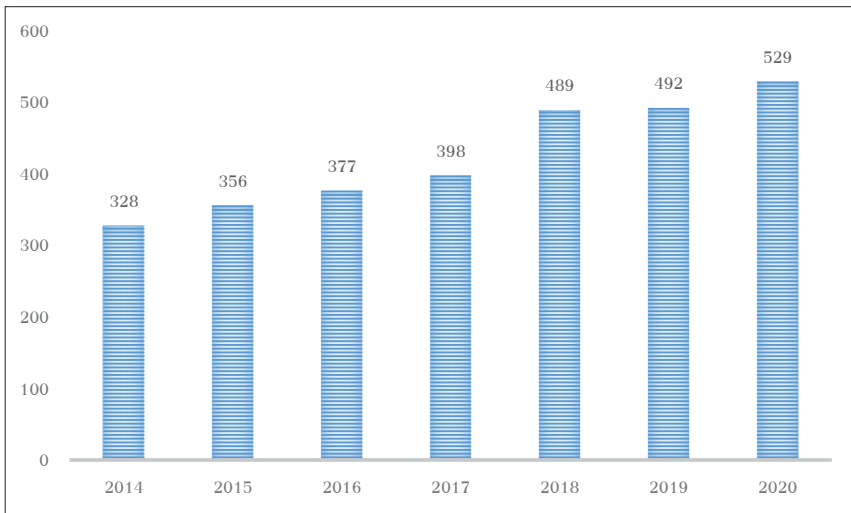
**Table 1. China's National Policy Documents for International Students**

<b>2010-2023 International Students Policy and Core Content</b>		
<b>Year</b>	<b>Policy Documents</b>	<b>Primary Contents</b>
2010	Outline of the National Medium- and Long-term Education Reform and Development Plan (2010-2020)	Clear indicatives on increased financial assistance, scholarship quotas and program diversity for international students.
	“Study in China Program”	Emphasis on policy support, inter-agency collaboration and oversight, student-oriented communication, and admission standards.
2011	Guidelines from the Ministry of Education of the PRC's General Office on Improving Online Registration and Academic Certificate Management for Foreign Students	Adjustments on educational credentials verification for academic certificates of international students and online registration process of students' records and qualifications.
2015	Action Plan for Studying Abroad, 2015-2017	Emphasis on creating a global brand name for China's higher education through transforming it into an effective, integrated, open system.
	Notification on Enhancing the Funding System for Chinese Government Scholarships and Increasing the Funding Criteria	Comprehensive guidelines on the scholarship, management system, and standardization of the subsidies.
2016	Some Perspectives on Enhancing Educational Openness in the Current Times	Emphasis on the “Studying in China” program, offering Chinese government sponsored “Silk Road” scholarship, and enhancement of the supplementary education system for international students.
	Encourage Collaborative Efforts in Implementing The Educational Initiatives of The “Silk Road” scholarship program.	Execution of the study abroad promotion plan alongside the “Silk Road” scholarship program and enhancement of the overall standards of personnel education in China.
	Opinions on Strengthening The Administration of Permanent Residence Services for Foreigners	Outlines on system and mechanisms, flexibility and practicality in international students' application criteria, optimisation of the acceptance and approval procedures, qualifications and benefits, daily management, and reinforcement of national security.
2017	Announcement regarding the Pertinent Issues related to Enabling Outstanding Foreign Graduates to Secure Employment Opportunities in China.	Outlines for the employment provisions for outstanding foreign university graduates in China with reference to the “Regulations on the Administration of Employment of Foreigners in China” issued in 1996.
	Criteria for the Admission and Education of International Students at Universities	Standardized procedures for overseeing the international students' enrollment, education, campus life, scholarships, and students' welfare.

2010-2023 International Students Policy and Core Content		
Year	Policy Documents	Primary Contents
2018	Standard of Excellence in Higher Education for International Students.	Systematic goal setting for training, admission, education, instruction, administration, and support services for international students.
2019	2035 Vision for the Advancement of Chinese Education	Execution of plans to support international students studying in China, and establishment of a mechanism to ensure the quality of education.
2020	Notice Regarding Regulations for University Employment Opportunities Available to International Students	Changes to the application process for international students
2021	President Xi Replies to International Students at Peking University ( <i>XinHua</i> , 2021)	Presidential address on the acceptance of international students' opinions and assurance of services by the Chinese universities.
2021	Notification regarding the Enrollment Plan for International Students Majoring in Clinical Medicine (taught in English) for the 2021 and 2022 academic years	Guidelines on registering for information updates, program duration, vaccine requirements, and application processes for the 2021 Intake.
2022	Study International 2022 ( <a href="https://www.studyinternational.com/news/return-to-china-for-students/">https://www.studyinternational.com/news/return-to-china-for-students/</a> )	Execution of Zero-COVID policy and withholding foreign students visa issuance from March 2020 until November 2022.
	"Report on the Development of Studying Abroad in China (2022)"	Commitment to send more China students to study in Europe and Asia.
	2023 Policy Document	Gazetting the on-campus learning requirements for international students (February 2023), demanding all international students to return to physical classrooms in China rather than continuing the online learning mode.
2023	A Notification regarding the Management and Service for the (Re-)entry of International Students.	<ol style="list-style-type: none"> <li>1. Permission for issuance of visa application by international students (January 8, 2023), resuming the pre-epidemic policy.</li> <li>2. Requirements on improved international student governance, such as maintaining satisfactory staffing ratio of university counsellors over international students.</li> <li>3. Emphasis on open communication with international students, front-line retention management cadres, pastoral care, psychological counselling, and monitoring of the mental health of staff and students.</li> </ol>

In the last decade, the open-door policy has remained. However, as a result of the implementation of the 2010 policy to encourage international students' enrollment, China has been attracting more international students from various countries. Besides the commitment to ensure high quality education, students' welfare and financial support, China also enhanced cross-border collaboration with other countries along the "Silk Road" scholarship program, which has boosted students' mobility and exchange since 2013. In addition, various policies continued to be implemented, and China announced new measures for universities on the management of international students, such as "Notification on Enhancing the Funding System for Chinese Government Scholarships and Increasing the Funding Criteria" in 2015. However, in the process of development, China also faced some challenges in fulfilling international students' expectations in terms of academic development, such as providing adequate support and guidance. To address these issues, the Chinese universities have been continually revising their policies and systems. Nonetheless, the enhancement of international student satisfaction is one of the key emphases across institutes of higher learning in China.

**Figure 1. IEE Prospective Industry Research Institute, 2020**



The Ministry of Education of PRC published statistics in 2018 that showed China as having international students from 196 countries. The number of international students grew steadily from 2014 to 2018 and reached its highest point in 2019. China was the third most popular destination for international students after the United States and the United Kingdom. A favorable outcome of the policy (OECD Data, 2019) was that the number of international students rapidly increased from 328,330 (2014) to over 500,000 (China's Ministry of Education, 2021).

During the COVID-19 pandemic, online learning for international students was implemented in many universities. With its large number of international students, China faced many challenges in ensuring the safety and satisfaction of its international student population. Meng, & Du's (2021) research documents the challenges faced by international students in China during the pandemic, such as travel restrictions, online learning, and mental health issues. The impact of the pandemic on international student mobility, and how it may affect China's position as a participant in the global knowledge economy became a burning issue across Chinese universities, especially in the northwestern provinces. In response to these challenges, the present study investigated international students' satisfaction during the COVID-19 pandemic in three universities in northwest China. Qualitative and quantitative data collection methods were employed to identify and investigate factors that contributed to the satisfaction of international students at these three universities during the pandemic. In addition, the measures that the universities undertook to control the spread of the virus and how these measures affected international students were also examined.

## **2. Literature Review**

### ***2.1 The Satisfaction of International Students***

The satisfaction of international students is a crucial aspect of higher education, and it has been a subject of study for decades. However, the entire international students' education scene saw a sudden and massive change after the COVID-19 pandemic was declared. One of the latest research reports titled "COVID-19 and International Student Mobility: Implications for China's Position in the Global Knowledge Economy" highlights necessary attention on international students' satisfaction, in particular, concerns regarding the choice of study destination, international

students' learning experiences and identity formation, and the effectiveness of national policies on international education programs (Liu; Wang; Li; Javed; Qadeer; Kashif Javed; Manzoor; Wu; Zaman August, 2021). Tian and Lu (2022) provide insights into China's emergency online education from the perspectives of international students. The findings draw attention to the importance of online learning satisfaction and factors relating to international students' satisfaction.

## ***2.2 Documents and Studies on China's Policies Learning During and After the Pandemic***

The Chinese education policy on online learning during the epidemic was a response to the COVID-19 outbreak. To ensure that students could continue their education during school closures, the Chinese government rapidly expanded the use of online learning platforms. In February 2020, The Ministry of Education of PRC issued guidelines on the use of online platforms and remote teaching, which schools and universities quickly adopted. China's national college network developed an educational guideline on international students in response to the COVID-19 pandemic. Among other items, the guideline emphasized the urgency of implementing online courses at colleges and universities to safeguard the continuity and the quality of course programs. The guideline included suggestions for online instruction, such as using digital platforms and tools, communicating effectively with students, and assessing student learning. In addition, it highlighted the significance of maintaining a supportive and inclusive learning environment, even in an online setting (The Ministry of Education of PRC, 2020). In addition to teaching strategies, this guideline provided information on health and safety measures that colleges and universities should implement to protect students against COVID-19. The measures included temperature checks, social distancing, and the provision of protective equipment. The comprehensive teaching guide for international students during the COVID-19 pandemic assisted colleges and universities in China in adapting to the challenges of the pandemic and providing international students with a high-quality education in a safe and supportive environment (The Ministry of Education of PRC, 2020).

### **2.3 *Online Teaching Guidelines and International Student Policies of Three Universities with The Highest Number of International Students in China***

University E (a pseudonym to ensure confidentiality), one of the universities in this study, provided online learning opportunities for international students who were unable to attend classes on campus during the pandemic through the comprehensive COVID-19 prevention and control plan, which included measures such as health screening, quarantine, and regular testing for both students and staff. These measurements complied with the guidelines of the Ministry of Education of PRC. Furthermore, it laid down provisions to safeguard the mental health and well-being of international students during the pandemic with strategies such as creating peer support groups, providing access to counselling services, and encouraging social activities that could be conducted safely in accordance with public health guidelines. In addition, the Chinese government issued policies aimed at supporting international students such as providing financial support for students who were unable to return to their home countries, extending visa deadlines, and allowing international students to take online courses from their home countries (*Training program for international students during the epidemic of University E*, 2020).

University M (pseudonym), another university included in this study, implemented strict infection prevention and control measures through screening measures, personal protective equipment, and disinfection protocols. It also guided the safe delivery of clinical and laboratory teaching and the use of online learning platforms to supplement in-person instruction. Moreover, to abide by the Chinese government's policies to support international students, the university took extra measures to provide medical assistance to international students during the pandemic. Financial schemes and assistance were also offered to international students who were unable to return to their home countries by extending visa deadlines, implementing special measures for clinical teaching and rotations, setting up dedicated quarantine areas and psychological counseling services (*Guidelines for management of international students of University M*, 2020).

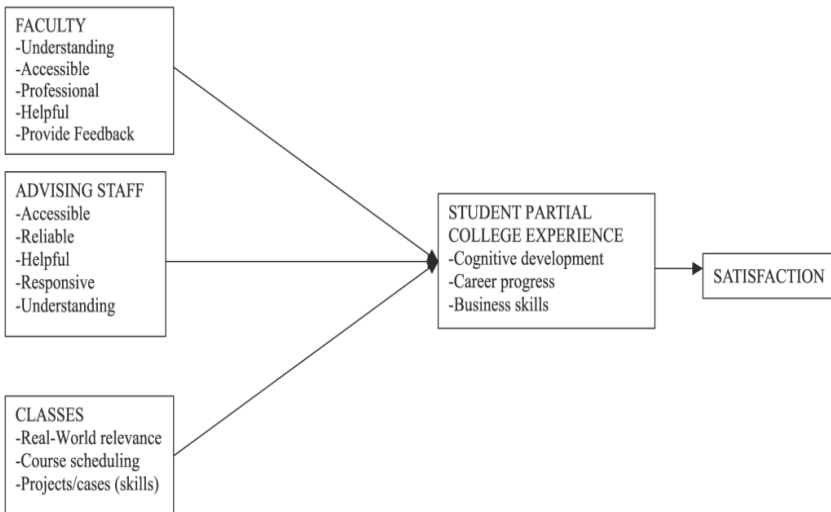
University S (pseudonym), the third university in this study, supported international students in the arts and social sciences during the pandemic by providing financial assistance for students unable to return to their home countries, visa extensions, and making available online learning opportunities. Other arts and social science universities in China also

established special policies and support services for international students, such as creating dedicated quarantine areas and providing counseling services (*International Student Handbook of University S*, 2020).

#### **2.4 Kuh's Engagement Theory of Learning and The Keaveney and Young (1997) Satisfaction Model**

George Kuh (2009) defines academic success in terms of excellent academic achievement, active engagement in educationally purposeful activities, high satisfaction, keen acquisition of desired knowledge, skills, and potencies, persistence, attainment of educational objectives, as well as continuous post-college performance (Kuh et al., 2007) while Keaveney and Young's (1997) Satisfaction Model, depicted in Figure 2, assesses how teaching programs, guidance, and class type affect student satisfaction. It asserts that positive student experiences, which include understanding, accessibility, professionalism, helpful faculty, reliable and responsive advising staff, real-world relevance, and well-scheduled classes, can spur higher student satisfaction. In the absence of good faculty and advising staff, students' output and performance tend to deteriorate, leading to great dissatisfaction among them. Students often project their expected outcomes from their

**Figure 2. Keaveney and Young's Satisfaction Model (2007)**





college experience (Keaveney & Young, 1997). Therefore, students' rapport with faculty members, the administrative staff, and online learning experiences result in measurable student satisfaction levels, as students' satisfaction is invariably linked to their positive college experiences and retention rate in that institution (Hameed, 2011).

Using Kuh's (2007) engagement theory of learning and Keaveney and Young's Satisfaction Model (1997), this research investigated international students' satisfaction with online learning and faculty-student engagement during the COVID-19 Pandemic in China. The positive and negative aspects of online classes were examined. Faculty members and advising staff were interviewed for valuable insights into international students' perspectives and learning experiences during the COVID-19 pandemic. The study explored the following aspects:

- 1) The satisfaction level of the online learning experiences of international students during the COVID-19 pandemic.
- 2) The satisfaction level of the outside-the-class faculty-student engagement of international students during the COVID-19 pandemic.
- 3) Recommendations for improving international student satisfaction in the academic and non-academic domains in northwest China after the COVID-19 pandemic.

### **3. Research Methodology**

The dimensions of the student satisfaction model were first identified and measured through interviews with nine participants using semi-structured questions based on their experiences of online classes and faculty-student engagement during the pandemic. Following that, themes extracted from the thematic analysis of the qualitative data were compared and used for the construction of a questionnaire employed in the quantitative study, which involved 410 international students on site. These participants were enrolled at three universities with the highest international student intakes in northwest China. The exploratory sequential mixed methods design was deemed the most appropriate for the study for the following reasons:

- 1) Previous literature has not identified influencing factors for international students' satisfaction during a prolonged crisis in their higher learning experiences abroad. In addition, none of the previous

satisfaction questionnaires covered a nationwide pandemic. An exploratory sequential mixed methods began with the collection of qualitative data, followed by the analysis of the qualitative data to yield findings for the development of the quantitative instrument.

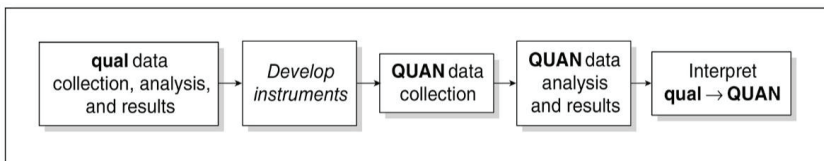
- 2) The total population of international students was rather difficult to ascertain due to the delay of student visa renewals during and after the pandemic. Many international students had left China and returned to their home countries. Some even became uncontactable by the universities. The situation became complicated when the G-to-G relationship between some countries and China was affected, resulting in the discontinued services of WeChat for international students who had returned to their countries of origin. It was therefore viable to begin with qualitative data collection in the situation described.

## **4. Data Analysis**

### **4.1 Exploratory Sequential Research Design (Creswell, 2013)**

The exploratory sequential research design can help to develop a more nuanced understanding of international students' satisfaction by integrating qualitative and quantitative data collection and analysis methods. By first exploring the experiences and perceptions of international students in the qualitative phase, researchers can develop hypotheses and identify variables to be tested in the quantitative phase, leading to a comprehensive understanding of the factors that contribute to international students' satisfaction. The diagram below illustrates the exploratory sequential design employed for the study.

**Figure 3. An Exploratory Sequential Design for the Study**



*(Fetters, Curry, & Creswell, 2013)*

#### 4.2 *Qualitative Data Collection and Analysis*

The objective was to document the experiences of international students when they participated in online courses, including students' survival measures, beliefs, and behaviors in studying during the pandemic. The interviews using semi-structured questions were conducted with three focus groups. Each group contained three international students. The interviews explored three questions: "What problems do you face with online learning during the lockdown?"; "How do you cope with your learning needs during the lockdown?"; and "Are you happy with all that have been done by the university to support your learning experiences during the pandemic?". The interviews were recorded, transcribed, and analysed.

Table 2 shows the international students' backgrounds and provides vital demographic information. These students were selected based on the principle of maximal variation, according to their respective university and three broad disciplines of learning, namely, arts and humanity sciences, engineering, and medical studies. The intakes of international students before the pandemic, namely, 2019 and 2020 were the largest, and there were no new intakes between 2020 to 2021. Therefore, respondents for this study were selected from the 2019 and/or 2020 intakes. Selected interviewees possessed Chinese proficiency of HSK4 and HSK5 levels and were considered proficient in expressing their opinions during the interview conducted in Chinese.

**Table 2. Interviewees' Backgrounds**

	<b>Intake*</b>	<b>Gender</b>	<b>Mandarin levels</b>	<b>Nationality</b>
A1	2019	Female	HSK4	Pakistani
A2	2019	Female	HSK4	Moroccan
A3	2019	Male	HSK5	Moroccan
E6	2019	Male	HSK5	Pakistani
E5	2019	Male	HSK5	Moroccan
E4	2019	Female	HSK4	Moroccan
M7	2020	Female	HSK4	Pakistani
M8	2020	Male	HSK4	Korean
M9	2020	Male	HSK5	Korean

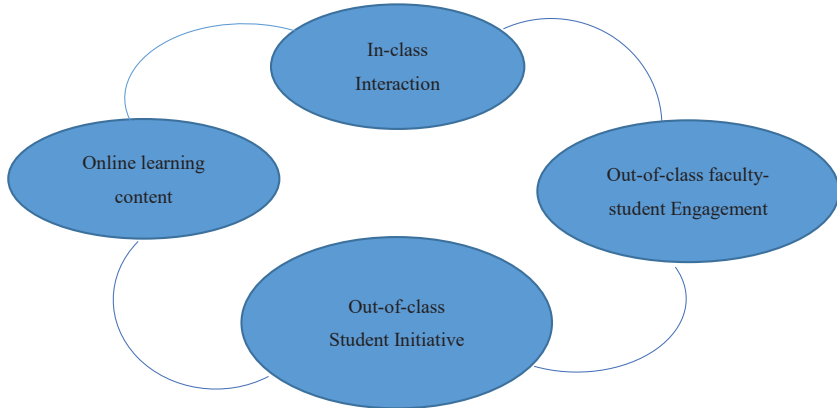
\* *Note: Enrolment of international students at the three universities with the highest student number in northwest China fell dramatically in 2020, 2021 and 2022 due to the stringent movement control policies and border closure.*

The interviews conducted with the nine foreign students yielded several core categories and themes. A sample of thematic analysis is attached in APPENDIX (A). The core categories or sub-themes from the thematic analysis were the following: Network Technology, learning Environment, Advising Staff and Faculty Members, Online Platforms, Grading Systems, Assessment Options, Training Workshops, Online Technical Support, Class Activities, and Off Class Feedback.

A deductive strategy was chosen to develop the themes. Key themes from the merger of four core categories comprised the following: (a) Online learning content, (b) In-class Interaction, (c) Out-of-class faculty-student Engagement, and (d) Out-of-class Student Initiative.

These four main categories or themes were converted into two key constructs, namely, Online Learning Experience, and Faculty-students Engagement. They were the factors investigated in the subsequent research phase, namely, a quantitative study with a larger sample size.

**Figure 4. Key Themes Derived from the Qualitative Data**



The analysis of the interview data revealed that higher education in the three universities with the highest student number was significantly affected by the COVID-19 pandemic, and international students' university learning experiences were impacted. Although many universities had developed novel techniques for online education platforms and virtual campuses, most students, particularly international students, preferred to live on physical campuses. The interviews also revealed that the non-science majors, such as

the Arts and Sciences students (A1, A2, A3), had high expectations of online courses and interaction, while sciences students, especially the Engineering (E4, E5, E6) and Medicine majors (M7, M8, M9) had different perspectives and experiences of online classes. Overall, all interviewees - from the Engineering, Medical, and even the Arts and Sciences groups - wanted free accessibility and use of campus facilities such as the library and laboratory. However, access and facilities were limited during the lockdown. In addition, the international students yearned for active classroom engagement, which was moderately addressed during the lockdown.

Compared with faculty-student engagement, the learning content delivery by the faculty members in online teaching activities fell below expectations as the engagement was deemed far from satisfactory. For example, some students recalled that faculties adopted active approaches throughout online teaching but did little to generate class activities. Students' participation in classes was therefore compromised. The lack of engagement caused some students to suffer from emotional imbalance and experience dissatisfaction. Lack of online and offline interaction with the faculty members and feelings of isolation marred online learning. For example, the interviewees reported that they lacked opportunities to communicate with classmates online and could not meet them face-to-face. They felt isolated as they were unable to interact with their classmates in virtual learning environments, unlike in physical classrooms.

In terms of online content, Arts and Social Sciences students (A1 and A3) said that online interaction failed to proportionately develop students' language skills compared with offline physical classes. For example, students in elementary language classes said that they had too little time to practice Chinese characters, so they could not write them. A2 pointed out that writing and extensive reading are vital to improving Chinese, but there were no specific writing and extensive reading classes in the online courses.

Student A1 drew attention to the negative experience of interaction, while some students said that they had difficulty following the classes. Comments included the following:

*“I can't keep up with the content..., I was unable to absorb... the teacher can't really keep track of the discussion... on all the students' comments and feedback.”*

It was clear that online classroom management left much to be desired. Among the medical students, online learning provided limited access to clinical settings, making it challenging for them to acquire the necessary clinical skills and experiences required for medical practice. M2 recalled,

*“We are studying medicine. Although we can enter the school’s library and laboratory, it is still not very convenient; I can’t follow the teacher’s steps like before”.*

Like students pursuing the arts and the sciences, medical students experienced technical issues such as internet connectivity problems, which affected their ability to participate in online classes and complete assignments. For example, M3 said,

*“I normally finish my homework in the afternoon, but that is if I time myself well. I need a lot of self-control to keep up with the class... Sometimes the Internet is not good”.*

Online learning provides limited access to practical experiences and hands-on learning, particularly for disciplines that require hands-on experiences, such as science and engineering. Engineering education requires students to work collaboratively and interact with their peers and instructors regularly. However, online learning reduced opportunities for such interaction and collaboration, which negatively impacted international students’ motivation. Much-needed support, especially for students learning in isolation, was also reported to be lacking. Clearly, it affected efficiency in learning. E2 explained,

*“There are databases and thesis libraries purchased by the school for reference. However, it often takes a long time to use them if the teachers do not guide us on how to use them.”*

Student satisfaction with faculty communication varied, based on how teachers conducted online learning. Online classes may lack the face-to-face interaction that is present in traditional classroom settings, which can make it more difficult for faculty members to establish rapport with students. Common issues that hindered faculty-student engagement in the context of

online classes were highlighted:

Student A1 claimed that *“My instructor tried to assist me, but she was stopped and couldn’t leave or call the hotline. ... There is little emotional communication with my faculties.”*

Online classes limited opportunities for informal interactions between faculty members and students, such as before or after class or during breaks. Notwithstanding these many challenges, international students who were in China during the pandemic, remained optimistic about studying and living in China. It was clear that the foreign students could appreciate the advantages and the necessity of online classes. For example,

M2 explained: *“Online classes have kept us safe during the pandemic.”*

E3: *“Online courses, in my view, offer an advantage in that you may see course replays, which is especially useful for international students like me.”*

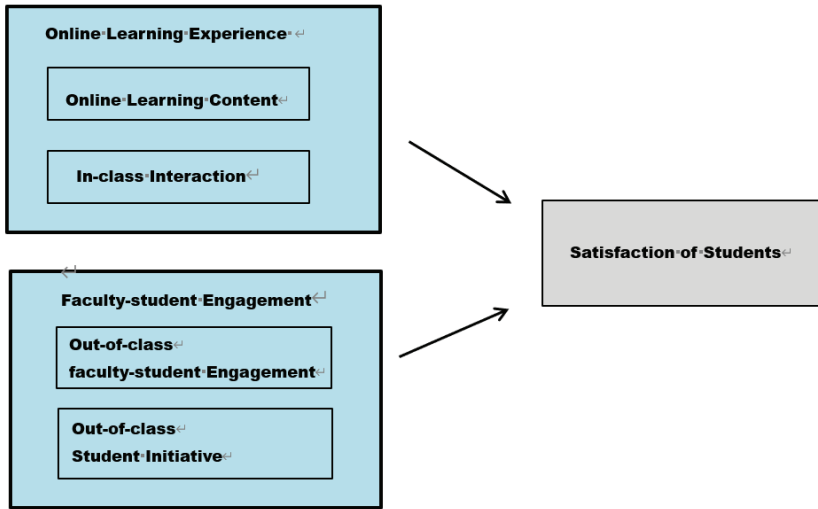
The interviewees acknowledged that online learning and living provided international students with flexibility, allowing them to study and live from anywhere in the world. Besides, online learning and living encouraged international students to become more independent, taking responsibility for their own learning and living. International students had apparently got accustomed to their lives in China and expressed the desire to continue living in China, for specific reasons. For example, A1 said,

*“I wish to graduate early and find work in northwest China, as I believe it is a wonderful place to live.”*

Other international students wanted to learn more about Chinese culture and language, travel to different parts of the country and meet up with other international students from all over the world.

The themes coded and derived from the interviews informed the framework of this study, depicted as follows:

**Figure 5. Conceptual Framework of the Study**



### 4.3 Quantitative Data Collection and Analysis

The quantitative instrument for this study was developed from the themes derived from the qualitative data. They were then turned into factors which had been cross-checked against similar items listed in the Student Experience in the Research University (SERU) Survey, which investigated students' academic and civic engagement, learning and development, and students' participation in other areas of campus. The University of California system (2002) and Noel-Levitz (2016)'s Students Satisfaction Questionnaire (SSQ) were also referred. Only items applicable for this study were incorporated and listed in the final draft version of the questionnaire for validation by experts. It consisted of sections investigating the following aspects: (i) Online learning content; (ii) In-class Interaction; (iii) Out-of-class Faculty Engagement; and (iv) Out-of-class Students Initiative.

The draft of the questionnaire was subsequently validated by two experts in the field, comprising a senior lecturer with more than 30 years' experience in educational management and leadership, and an educational psychology lecturer with five years' professional experience. Both were well-versed with quantitative data analysis tools. The validated questionnaire was subsequently disseminated through an online platform to all accessible



international students in the databases of three participating universities in northwest of China. Permission was obtained from the universities' governing bodies. A consent statement was included in the questionnaire for respondents. The online questionnaire was delivered through *Wenjuanxin*, a Chinese survey platform, to the WeChat phone apps of the international students in the databases.

The intended sample included randomly selected international students who were listed on the databases of the three participating universities in northwest of China. The names were taken from three disciplines, namely, the Arts & Social Sciences, Engineering, and Medical Sciences. 410 respondents answered the questionnaire. The data were categorized according to cluster sampling.

**Table 3. Reliability Test of Dimensions**

Dimensions	Cronbach' Alpha	No. of Items
Online Learning Content	0.865	5
In-class Interaction	0.864	5
Out-of-Class Faculty Engagement	0.900	5
Out-of-Class Students Initiative	0.924	4
Students satisfaction	0.969	16

Table 3 shows that the reliability of each dimension was >0.708, indicating that the reliability of each dimension was of high reliability.

**Table 4. Results of Confirming Factor Analysis Model Fitting**

$\chi^2$	<i>df</i>	$\chi^2 / df$	RMSEA	GFI	NFI	TLI	IFI	CFI
1976.00	610	3.239	0.074	0.779	0.886	0.911	0.919	0.918

It can be seen from Table 4 that RMSEA was lower than 0.08, except that GFI was close to 0.8, NFI was close to 0.9, TLI, IFI and CFI all exceeded 0.9, and the ratio to degrees of freedom was less than 5, close to 3. Therefore, from the result of CFA, the data indicated that the measurement tool had high construct validity.

**Table 5. Convergent Validity**

<b>Dimension</b>	<b>Question NO.</b>	<b>Normalized factor loadings</b>	<b>CR</b>	<b>AVE</b>
OLC	Q9	0.644	0.859	0.555
	Q10	0.706		
	Q11	0.784		
	Q12	0.626		
	Q13	0.924		
ICI	Q14	0.685	0.865	0.569
	Q15	0.710		
	Q16	0.809		
	Q17	0.583		
	Q18	0.936		
SOL	Q19	0.786	0.965	0.712
	Q20	0.856		
	Q21	0.840		
	Q22	0.863		
	Q23	0.841		
	Q24	0.899		
	Q25	0.859		
	Q26	0.867		
	Q27	0.858		
	Q28	0.885		
	Q29	0.715		
OCSI	Q30	0.902	0.925	0.755
	Q31	0.861		
	Q32	0.830		
	Q33	0.880		
OCFE	Q34	0.666	0.902	0.651
	Q35	0.844		
	Q36	0.865		
	Q37	0.819		
	Q38	0.824		
SFE	Q39	0.871	0.941	0.695
	Q40	0.862		
	Q41	0.859		
	Q42	0.863		
	Q43	0.704		
	Q44	0.790		
	Q45	0.871		

Table 5 shows that the composite reliability CR value was >0.7, and the AVE was >0.5, indicating that the questionnaire had good convergent validity.

**Table 6. Discriminant Validity**

	<b>OLC</b>	<b>ICI</b>	<b>OCSI</b>	<b>FE</b>	<b>SOL</b>	<b>SFE</b>
OLC	<b>0.745</b>					
ICI	.970**	<b>0.754</b>				
OCSI	.465**	.468**	<b>0.869</b>			
OCFE	.755**	.751**	.563**	<b>0.807</b>		
SOL	.871**	.877**	.568**	.844**	<b>0.844</b>	
SFE	.754**	.757**	.565**	.905**	.840**	<b>0.833</b>

It can be seen from the table 6 that the root value of AVE was larger than the correlation coefficient of each dimension, indicating that the questionnaire had good discriminant validity.

**Table 7. Descriptive Statistics on Students' Satisfaction**

<b>Dimension</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
OLC	410	3.8444	0.87557
ICI	410	3.8532	0.87542
OCFE	410	3.8712	0.92104
OCSI	410	3.9171	0.99701
Satisfaction	410	3.893	0.85719

A descriptive statistical analysis was conducted on the standard deviation. The study revealed that the satisfaction ratings for OLC, ICI, OCFE, and OCSI were 3.8444, 3.8532, 3.8712, and 3.9171, respectively. The overall satisfaction level for international students was determined to be 3.893. These findings suggest that during the pandemic, international students attending northwestern universities in China were moderately satisfied with online learning and faculty-student engagement. Furthermore, the OCSI factor appeared to be the most influential factor for their satisfaction.

**Table 8. Statistical Analysis of Satisfaction Correlation**

Correlations	OLC	ICI	FE	OCSI	Satisfaction
OLC	1				
ICI	.970**				
OCFE	.755**	.751**			
OCSI	.465**	.468**	.563**		
Satisfaction	.857**	.862**	.904**	.590**	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis was performed to determine whether there was a certain dependent relationship between the items and whether there was a dependent relationship between the specific variables. In order to study the correlation among OLC, ICI, OCFE, OCSI, and student satisfaction, a multivariate Pearson correlation analysis was carried out. The variables were all positively correlated, and the interaction between OLC and ICI was the strongest ( $r=0.970$ ), followed by OCFE ( $r=0.904$ ) and ICI ( $r=0.862$ ), which had the strongest impact on satisfaction. The weakest among the factors was OCSI ( $r=0.590$ ). Nonetheless, the OLC, ICI, OCFE, and OCSI were all influencing factors to explain the online learning satisfaction of international students, that is, all of these four factors can be used to analyse online learning satisfaction.

**Table 9. Regression Analysis of Satisfaction**

Model Summary <sup>b</sup>						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.949a	0.9	0.899	0.27191		
a. Predictors: (Constant), OLC, ICI, OCFE, OCSI						
b. Dependent Variable: Satisfaction						
ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	270.581	4	67.645	446.95	.000b
	Residual	29.943	405			
	Total	300.524	410			
a. Dependent Variable: Satisfaction						
b. Predictors: (Constant), OLC, ICI, OCFE, OCSI						

$p < 0.05$  means that at least one independent variable significantly affected the dependent variable. This condition is defined to some extent by the original variable of R square fitting degree, the effect of the dependent variable by the variable, and the four dimensions of OLC/ICI/OCFE/OCSI may reflect 89% of the degree of satisfaction change.

**Table 10. Regression Analysis Coefficients of Satisfaction**

Model		Coefficients <sup>a</sup>						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.07	0.068		1.034	0.003	0.358	2.219
	OLC	0.094	0.064	0.096	1.47	0.000	0.359	2.008
	ICI	0.315	0.063	0.322	4.979	0.000	0.369	2.711
	OCFE	0.501	0.024	0.539	20.852	0.000	0.678	1.474
	OCSI	0.079	0.016	0.091	4.797	0.000	0.358	2.219

a. Dependent Variable: Satisfaction

The p values of OCL, ICI, FE, OCSI  $< 0.05$ , indicating their significance in probability, the  $\beta$  value regression coefficient were 0.096, 0.322, 0.539 and 0.091, indicating a positive impact; VIF was less than 5, indicating that there was no significant collinearity. Among the Online Learning (OLE) dimensions, In-class Interaction (ICI) was the better predictor ( $\beta = 0.322$ ). Among the Faculty-student Engagement (FE) dimensions, Outside-the Class Faculty Engagement (OCFE) was the better predictor ( $\beta = 0.539$ ).

In the fitting test results, the multiple correlation coefficient  $R = 0.949$ ,  $R^2 = 0.9$ , and the adjusted  $R^2$  determination coefficient value was 0.89, indicating that the fitting degree of the model was good, and the results were credible. The VIF value equaled 1.816, indicating no multicollinearity problem between variables. After stepwise linear regression analysis, the regression coefficient results on the overall satisfaction were derived and they are displayed in Table 4.21: OLC, ICI, OCFE, OCSI. These four variables ( $P < 0.05$ ) were entered into the regression equation to explain 89% of the variation in satisfaction quantity. According to the standard coefficients, OLC was 0.094, ICI was 0.315, OCFE was 0.501, and OCSI was 0.079, indicating that these four dimensions had a positive impact on

international students' online learning satisfaction during the epidemic. Therefore, the regression equation could be summarized as:

$$\text{Satisfaction} = 0.07 + 0.094 * \text{OLC} + 0.315 * \text{ICI} + 0.501 * \text{OCFE} + 0.079 * \text{OCSI}.$$

This study, using SPSS 22.0, performed descriptive analysis to explore the international student participants' responses fit with the satisfaction conceptual models. The research calculated Cronbach's  $\alpha$  coefficient values to assess the reliability of the scales. Descriptive statistics were computed. The results in Table 7 showed the international students in northwestern universities were at a moderate level of satisfaction with online learning and the faculty-students engagement during the pandemic.

Pearson's correlations were calculated between all variables, employed to study the correlation between OLC, ICI, OCFE, OCSI. Student satisfaction was positive directed, while correlation degree was strong and significant. Therefore, OLC, ICI, OCFE, and OCSI could be used as influencing factors to explain the online learning satisfaction of international students.

Multiple regression analysis was also performed to explore the predictive power of OLC, ICI, OCFE, and OCSI for international students' online learning satisfaction. All of these were influencing factors to explain the satisfaction of international students, that is, the four factors above can be used to analyse online learning satisfaction. The above four factors are presented in the form of formulas according to the results of model regression analysis, and they affect student satisfaction in different proportions.

## **5. Discussion and Conclusion**

This study explored the satisfaction of international students learning online during the COVID-19 pandemic in China. By conducting in-depth interviews with nine international students from different countries and academic backgrounds, the study sought to understand their experiences, challenges and obtain their perceptions of online learning. Four categories were derived from thematic analysis: (a) Online learning Content, (b) In-class Interaction, (c) Out-of-class Faculty-student Engagement, and (d) Out-of-class Student Initiative.

Through mixed methods combining qualitative and quantitative approaches, a fairly in-depth understanding of the level of contentment among international students throughout the pandemic was obtained. A limitation during the qualitative data collection was that only a relatively small sample of respondents was available on campus during the COVID-19 pandemic. It was the reason why only nine interviews from three disciplines at three universities with the highest international student number were included in this study. Nonetheless, the findings were very informative and insightful. It was rather clear that despite experiencing the COVID-19 lockdown, online learning allowed international students to continue their in-class learning routines and activities. Besides, despite travel restrictions and campus closures, all three universities in the study provided international students with flexibility in learning arrangements, allowing them to study remotely at their home countries during the pandemic and the first-year post-pandemic. Nevertheless, unavoidable problems, for example, Internet connectivity and software compatibility issues were reported. Some interviewees felt that the online learning environment led to reduced engagement with course material and their instructors, affecting the quality of education received. All in all, however, the international students in the study acknowledged that online learning conferred benefits, while the contributions of the faculty members and university staff to international student satisfaction were also highlighted.

As for the quantitative data, the responses to the questionnaire disseminated through a digital apps named *Wenjuanxing* were quite encouraging as the international students in China were generally familiar with the apps. Findings from the questionnaire revealed that students' satisfaction was affected by four dimensions that reinforced online learning and faculty-student engagement as the influencing factors to international student satisfaction during and post-pandemic.

Although exploratory as it was conducted at only three universities with the highest student number in northwest China, the findings of the study have further illuminated online learning experiences among international students in China. These findings somewhat concur with those of Huang et al. (2021), who investigated the relationship between faculty engagement and the mental health of international students during the COVID-19 epidemic in China, which reported that faculty engagement positively influenced the mental health of international students, particularly in the areas of emotional

support and communication. Faculty members who actively engage with their international students can provide valuable support and guidance, which can help students navigate the challenges they face. Engaged faculty members can also create a sense of belonging and community for international students, which can enhance their overall satisfaction with their academic experiences. During the pandemic, faculty engagement became even more critical, as international students faced unprecedented challenges related to online learning, travel restrictions, and social isolation. Hence, it is vital for universities in China to prioritize faculty engagement and provide adequate training and support to ensure that faculty members are equipped to meet the unique needs of international students during challenging times such as in a pandemic.

Since China's educational context varies across regions and considering that this study only provided findings from the northwest region, the results may not represent the entire population of international students in China. Future studies could contribute to a better understanding of the challenges and opportunities presented by online learning and living for international students' satisfaction in other provinces in China. In addition, a larger sample size which includes a larger coverage of the nation may further inform the development of effective strategies and policies in line with China's government policy that supports international education and places much importance on the well-being of international students.

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**APPENDIX (A)**

A Sample of the Coding of Interview Transcripts of This Study

Student No.	What are some of the problems you faced in online learning?	Coding		
		Descriptive Labeling (Level 1 Coding)	Conceptual Labeling (Level 2 Coding)	Thematic Labeling (Level 3 Coding)
A1	Some online courses may rely solely on one-way communication, the course only involves listening to pre-recorded lectures and submitting assignments, we may miss out on the valuable insights and perspectives that their faculties can bring to the discussion.	One-way communication, pre-recorded lectures and submission of assignments (online)	The passive learning approach	In-class interaction
A2	The professor presents a concept and asks us to brainstorm ideas for a project related to the concept. We can use a chat feature or a virtual whiteboard to write our ideas. Sometimes the professor waited for a response, but no student may volunteer to answer. We can tell that the professor was frustrated and disappointed.	No volunteer to offer answers (to the professor).	A lack of participation or engagement	In-class interaction
A3	I loss interest to talk to my lecturers, I also loss interest to discuss things with my classmates when it is online.	Loss of interest to communicate online	Lack of motivation for class interaction	In-class interaction

Student No.	What are some of the problems you faced in online learning?	Coding		
		Descriptive Labeling (Level 1 Coding)	Conceptual Labeling (Level 2 Coding)	Thematic Labeling (Level 3 Coding)
E1	Sometimes, it is hard to focus on the content of the courses during the online classes. It's unlike in traditional classroom setting that we can comfortably raise the key points which we don't understand.	Cannot comfortably raise questions in online classes.	Unease to raise questions during online learning	In-class interaction
E2	The videos assigned by the professors are in Chinese and hard to understand. We are not native Chinese speakers. My classmates and I find it difficult to understand its content.	Videos in Chinese is hard to understand.	Videos unfit for learning	Online learning content
E3	Chinese language learning needs to communicate with more people, ... there is limited time to interact that during the online learning.	Limited time to interact during online learning	Limited interaction time	In-class interaction
M1	When classes become online, just depending on chats or virtual lectures, everything becomes monotonous and uninteresting. We have to learn things without any practical involvement.	Online and virtual lectures are monotonous. No practical involvement	Online learning lacks practical component	Online learning content
M2	Medical subjects require hands-on practice and lab work, but online courses may not provide such opportunities, which could affect students' learning outcomes and interest.	Lack of hands-on practice and lab work in online courses	Limitations in online learning	Online learning content
M3	I don't have my teacher's close supervision during online classes; I feel sleepy and bored sometimes.	Lack of teacher's close supervision in online classes	Distant feeling in online classes	In-class interaction



## **Unraveling Chinese Bilateral Diplomatic Behavior: Evidence from Post-Coup Sino-Myanmar Relations, a Rational Choice Approach**

Diya Jiang\* and Kristina Kironska<sup>o</sup>

\*Department of Political Science, McGill University

<sup>o</sup>Department of Asian Studies, Palacky University Olomouc

### **Abstract**

Attempting to understand the strategic motives and geopolitical interests behind Chinese actions in bilateral international relations, this paper examines Beijing's reaction to the 2021 Myanmar Coup. Adopting a rationalist approach, the paper conducts cost and benefit analysis through game-theoretical lenses and categorizes Chinese interests as expansionary and defensive, both contributing to its potential payoff in bilateral exchanges. Applying the resulted model to the Post-Coup Sino-Myanmar interactions in which Beijing's attitude shifted from the initial ambiguity to more favorable stance towards the Tatmadaw, the authors find that such shift can be attributed to a changing reality of China's perceived political and economic outcomes at different time periods. In addition to offering insights into ongoing China-Myanmar relations, this article identifies key patterns of the decision-making process taken by Beijing. It argues that, when countries engage with China bilaterally, they will likely face a more volatile, daring player willing to take more controversial actions.

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\* Diya Jiang is PhD Candidate, Department of Political Science, McGill University, Canada

<sup>o</sup> Kristina Kironska is Assistant Professor, Department of Asian Studies, Palacky University Olomouc, Czech Republic

**Keywords:** *China's Diplomatic Relations, Chinese Strategic Interests, China-Myanmar Post-coup Relations, Cost-Benefit Analysis*

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## **1.0 Introduction**

The turn of the century marks China's rise as an important player on the global stage. Following its decades-long growth, China transformed from an influence recipient to a competitor seeking to spread its influence not only in the Asia Pacific but also globally. In fact, it can be argued that the world has now entered a stage of bipolarity where the rising regional hegemon China is competing with the US. Many scholars have highlighted Chinese expansion in not only economic power, but also military and global institutional influence in past decades, arguing that it poses challenges to the US-centric liberal world order (Friedberg, 2012) (De Graaff et al., 2020). It has become even more challenging for western allies in the Asia Pacific such as Australia and Japan to engage with Beijing. Medcalf (2018) in particular, highlighted a shift in Australia-China relations since 2016, highlighting the difficult reality of under the current hegemonic competition. As a result, it becomes not only important but also decisive to study China under the changing global context. However, along with its significant rise in global and regional roles, Beijing's diplomatic style and behavior in international relations have changed dramatically and thus became much less predictable in recent years (Roland, 2021) (Haenle and Tcheyan, 2020). Moreover, its increasing effort to establish economic and diplomatic relations in different parts of the world, some of which it had traditionally been distant from, combined with its tendency to make unpredictable moves have made understanding its diplomatic behavior ever more difficult. Among IR scholars, there have been debates over the changing pattern of Chinese international relations and foreign policy orientation and behaviors. Some argue that Chinese foreign policy has taken a turn towards a more aggressive and assertive orientation (Liao, 2018). Many described Chinese foreign policy under Xi Jinping as "Wolf Warrior Diplomacy" (Brandt and Schafer, 2020) (Sullivan and Wang, 2022), a term used to highlight Beijing's aggressive words and combative attitude, an attitude that seems to contradict the cooperative rhetoric often used under previous leaders (Daekwon, 2017). However, others believe that occasional assertiveness remains one of the typical and traditional characteristics of Chinese diplomatic attitudes (Jerdén, 2014). Nevertheless, scholars studying China seem to agree on the surge of assertiveness in China's diplomatic style, despite holding different opinions regarding the dynamics of the change.



Despite the surge of research literature focusing on Chinese diplomatic behavior in newly developed areas such as Latin America and Africa (see (Jenkins, 2012; Thrall 2015; Pu and Myers, 2021), the Asia-Pacific remains a pivotal region for China. Indeed, in addition to China's historical and cultural connection to the area, economic and political power consolidation in the region is crucial to China's status as a global power (Scobell et al., 2020). As the Asia-Pacific is geopolitically diverse and has been frequently subject to domestic economic and political disturbances, Chinese diplomatic ties with many countries in the region are frequently being put to test. Given its importance to China and the possibility of these conflicts affecting China's domestic stability, diplomatic responses are often carefully calculated to maximize favorable outcomes in Beijing's interest. Studying these diplomatic exchanges under such circumstances can thus offer countries invaluable insights into Chinese international behavior and shed light on how to engage with an ever-changing China on a global stage.

Having established the importance of studying Chinese diplomatic behavior under the changing context of the Asia Pacific, we have chosen to study Beijing's responses following the 2021 Myanmar Military Coup d'état through a rational choice approach. The case is indeed an example of how an unexpected political disturbance in a neighboring country can pose challenges to China's diplomatic relations within a region. Analyzing and understanding the steps Beijing has taken since the Coup can thus offer insights into China's diplomatic behavior with countries around the world. The importance of holding Myanmar close is undeniable for China. With its pivotal geographical position, a well-established relationship with Myanmar can help advance China's Belt and Road Initiative (BRI) projects and achieve a strategic presence in the Indian Ocean. Mannan (2020) argued that in addition to geopolitical interest, Sino-Myanmar relations are pivotal to China's balance of power against the US in the Asia-Pacific. He highlighted that partnership with Myanmar in various economic and developmental aspects can help balance the US's presence in the region and thus empower China and safeguard its interests (Mannan, 2020). In his book, Zhao (2015a) also pointed out that Myanmar holds a pivotal place in China's energy and resource access in the Southeast Asian region. However, with the unforeseen and sudden change brought forth by the 2021 coup, Beijing had to choose the best possible strategy for a continued beneficial relationship. Beijing's initial ambiguous attitude towards the coup favored neither the Tatmadaw

or the protest movement. However, this paper argues that Beijing gradually shifted towards the Tatmadaw in the later months as it became increasingly costly to appear neutral.

Adopting a rational choice approach, the authors examine a series of diplomatic exchanges following the 2021 Myanmar coup. Identifying key patterns of Beijing's response and attempting to better understand its decision-making process in the Sino-Myanmar case, the authors construct a cost-benefit-analysis model rationalizing Chinese strategic interests when engaging in bilateral relations. Through the construction and application of such model, this paper attempts to explain how different Chinese interests interact and eventually lead to Beijing's shifting attitude in leaning towards the Tatmadaw. In addition to unraveling the motives and interests behind Beijing's shifting attitude and analyzing the event through a more systematic lens, the authors hope to identify important patterns of Chinese behavior and offer insights into future diplomatic exchanges with China.

This paper will start with a section outlining the history of diplomatic interactions between China and Myanmar following the February Military Coup in 2021. Adopting a game theoretical approach, a model based on Chinese diplomatic interests and engagements will then be constructed and an analysis of Beijing's attitude using a game-theoretical approach will be elaborated in the following section. The general application of our model to other scenarios concerning Chinese bilateral engagement will be explained in the third section. The final section will conclude with the findings and policy implications of the article.

## **2. Beijing's response to Myanmar's coup**

China and Myanmar share a long history of diplomatic relations, although subjected to frequent changes due to domestic and international factors. Nevertheless, the pre-coup Sino-Myanmar relations had been on the friendly side under the Aung San Suu Kyi government (Han 2021). The relatively warm relationship between China and its largest neighbor suggests that Myanmar had helped to alleviate the border and security-related concerns China had. Much of the past bilateral interaction between the two countries had been focusing on fostering closer ties through additional economic engagement. Myanmar officially joined the BRI in 2017, when Aung San Suu Kyi attended a BRI forum held in Beijing (Yhome, 2018). Since then, the two countries had deepened their economic and diplomatic ties through

various economic projects. Indeed, China remains one of the top investors in Myanmar, contributing to an accumulated 21 billion US dollars of Foreign Direct investment as of March 2020 (Samsani, 2021). Diplomatic visits between the two countries also showcase a warm relationship. Since Suu Kyi's first official visit to Beijing as a state counselor in 2016, the two countries have frequently arranged diplomatic visits and exchanges. In 2020, Xi Jinping paid an official visit to Myanmar celebrating 70 years of diplomatic ties between the two and promoting further bilateral economic ties (Oo and Win, 2020). In fact, in January 2021, just weeks before the Myanmar Military staged the Coup, then Chinese Foreign Minister Wang Yi made a visit to Myanmar (Moon, 2021). Ready to contribute to Myanmar's effort to fight against the Covid-19 pandemic, Wang was welcomed by State Secretary Aung San Suu Kyi and President Win Myint (Moon, 2021).

After the Military Coup took place, many countries expressed their immediate concerns and denounced the military regime. Many, including the US, UK, and Canada imposed various sanctions on the Myanmar Military (Reuters, 2021a). China, however, remained very cautious in its comments on such political change. Its hesitation in expressing any negative attitude towards the Myanmar military can be shown through Beijing's ambiguous rhetoric. Initially it only "noted" the coup in Myanmar and expressed hopes for all sides to uphold stability (Reuters, 2021b). Chinese state-owned media referred to the situation in Myanmar as a "cabinet reshuffle" and avoided the term "Coup" in their reporting (Xinhua, 2021). A few weeks into the coup, Beijing started promoting a resolution of the Myanmar crisis in the ASEAN forum, emphasizing the prevention of foreign influence and intervention and the avoidance of violence "on all sides" (Chongkittavorn, 2021).

Beijing's ambiguous rhetoric toward the Myanmar coup was perceived negatively by the population in Myanmar. It further fostered accusations by Myanmar protesters that China had been informed about the coup in advance or was even directly involved in it. As a result, anti-China sentiment surged in Myanmar, leading to a series of destructive actions towards Chinese-owned assets, the boycott of Chinese goods and the destruction of Chinese flags. In March 2021, Chinese-owned factories in the outskirts of Yangon were set on fire, leading to the death of 38 people, although the identity of the actual perpetrators was never confirmed (Regen, 2021). In May, 32 China-backed factories were torched in the Hlaingtharyar Industrial Zone (Chaudhury, 2021). Later in June, another factory in Ayeyarwady was

attacked with explosives (Irrawaddy 2021a). China expressed concerns over the safety of Chinese nationals and Chinese-owned businesses and urged Myanmar to take measures to protect ‘properties of Chinese companies and personnel’ (Global Times, 2021). However, it continued to avoid expressing any sign of condemnation of the Myanmar military in its statement.

Further contributing to the unclear position of Beijing was that China seemed to be “playing both sides”. Indeed, while China remained in contact with the Myanmar military, it also made contact with the pro-democracy side under China’s multilayered approach – the ‘party-to-party’ platform has been used to engage with the deposed National League for Democracy (NLD) (The Irrawaddy, 2021b) (Peter, 2021). China may be very much aware that, although the junta leader Min Aung Hlaing claimed victory, the State Administration Council has no legitimacy, and the junta will need to look for an exit strategy. This strategy could potentially involve a political compromise with the NLD. Keeping in mind that China’s foremost goal is stability in its vicinity and the maintaining of its economic corridor (with its gas and oil pipelines) leading to the Bay of Bengal, China is already eyeing the next elections in Myanmar and hopes for a balanced outcome between the military and the NLD. Such interest may have contributed to China’s initial effort in working towards preserving the legitimacy of the NLD, although the military has signaled several times the dissolution of the party (The Irrawaddy 2021c). Such effort can also be seen when China cooperated with the US on an agreement blocking the coup regime from attending the UN General Assembly meeting in September 2021, adding further ambiguity to its position (Lynch et al., 2021).

While Beijing’s initial attitude can very much be seen as ambiguous and its behavior of engaging with both sides seems to be an act of balancing, a few months after the Coup, China seems to have become increasingly edging closer to Myanmar’s new military regime. The first explicit show of this attitude is a Facebook post from June 2021 following the meeting between Min Aung Hlaing and the Chinese ambassador to Myanmar, in which the coup leader was described as the "Leader of Myanmar" (Chinese Embassy in Myanmar, 2021). Chinese state-owned media, which usually directly reflects Beijing’s position soon took over such rhetoric (Jiang and Kironksa, 2021). From this moment onwards, the leaning towards the Tatmadaw became ever clearer – the Myanmar junta was invited to various international meetings organized by China, such as the BRI meeting, the ASEAN-China Foreign

Ministers, and the Mekong-Lancang Cooperation meeting (The Irrawaddy, 20221d). In September 2021, a Chinese special envoy met with the junta leader in Myanmar (Kurlantzick, 2022). Moreover, several projects to be implemented in Myanmar have been approved by the junta and China delivered Covid-19 vaccines to Myanmar in fall 2021 (Chaudhury, 2021). Internationally, China even lobbied for the junta's attendance at various international events despite opposing voices from ASEAN states. Moreover, during foreign minister under the Military regime Wunna Maung Lwin's diplomatic visit to Beijing in April 2022, Wang Yi aired China's support for Myanmar disregarding "situation changes", a statement many sees as a clear sign of support for the military regime (The Associated Press, 2022). Most recently, in May 2023, Chinese Foreign Minister Qin Gang visited Myanmar, highlighting the existing Sino-Myanmar friendship and expressing China's will to boost further ties (Al Jazeera, 2023).

This shift in attitude from a seemingly neutral stance to increasingly supporting the Tatmadaw may seem puzzling at first glance. Indeed, during the early period following the Coup, many were hoping that China could act as a mitigating force encouraged by its significant economic interests at stake (Kurlantzick, 2022). However, the reality seems to suggest otherwise. What made Beijing change its rhetoric in regards to Myanmar? Understanding the decision process behind such shift may be able to provide insights into Chinese diplomatic behaviors. The next section will thus investigate the strategic interests behind Sino-Myanmar relationship through the lenses of rational choice theories.

### **3. A Rational Choice Approach**

In order to better examine China's diplomatic behavior, we have constructed a cost-and -benefit model, theorizing China's actions and its general strategic interests. The foundation of our rational actor model for Chinese incentives and the deductive logic of consequence come from game theory. Game theory is frequently used to help understand international relations, especially focusing on incentives and interests behind decision-making. Indeed, many scholars had used game theory as an instrument to understand diplomatic interactions such as the formation of international alliances (Gardner, 1995) (Powell, 1999), arms and deterrence races (Gleditsch, 1990), (Reuveny and Maxwell 1998), and international crises (Evans and Newham 1998). However, the popularity of game theory as an instrument for political

scientists has decreased in recent years, largely due to the limitations of its rational actor assumptions. Scholars studying China in International Relations have nonetheless benefited from the logical deductive nature of game theoretical applications. Farroqui and Niazi (2016) argue that the multidisciplinary nature of such approaches and their focus on strategic thinking makes them a useful tool to be applied in complex situations. In their paper, Cole et al. (2014) also argue that game theoretical approaches are particularly useful to “penetrate to the core of complex decision-making challenges” and urge researchers to consider them as an option. Scholars have long adopted game theory models in analyzing Chinese bilateral diplomatic exchanges. Benson and Niou (2007) in particular, used a game theory model of economic linkage and peace to better understand the seemingly conflicting rise in both economic dependence and political hostility in China-Taiwan relations. We argue that our rationalist approach which borrows important modelling technique from game theory can be useful to study Chinese behavior in international relations, as the model can help to isolate noises and focus on key factors defining Chinese strategic interests. Moreover, the process of logical deduction can help infer patterns of Beijing’s diplomatic decision and thus provide invaluable policy implications.

For our cost-benefit model, the game is defined as a two-player non-zero-sum game where Player 1 is the Chinese state and Player 2 is the state engaged in diplomatic exchanges. Player 1 is presented as having three possible actions: to support ( $S_1$ ), to not support ( $S_2$ ) and to remain neutral ( $S_3$ ) and Player 2 two: to cooperate ( $s_1$ ) or not to cooperate ( $s_2$ ). Beijing’s interests are analyzed and presented as different components of its utility function. The model set the current utility balance for China and any Player 2,  $U_0$ , as the initial point, where  $U_0 = 0$ .

The constructed model allows us to gain an understanding of the decision-making process of Beijing based on its behavior following the Myanmar crisis, in which Player 2 is the Tatmadaw. While we acknowledge the importance of other actors such as the NLD, civilian protest groups and the ethnic armed groups, we believe that Tatmadaw should be focused on as the main player, as the post-coup diplomatic exchanges had primarily been between Beijing and the Military. This application can help better understand the motives behind Beijing’s reaction under changing circumstances and thus provide insights into its shifting attitude after the Coup.

Through mathematical and logical deduction, the model offers insights on factors motivating Chinese diplomatic moves. In addition, it identifies important patterns of Chinese behavior and provides insight into future diplomatic exchanges with China for other countries. As the model only intends to construct a cost-benefit analysis for China as a rational actor, it does not include Player 2's utility function. This is because the paper aims to push forward a rational choice and logic of consequence approach on analyzing Chinese diplomatic decision-making, instead of constructing a complete game theory model, which may be hard to apply empirically. However, acknowledging that Player 2's interest may also affect the utility outcome, we encourage future research to further investigate the utility function of Player 2 and complement the model.

#### **4. Expansionary Power**

Chinese interests are defined as expansionary and defensive. The existence of such a division has long been established by the competing schools of offensive and defensive realism in IR (Mearsheimer, 2001) (Walt, 1987). Expansionary power refers to the expansion of political, military, or economic power to spheres further removed from the national core; the loss of such power does not threaten the survival or physical security of the regime. Defensive power, on the other hand, is the ability to defend one's territorial integrity and border security. The loss of it can directly endanger the regime's long-term survival. Although structural realists have put a particular emphasis on the military aspect of expansionary power, the military expansionary agenda has been relatively unimportant in Chinese foreign policy. Holding economic and political power globally, on the other hand, had risen to be a pivotal part of Chinese strategic interests, with the launch of BRI marking an important step in Beijing's international agenda (Clarke, 2017). Hence to account for this interest, the model assigns an expansionary power component to the Chinese utility.

An important variable for such power is indeed the BRI, as it provides effective leverage over host countries for China. Indeed, many see the BRI as a means to develop an effective Sino-dominated market and provide effective statecraft under Xi (Chatzy and McBride, 2020). Most BRI projects are invested, however, by Chinese state-owned enterprises rather than the state, and thus the economic returns do not directly contribute to the government. These enterprises are also not engaged in profit-maximization, but instead

further the political agenda of the government (Fan et al., 2007). As a result, the utility component for the BRI implication excludes these short-term economic benefits. The utility of BRI gain is expressed as a function of the investment amount of each of the projects that are moving forward or new projects adding into the region, and GDP:  $U(x_g, \text{GDP})$ . The BRI loss when existing projects become stalled or canceled can be expressed as  $U(x_l, \text{GDP})$ . The GDP of player 2 is included as a variable to account for the relative economic leverage China has over the region.

As the level of importance of BRI projects differ in different national and international context. We account for the relative importance and the geopolitical importance of the player by adding a multiplier term to the utility function. It amounts to values between 1 to 3: with 1 representing little influence on the overall outlook and the rhetoric of the BRI, and 3 donating fundamentals for such completion and Chinese geopolitical influence. In the case of Myanmar, for example, such multiplier is likely to take a high value, as it constructs an inseparable part of the BRI project. The model also considers the possible cost of a negative shock of Chinese expansionary power  $\pi_c$ . This may include a large-scale cancellation of BRI projects and other Chinese involvement in the entire region, or when the “One China Principle” becomes discredited globally as a result of Player 2’s actions.  $\pi_c$  may occur when there is extreme damage to China’s reputation based on its actions. The cost is expressed with  $C(\pi_c)$ . The probability of the negative shock  $\Phi(S_i, \pi_c, t_i)$  is also a function of the current state of world  $t_i$ , as the influence of taking action  $S_i$  can differ significantly depending on the world state. Allying with Islamic extremist groups before and after 9/11 would, for example, incur different levels of damage to reputation. An alliance formation, immediately following the tragedy or years after such an event, can also incur different possibilities of extreme damage to reputation. Generally speaking, such probability is quite low, as the drastic change would trigger not only consequences for China but the entire international system, which would affect many other countries. However, given the increasingly intensified hegemonic competition between the United States and China, such probability may be increasing.

## 5. Defensive Power

Security concerns are one of the most important defensive interests of the Chinese government, as it directly influences domestic stability and the



regime's legitimacy. Indeed, as nationalism has traditionally been a powerful and effective tool to reinforce the state's legitimacy and maintain ideational loyalty among Chinese citizens and has been adopted frequently under Xi's leadership, domestic security thus remains a top priority for Beijing (Zhao 2016). Security concerns are particularly salient in interactions with countries with close geographical proximity. When China shares a border with the country in question, security issues such as the inflow of uncontrolled refugees and border security crisis may occur. The impact on security can be drastically different, however, in countries far away. To account for such differences, the model adopts  $\alpha$  as a term to account for geographical proximity, with  $\alpha = 1$  for countries that share borders with China and  $\alpha = 0$  for those that do not. The cost arising from security concerns is expressed as follows:

$$\begin{cases} C(p, d, m) & \text{if } \alpha = 1 \\ C(a, M) & \text{if } \alpha = 0 \end{cases}$$

Conflicts in one state can indeed often spread to neighboring countries, invoking security costs (François and Sud 2006). The study adopts concepts from previous research and expresses the cost as a function of distance to the potential conflict region  $d$ , the population of the country facing internal conflict  $p$ , and the military capacity of the conflict  $m$ , measuring the severity of the conflict (Murdoch and Sandler 2003). Empirically, the closer the conflict zone, the higher the military capacity and the more populated the country is, the higher the security cost. Both the proximity of the conflict and the country's population could influence the number of refugees crossing the border, increasing the cost of settlement and potential violence domestically. China with its strict refugee policy is neither well-equipped nor particularly willing to handle a large inflow of refugees, and such cost can be expected to be higher than that of countries with a more open refugee policy. When Player 2 does not border with China, the cost incurred by security issues is much less direct. It is expressed as a function of the number of close alliances player 2 has in the Chinese neighboring region  $a$ , and military presence in the Asia-Pacific,  $M$ .

Although empirically rare in recent years, it is possible for a country to gain defensive power when a new friendly relationship is established with a new partner. An example of such gain is a newly established agreement

with a neighboring country leading to more physical and economic efforts dedicated to the physical border. This also depends, however, on factors such as the proximity to China, the military capabilities in the region, as well as the amount of domestic resources available to be dedicated to border security. The probability of defensive gain is very low, however, when the player does not border China and has no important link with Asia Pacific. To account for such variation, we assign a control term  $\beta$ , which takes value between 0 to 1, where  $\beta=0$  for a country sharing no border and having no geopolitical presence in the Asia-Pacific. As the country's potential influence and its geographical proximity with China grow,  $\beta$  gets closer to 1. The function of the gain would therefore take the forms of  $\beta * G(p, l, m)$  where the gain in defensive power is dependent on the size of the country, accounted by population  $p$ , the length of shared borders  $l$ , and the military capabilities  $m$ .

The shock term  $\pi d$  is included to account for possible shock in defensive power in which the loss of one ally creates a domino effect, leading to the loss of a series of regional and international allies. Such shock can also be seen as the collapse of China's balance of power, leading to China holding little to no voice globally. The result of such shock is detrimental and can potentially threaten the existence of the current regime. Such an event can only occur when there is a loss of balance of power:  $\Phi(S_i, \pi d, t_i) = 0$  if  $\Delta DP \geq 0$ .

It is important to note that in comparison to expansionary power, as defensive power directly affects the survival of the regime, sustaining the current defensive power is always preferred to obtaining additional expansionary power. Within the defensive power, it needs to be acknowledged that the magnitude of the unlikely event  $\pi d$  has a larger cost than all other costs combined:  $C(\pi_d) > C(p, d, m)$ . Intuitively, the cost of a negative shock of allies is much larger and more unsustainable than partial security concerns. Similarly, the shock of large-scale cancellation of BRI and other projects  $\pi e$  is also much larger than the cost of project failure in a single region and thus  $C(\pi_e) > U(x_j, GDP)$ .

The mathematical expression of the utility function for both defensive power and expansionary power can be found in the appendix.

### 6. The Utility Function and Payoff for the Chinese Government

In this section, an utility outcome table is presented, along with equations for each possible action taken by China. A more detailed explanation and the process of mathematical deduction can be found in Appendix 1. The basic idea is that the possible consequence and payoff for China after choosing action  $S_i$  is a function of possible change to expansionary and defensive power relative to its current state of balance of power.

**Table 1. Chinese Payoff Table following the Myanmar Coup**

		Player 2: Myanmar Military	
		$s_1$ : cooperate	$s_2$ : not cooperate
Player 1: China	$S_1$ : Support	$U(S_1, s_1)$ = defensive gain + expansionary gain	$U(S_1, s_2)$ = defensive loss + equal chance of expansionary gain and loss
	$S_2$ : Not Support	$U(S_2, s_1)$ = equal chance of expansionary gain and loss + no defensive loss	$U(S_2, s_2)$ = defensive loss + expansionary loss
	$S_3$ : Neutral	$U(S_3, s_1)$ = no change	$U(S_3, s_2)$ = defensive loss + expansionary loss

*Equation 1 Utility Payoff of action  $S_1$*

$$U(S_1) = \Phi(S_1, x_i) * \psi[U(xg, GDP)] - \Phi(S_1, \pi_e, t_i) * C(\pi_e) + P(s_1) * \Phi(S_1, G) * \beta * G(p, l, m) - P(s_2) * \{\Phi(S_1, C) * C(p, d, m) + \Phi(S_1, \pi_d, t_i) * C(\pi_d) + \Phi(S_1, xl) * \psi[U(xl, GDP)]\}$$

*Equation 2 Utility Payoff of action  $S_2$*

$$U(S_2) = -\Phi(S_2, \pi_e, t_i) * C(\pi_e) - \Phi(S_2, xl) * \psi[U(xl, GDP)] + P(s_1) * \{\Phi(S_2, xi) * \psi[U(xi, GDP)] + \Phi(S_2, G) * \beta * G(p, l, m)\} + P(s_2) * \{-\Phi(S_2, C) * C(p, d, m) - \Phi(S_2, \pi_d, t_i) * C(\pi_d)\}$$

*Equation 3 Utility Payoff of action  $S_3$*

$$U(S_3) = P(s_2) * \{-\Phi(S_3, C) * C(p, d, m) - \Phi(S_3, \pi_d, t_i) * C(\pi_d) - \Phi(S_3, xl) * \psi[U(xl, GDP)] - \Phi(S_3, \pi_e, t_i) * C(\pi_e)\}$$

## 7. Explaining China's shifting attitude in Sino-Myanmar Post-Coup Relations

This section attempts to apply the model to the case of the Post-Coup Sino-Myanmar relationship in explaining the shift in Beijing's attitude towards the Tatmadaw. Firstly, we assign values to the two multipliers based on the characteristics of player 2. As Myanmar shares a border with China and controls its strategic access to the Indian Ocean, the control term  $\beta$  is close to 1 and the multiplier term  $\Psi \geq 2$ . We then look at the relative magnitude of defensive gain and loss. Considering the previously relatively warm relationship between China and the NLD government, and thus a fairly well-established defensive system between the two, the potential loss of defensive power is likely to be higher than that of the potential gain  $C(p,d,m) > G(p,l,m)$ . Similarly, the relative magnitude of expansionary gain and loss is assessed. As indicated in the previous section, although Chinese economic engagement has been active in Myanmar, with major BRI projects moving forward, its local reputation is subject to improvement. Progress on existing projects and establishment of new ones could contribute to expansionary utility gain; suspension of projects, either due to unfriendly diplomatic relations or strong public objections can incur an expansionary loss. It is therefore assumed that the value of potential gain and loss are similar:  $|U(xg,GDP)| \approx |U(xl,GDP)|$ .

In terms of relative probability, the probability of loss of defensive power is most likely when China chooses not to support the Tatmadaw. This is because Beijing's disapproval would give the Tatmadaw less to no incentive to invest in the security of its border connected to China, raising security concerns to Beijing. Moreover, given that the military takeover has triggered a high degree of public hostility and the regime is yet to gain legitimacy, there is a possibility of civil war occurring in Myanmar. Without the economic and military assistance provided by China, the Myanmar military may find it difficult to prevent the civil war. An occurrence of a civil war can then lead to a refugee crisis and thus leads to a defensive loss to China. Therefore, as a result of the above, when China chooses to not support the Tatmadaw, the risk of border securities and refugee crisis can be much higher than if it were to support it,  $\Phi(S_2,C) > \Phi(S_3,C) \geq \Phi(S_1,C)$ . Similarly, the gain in defensive power is more likely when China takes action S1:  $\Phi(S_p,G) > \Phi(S_2,G)$ . Following the same logic, expansive power is also most likely to expand when action S1 is taken:  $\Phi(S_p,xg)$

$> \Phi(S_2, xg); \Phi(S_2, xl) > \Phi(S_1, xl) \geq \Phi(S_3, xl)$ . It is important to note that, although China cannot accurately estimate the probability of the Tatmadaw cooperating, especially since the Myanmar generals are known for their dislike and mistrust of the Chinese, it can deduce an approximate likelihood of cooperation. Given the lack of options on the Tatmadaw's side, it is fairly likely that they will cooperate with China and thus  $P(s_1) > P(s_2)$ .

The game between China and the Tatmadaw needs to be analyzed in two different periods: the one immediately following the coup  $t_1$ , and the long-term situation  $t_2$ . Indeed, the coup attracted international attention and criticism was widely circulated. As a result, openly supporting the Tatmadaw would have incurred damage to the Chinese international reputation and thus increase the risk of a possible negative shock of its expansionary or soft power  $\pi_e$  in early period  $t_1$ . Hence the probability of expansionary power shock is largest when S1 is taken, followed by similar chances for S3 and S2:  $\Phi(S_1, \pi_e, t_1) > \Phi(S_3, \pi_e, t_1) \geq \Phi(S_2, \pi_e, t_1)$  where  $\Phi(S_1, \pi_e, t_1) - \Phi(S_3, \pi_e, t_1) \geq 0.1$ . Given that Myanmar is geopolitically important for China, China's open condemnation would have increased the chance of defensive power shock  $\pi_d$ , as:  $\Phi(S_2, \pi_d, t_1) > \Phi(S_3, \pi_d, t_1) \geq \Phi(S_1, \pi_d, t_1)$ . As a result, the model shows that at the immediate period  $t_1$ , the utility output of taking a neutral position  $S_3$  is higher than that of  $S_1$  and of  $S_2$ :  $S_3 > S_1 > S_2$  as  $U(S_3) > U(S_1) > U(S_2)$ . In this case, remaining neutral is strictly preferred to all other positions, as it yields the highest possible utility payoff to China. The above analysis contributes to the understanding of Beijing's initial hesitation and its cautious attitude. As appearing neutral is likely to lead to the best payoff scenario, Beijing avoided any statement that would present themselves as having a definite position.

The stakes, however, changed in period  $t_2$ . At this later period, there began to be a shift of media attention and news cycles to other subjects than the Myanmar Coup. Indeed, there was a significant decrease in international attention given to the February Coup and thus the chance of reputational damage leading to expansionary shock decreased significantly. In effect, retaining an ambiguous position could actually contribute negatively to China's reputation internationally at this point. This is because a long period of hesitation with ambiguous diplomatic responses with a country that China had historically been very involved with could make China appear as an indecisive player and an unreliable diplomatic partner. It could further hurt trust already established with allies in the region, as their confidence

of China supporting them during times of crisis will decrease. Such image could also cause the loss of prospective partners considering to establish new diplomatic and economic relationships. Therefore, over the long-term, appearing neutral becomes increasingly costly and thus the government is forced to take a position. In this case  $\Phi(S_3, \pi_e, t_2) > \Phi(S_1, \pi_e, t_2) \geq \Phi(S_2, \pi_e, t_2)$ . In terms of defensive shock, the relative possibility remains unchanged:  $\Phi(S_2, \pi_d, t_1) > \Phi(S_3, \pi_d, t_1) \geq \Phi(S_1, \pi_d, t_1)$ . Therefore,  $U(S_3) - U(S_1) < 0$  and thus  $S_1 > S_3$ , taking a positive position is strictly preferred to remaining neutral. Comparing the utility of taking  $S_2$  and  $S_1$ , the difference in probability of defensive shock between the two steps, combined with a much higher chance of gaining defensive and expansionary gain when  $S_1$  is taken renders  $U(S_1) - U(S_2) > 0$  and thus the Chinese utility maximizing position is likely one that is positive towards the Tatmadaw.

In the long term, Beijing is likely to become increasingly friendly to the military regime. This is because the border security and defensive power concerns make it extremely unlikely to come into direct conflict with Myanmar. Moreover, given the ongoing war between Ukraine and Russia, the possibility of Russia being able to offer any support to help establishing the latter's legitimacy becomes less likely. Therefore, the probability of them cooperating with China is a lot greater than refusing to cooperate:  $P(s_1) > P(s_2)$ . Assuming all other factors stay relatively constant in the long term, the Chinese payoff of supporting the Tatmadaw would be greater than any of the other two options. Therefore, it is rational for both economic, political and defensive reasons, for Beijing to move closer to the military regime.

## 8. General Applications and Policy Implications

Although the above model was constructed as an attempt to better understand the case of China and Myanmar, it can be applied to any bilateral relationship between China and a foreign state. It is important to note that the analysis is interested in the relative magnitude of the probability, rather than its mathematical value, as such a value cannot be accurately calculated, nor is it useful in a utility maximization comparison.

When attempting to define an optimal strategy for China, one should determine the characteristics of Player 2 to find the value of  $\Psi$  and  $\beta$ . A close neighbor with a high level of military or economic presence in the Asia-Pacific region would provide a higher value of  $\Psi$  and  $\beta$ , and thus render the potential defensive and expansionary gain a higher importance. When Player

2 does not share a border with China and has no geopolitical presence in the region,  $\beta \approx 0$  and there is hence little to no possibility of defensive power gain with the country  $\Phi(S_p, G) * \beta * G(p, l, m) \approx 0$ . The characteristics of the state can also help determine the relative magnitude of its defensive and expansionary changes. For faraway countries like Canada, who do not share borders with China have little geopolitical influence in the Asia-Pacific, the security cost function takes the form of  $C(a, M)$  and its value is likely to be low. The low value is also due to the country's low military presence in the nearby region of China. In terms of expansionary power, a country with very few existing Chinese economic activities is likely to have much larger room for expansionary power gain than loss and thus  $|U(xg, GDP)| > |U(xl, GDP)|$ . One of the most defining factors is the relative probability of outcomes of shocks for each action, as the cost of such loss is greater than other changes combined. Although  $\Phi(S_i, \pi_e/d, t_i)$  is usually low, a large difference between two possible steps could incur enormous utility loss, exceeding all other possible benefits combined. An extreme case would be Player 2 being North Korea and China choosing not to cooperate. In this case, the probability of a defensive shock occurring  $\Phi(S_2, \pi_d, t_1)$  is very high. This is because conflicts between North Korea and China would not only lead to Beijing losing a major ally and an important partner in the Asia-Pacific Region, but also lead to border chaos and Beijing's loss of voice in the region. Note that given the extremity of the shock, even a high possibility would likely be less than 5 per cent. However, although the probability seems to be quite low, when compared with  $\Phi(S_1, \pi_d, t_1)$ , which is close to 0, the outcome of a defensive loss could be enormous, as  $0.5 * C(\pi_d)$  is likely to be larger than all the other benefits combined. In general, the fear of a possible negative shock of power can often make Beijing overlook the possible benefits from having a definite position. This is particularly true when comparing the option of remaining neutral (S3) and not supporting (S2). Indeed, in most cases where ambiguity has minimal chances of introducing loss, when the option of remaining neutral is presented, China is likely to always prefer to be ambiguous rather than risking potential defensive power loss by openly disapproving. Similar logic applies to expansionary power shock, though the consequence is less detrimental as it usually does not directly affect regime survival. Such results may also explain China's silence in many of the global issues that do not involve itself or its closest allies or which infringe on the "One China Principle". In the Russia-Ukraine War,

China's ambiguity at the early stages may also be attributed to such factor. Indeed, Russia has been an important partner in Beijing's effort against the West and has an important role in China's balance of power on the global stage. Siding with the West and condemning Russia would heighten the risk of Chinese defensive power shock, in which China could not only lose its balance of power, but also face domestic criticisms on its regime legitimacy, as the ruling party's legitimacy had been built upon anti-western ideologies and sentiments. Openly supporting Russia, however, can also lead to serious consequences of expansionary power shocks. This is because as serious sanctions had been imposed on Russia by major economies of the world, siding with Russia could not only damage China's image globally, but also invites sanctions onto its own economy. In this case, appearing to be neutral, or simply trying to not have a clear position has the lowest possibility of incurring any shock and thus could yield the highest utility to China. Although the rational choice would be to remain ambiguous, as shown in the case of Myanmar long-term ambiguity may not be sustainable, and hence Beijing's gradual shift in closer ties with Russia. Different from the case of Myanmar, Russia has been a powerful partner of China and have been important in pushing back US's power globally. Continued ambiguity could significantly hurt the long-established ties with Russia. Moreover, as the hegemonic competition between the US and China continues to intensified, the importance of maintaining its current partnership and ally as a means to conserve its balance of power becomes ever more important. In this case, as an attempt to prevent loss of exiting expansionary power and despite the lasting global attention on the war, overtime China gradually edged closer to Russia. However, despite the strengthened ties over the past year, China seemed to be reluctant to provide substantial material support to Russia (Fossum, 2023)—pointing to Beijing's continued effort to maintain an apparent ambiguity as the risk of serious sanctions causing expansionary power shocks. This example further demonstrates that China is engaging in serious cost-and-benefit analysis when making diplomatic decisions. It is also important to note, however, that the expansionary shock may only occur when there is a considerable amount of Chinese soft power influence. As the Chinese leverage and reputation within the western core alliance had been quite limited, when dealing with countries within the liberal core alliance such as the US or Australia, the probability of such a shock is close to zero. This may explain why Beijing, although traditionally reserved in expressing



its opposition, has been active in expressing public condemnation towards statements and policies of western states, such as the US or Australia, in recent years.

The application of the model thus has several policy implications for countries wishing to engage with China. First, concerning a new event or an establishment of a new relationship, Chinese attitude may be subject to change over a period of time, as many factors of uncertainty may be at play in the initial time period. Countries need to be aware of the possible shift in attitude when engaging with Beijing diplomatically. Secondly, as argued above, although Beijing has traditionally tried to avoid international backlash, or in other words, tried to preserve its possible soft power internationally, it has adopted a much more daring and direct attitude in recent years. Indeed, as public opinion has taken a downturn following the Covid-19 pandemic as well as the international backlashes from the inhumane treatment towards Uighurs in Xinjiang, the so-called Chinese soft or reputational power may be close to exhaustion, which in turns could lead to Beijing's increased willingness to take more extreme actions. This has been shown through many of the more controversial actions taken by the CCP, such as cooperating militarily and economically with Iran and developing a partnership with the Taliban. Therefore, countries, especially those in the Western core alliance, need to treat China as a player that is a lot more daring and direct, not shy of public condemnation with harsh words and attitudes. Finally, the most fundamental goal of the CCP is to consolidate its power domestically and thus, on questions that could directly affect its political survival, Beijing will likely be willing to sacrifice many other economic and political interests to assure its goal.

## **9. Conclusion**

This paper has highlighted the importance of studying Chinese behavior in international relations in the current world context, especially for western allies in the Asia Pacific. We have studied the detailed exchanges between Beijing and the Tatmadaw after the 2021 Myanmar military Coup. A shifting attitude from an initial seemingly neutral position to a much more favorable attitude is identified. Constructing a rational choice model based on Chinese underlying interests and applying the game theoretical analysis to the Post-Coup Sino-Myanmar relations, we suggest that China is likely to engage more closely with the Myanmar military regime in the future. Such a shift

is likely to occur as Beijing seeks to advance its existing BRI projects and consolidate its alliance network in the Asia Pacific. Although the loss of both regional and international reputation remains a potential risk, the probability of such risk has decreased significantly. Although the analysis focuses on Beijing's reactions in 2021, it's important to note that the probability of risk for the Sino-Myanmar relationship is likely to have decreased even further due to the surge of many other high-profile and more salient international events such as the war in Ukraine taking away more of the public and political attention.

In addition to analyzing Sino-Myanmar relations, the general application of the model helps to highlight patterns of Chinese bilateral diplomatic behavior and offers important policy suggestions to countries wishing to engage with China. First, the paper argues that China seeks to gain both expansionary power and defensive power in international relations. It is important to separate the two categories as the sources of such power differ and their level of importance varies greatly. As defensive power can directly affect the regime's survival, preserving the current defensive power is always preferred over any small gain of expansionary power. As a result, China is likely to be willing to sacrifice possible expansionary gain (both politically and economically) to ensure that it doesn't face any potential territorial, security, or political defensive threat. Secondly, the paper suggests some traits of the changing Chinese diplomatic style. It demonstrates that although China has traditionally been careful in adopting provocative and controversial actions or language, such an era may have come to an end. With the downturn of Chinese expansionary power in the West, China is likely to adopt a much more direct and daring attitude, not holding back when it comes to diplomatic condemnation. In sum, the world needs to be ready for a China that is much more direct, bold, and willing to take controversial actions to ensure its own interests.

Finally, there are several limitations associated with the model in the paper. As previously discussed, the current model does not include the utility function of player 2 and given that player 2's action may impact player 1's perception of probability, it may be useful to consider Player 2's payoff when applying the model to a specific scenario. Moreover, the fundamental assumption of both players being rational players attempting to make utility-maximizing decisions may be problematic. A perfectly rational agent, in reality, may be rare, a fact that could potentially bias the result. The authors

encourage further researchers to consider potential factors or patterns of irrationalities of the players when applying the model to different situations. Furthermore, a set of Chinese strategic interests have been identified and defined to serve as utility assumptions for the model. Although the current function covers many different aspects of Beijing's interests, the assumption of these interests may be subject to change from the international state. Therefore, it is important to recognize such changes and adjust the weight of each utility payoff accordingly.

### **Appendix 1: Mathematical Deduction and Explanation of Utility Functions**

#### *Equation 1 Expansionary Power Utility Function*

$$\Phi(S_p, xg) * \psi[U(xg, GDP)] - \Phi(S_p, xl) * \psi[U(xl, GDP)] - \Phi(S_p, \pi_e, t_i) * C(\pi_e)$$

Note that  $\Phi(S_i, x_i)$  represents the probability of outcome  $x_i$  when action  $S_i$  is taken.

#### *Equation 2 Defensive Power Utility Function for countries sharing border with China*

$$\Phi(S_p, G) * \beta * G(p, l, m) - \Phi(S_p, C) * C(p, d, m) - \Phi(S_p, \pi_d, t_i) * C(\pi_d)$$

There are six possible payoff outcomes in the game, listed below:

$U(S_1, s_1)$  = Beijing gains defensive and expansionary power, but expansionary shock remains possible

$$= \Phi(S_p, xg) * \psi[U(xg, GDP)] - \Phi(S_p, \pi_e, t_i) * C(\pi_e) \Phi(S_p, G) * \beta * G(p, l, m)$$

$U(S_1, s_2)$  = Beijing loses defensive power and there is an equal chance of expansionary power gain or loss

$$= -\Phi(S_p, C) * C(p, d, m) - \Phi(S_p, \pi_d, t_i) * C(\pi_d) + \Phi(S_p, xg) * \psi[U(xg, GDP)] - \Phi(S_p, xl) * \psi[U(xl, GDP)] - \Phi(S_p, \pi_e, t_i) * C(\pi_e)$$

$U(S_2, s_1)$  = equal chance of expansionary gain and loss but the no defensive power loss and possible gain

$$= \Phi(S_2, xg) * \psi[U(xg, GDP)] - \Phi(S_2, xl) * \psi[U(xl, GDP)] - \Phi(S_2, x_p, t_i) * C(\pi_e) + \Phi(S_2, G) * \beta * G(p, l, m)$$

$U(S_2, s_1)$  = Beijing loses both expansionary and defensive power

$$= -\Phi(S_2, C) * C(p, d, m) - \Phi(S_2, \pi_d, t_i) * C(\pi_d) - \Phi(S_2, xl) * \psi[U(xl, GDP)] \\ - \Phi(S_2, \pi_e, t_i) * C(\pi_e)$$

$U(S_3, s_1)$  = no change of power = constant  $U_0 = 0$

$U(S_3, s_2)$  = Beijing loses both defensive and expansionary power

$$= -\Phi(S_3, C) * C(p, d, m) - \Phi(S_3, \pi_d, t_i) * C(\pi_d) - \Phi(S_3, xl) * \\ \psi[U(xl, GDP)] - \Phi(S_3, \pi_e, t_i) * C(\pi_e)$$

Plugging into the above function:

$$U(S_1) = P(s_1) * U(S_1, s_1) + P(s_2) * U(S_1, s_2) \\ = P(s_1) * \{\Phi(S_1, x_i) * \psi[U(x_i, GDP)] - \Phi(S_1, \pi_e, t_i) * C(\pi_e) \\ + \Phi(S_1, G) * \beta * G(p, l, m)\} + P(s_2) * \{-\Phi(S_1, C) * C(p, d, m) - \\ \Phi(S_1, \pi_b, t_i) * C(\pi_b) + \Phi(S_1, x_i) * \psi[U(x_i, GDP)] - \Phi(S_1, x_j) * \\ \psi[U(x_j, GDP)] - \Phi(S_1, x_p, t_i) * C(\pi_e)\}$$

Through factorization, we get:

$$U(S_1) = \Phi(S_1, x_i) * \psi[U(x_i, GDP)] - \Phi(S_1, \pi_e, t_i) * C(\pi_e) + P(s_1) * \\ \Phi(S_1, G) * \beta * G(p, l, m) - P(s_2) * \{\Phi(S_1, C) * C(p, d, m) + \\ \Phi(S_1, \pi_d, t_i) * C(\pi_d) + \Phi(S_1, xl) * \psi[U(x_p, GDP)]\}$$

For action S2:

$$U(S_2) = P(s_2) * U(S_2, s_1) + P(s_2) * U(S_2, s_2) \\ = P(s_1) * \{\Phi(S_2, x_i) * \psi[U(x_i, GDP)] - \Phi(S_2, x_j) * \psi[U(xl, GDP)] \\ - \Phi(S_2, \pi_e, t_i) * C(\pi_e) + \Phi(S_2, G) * \beta * G(p, l, m)\} + P(s_2) \\ * \{-\Phi(S_2, C) * C(p, d, m) - \Phi(S_2, \pi_d, t_i) * C(\pi_d) - \Phi(S_2, xl) \\ * \psi[U(xl, GDP)] - \Phi(S_2, x_p, t_i) * C(\pi_e)\} = -\Phi(S_2, \pi_e, t_i) * C(\pi_e) - \\ \Phi(S_2, xl) * \psi[U(xl, GDP)] + P(s_1) * \{\Phi(S_2, x_i) * \psi[U(x_i, GDP)] \\ + \Phi(S_2, G) * \beta * G(p, l, m)\} + P(s_2) * \{-\Phi(S_2, C) * C(p, d, m) - \\ \Phi(S_2, \pi_d, t_i) * C(\pi_d)\}$$

For action S3:

$$U(S_3) = P(s_2) * \{-\Phi(S_3, C) * C(p, d, m) - \Phi(S_3, \pi_d, t_i) * C(\pi_d) - \Phi(S_3, xl) * \\ \psi[U(xl, GDP)] - \Phi(S_3, \pi_e, t_i) * C(\pi_e)\}$$

To compare the utility returns, we can try to subtract one from another. A positive result would mean the former returns greater utility than the latter.

After factorization, the results are presented below:

$$\begin{aligned}
 U(S_3) - U(S_2) &= P(s_2) * C(p,d,m)[\Phi(S_2,C) - \Phi(S_3,C)] \\
 &\quad + C(\pi_e)[\Phi(S_2,\pi_e,t_i) - P(s_2) * \Phi(S_3,\pi_e,t_i)] + P(s_2) \\
 &\quad * C(\pi_b)[\Phi(S_2,\pi_b,t_i) * - \Phi(S_3,\pi_b,t_i)] + \psi[U(xl,GDP)] \\
 &\quad * [\Phi(S_2,xl) - P(s_2) * \Phi(S_3,xl)] - P(s_1) * \{\Phi(S_2,G) * \beta * \\
 &\quad G(p,l,m) + \Phi(S_2,xg) * \psi[U(xg,GDP)]
 \end{aligned}$$

If the above equation yields a positive result, indicating the utility return from action S3 is larger than that from action S2, action S3 is strictly preferred to S2 and thus the Chinese government is likely to take action S3. The logic applies to the comparison between S1 and S2, as well as between S3 and S1.

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## **Changes in Trade Structure and Social Relationship between China and Malaysia Under Cross-border E-commerce Culture**

Xueli Wan\*, Lee Kean Yew<sup>o</sup> and Ho Kee Chye<sup>e</sup>

\*Department of Chinese Studies, University of Malaya

<sup>o</sup>Department of Chinese Studies, University of Malaya

<sup>e</sup>Department of Chinese Studies, University of Malaya

### **Abstract**

This study examined the evolving trade structure and social relations between both nations. First, a macro-environmental analysis is conducted, considering key factors such as political, economic, societal, and technological factors that influence the Sino-Malaysian trade structure.

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- \* Xueli Wan (corresponding author), Ph.D. candidate at the Department of Chinese Studies, Faculty of Arts and Social Sciences, University of Malaya. She is currently a lecturer at the College of Marxism, Chengdu Normal University. Her research areas include China-Malaysia relation and Chinese business studies. She can be reached at <623614753@qq.com>.
  - <sup>o</sup> Lee Kean Yew is currently an Associate Researcher at the Department of Chinese Studies, Faculty of Arts and Social Sciences, University of Malaya and Associate member at Malaysian Chinese Research Centre (MCRC). Prior to completing his PhD in Economics and Administration at the Asia-Europe Institute, University Malaya, he was an academic director of the Centre for Malaysia Chinese Studies. He has undertaken scholarly work on Malaysia with a special focus on the Chinese community and has published his findings in books, conference proceedings, and bilingual journals. One of his tasks is to promote mutual understanding and communication to tap into the potential for cooperation between Malaysian, Chinese, and overseas companies. His research interests include entrepreneurial economics, innovation management, Chinese business studies, Asian ethnicity, and development studies. He joined the International Council of Small Business in 2022 to promote the growth and development of small businesses in Malaysia. He can be reached at <leekanyew@um.edu.my>.
  - <sup>e</sup> Ho Kee Chye is currently a Senior Lecturer at the Department of Chinese Studies, Faculty of Arts and Social Sciences, University of Malaya, as well as the Deputy Director of the Malaysian Chinese Research Centre (MCRC) at the University Malaya. He obtained his PhD in History from Xiamen University, China. He has served as a research executive at a Chinese community-funded college and as a researcher at a Malaysian private academic institution, the Centre for Malaysian Chinese Studies (CMCS). His research interests include the left-wing movement in Malaysia, Malaysian Chinese culture and associations, and the Cold War in Asia. He can be reached at <hkeechye@um.edu.my>

Second, variations in product sales strategies employed by Chinese and Malaysian companies are explored in the context of e-commerce sales culture. Third, the impact of the Belt and Road Initiative on changing Sino-Malaysian social relations is examined. The findings show that China and Malaysia maintain robust connections in traditional and primary product trade. However, without actively cultivating differentiated advantages and fostering cooperation agreements, China risks losing Malaysia's reliance on conventional and primary products because of cost-related considerations. Furthermore, this study highlights the significant impact of Malaysian cross-border e-commerce consumers on various factors. This study contributes to a deeper understanding of the evolving trade structure and social relations between China and Malaysia and offers valuable insights for future studies in this field.

**Keywords:** *Cross-border E-commerce, Trade Structure, The Evolution of Social Relations, Trade Volume*

## 1. Introduction

The evolving Chinese economy has induced significant reforms in the overall trade environment. The vigorous development of cross-border e-commerce has continuously narrowed the trade links between China and Malaysia. The introduction of the Belt and Road Initiative has further facilitated and streamlined trade activities between both countries. In former times, certain Malaysian products, such as durian (a tree fruit), faced limitations in terms of picking technology and international import-export policies, hindering their availability in the Chinese market. However, with the increasing popularity of the cold chain industry and the expansion of cross-border e-commerce, coupled with a relaxation of import and export policies under the Belt and Road Initiative, the trade structure between China and Malaysia has experienced noteworthy transformations.

Cross-border e-commerce is a modern trading method based on e-commerce platforms. It enables both consumers and sellers from different countries or regions to engage in online transactions, including payment and settlement, through Internet-enabled devices. Three primary modes of cross-border e-commerce are commonly adopted: Business to Customer (B2C), Customer to Customer (C2C), and Business to Business (B2B). Completing

transactions involves delivering goods through cross-border logistics (Baek and Choi, 2020). Cross-border e-commerce encompasses both imports and exports and serves as its fundamental component (Liu et al., 2021). Compared to traditional trade, cross-border e-commerce offers notable advantages such as convenience, efficiency, uniqueness, and formality. A survey conducted by iResearch in 2021, entitled *2021 China's Integrated Cross-border e-Commerce Export Industry Report*, showed that in 2021, China's cross-border e-commerce transactions reached a staggering value of 4.2 trillion CNY. Furthermore, cross-border e-commerce accounted for 12.9 per cent of China's total import and export trade, reflecting a 33.1 per cent increase from 2020. iResearch has predicted that by 2025, cross-border e-commerce will comprise over 20 per cent of China's total import and export trade. Since the establishment of diplomatic relations between both countries in 1974, China and Malaysia have experienced consistent growth in bilateral trade volume and the steady strengthening of economic and trade exchanges. The trade structure between the two countries has witnessed ongoing optimization, with an increasing proportion of intra-industry trade. Furthermore, as both economies continue to open up, bilateral economic and trade relations have reached new heights, supported by increased cooperation in mutual investment, project contracting, and tourism. Notably, Malaysia has become a crucial trading partner of China within the Association of Southeast Asian Nations (ASEAN). Therefore, studying trade issues between China and Malaysia is vital to foster sustainable economic and trade relations and maintaining positive diplomatic ties.

The future development of cross-border e-commerce is expected to remain promising because of continuous improvements in the industry chain, active participation by industry players, and the implementation of supportive national policies (Qi and Soon-Beng, 2020). Progress of cross-border e-commerce can increase a country's foreign trade and its growth is driven by government policies. In China, the government has consistently adjusted and updated policies and measures to create a favourable environment for cross-border e-commerce and to encourage entrepreneurial involvement (Bo, 2019).

In this study, the trade gravity model is employed to empirically examine the bilateral trade volume between China and Malaysia. Additionally, the bilateral trade potential is calculated and existing challenges in bilateral trade between both countries are identified and targeted solutions

are proposed. The significance of this study lies in the detailed interpretation of marketing strategies for Malaysian imported fruits in the Chinese market, considering both market conditions and consumer demand. Furthermore, this paper integrates the e-commerce model with modern sales methods to examine changes in trade structure and the evolution of social relations, particularly the business-oriented relationship between China and Malaysia. The main innovation lies in circumventing policy and technological limitations by exploring alternative forms and packaging for fresh products from Malaysian, thereby expanding their promotion and sales in the Chinese market. This study fills a gap in previous marketing research reports by specifically addressing frozen fruit products.

## **2. Literature Review**

Considerable research has been conducted on the changes in trade structure and the evolution of social relations. Yew and Xavier (Yew and Xavier, 2022) employed both analytical and empirical methods to describe the motivations underlying the development of family-owned small and medium-sized enterprises in Malaysia. Their research showed that enterprise development during intergenerational transitions is influenced by the objective setting. Over time, the succeeding generation of family enterprises tends to minimize risks and prioritize harmony. Gold and Rasiah (Gold and Rasiah, 2022) examined the institutional structure and other predictors of Africa-China bilateral trade from 1995 to 2017. Using the trade gravity model, they employed the maximum likelihood value and the dynamic deviation modified least-squares dummy econometric method to examine the institutional, geographic, and socio-economic determinants of bilateral trade between China and 18 African oil/mineral exporting countries. The findings indicated that China imported more oil/mineral products from Africa than manufactured goods and agricultural products. Furthermore, Gold and Rasiah highlighted the need for Africa to enhance its institutional structures to stimulate trade with other regions. Fang and Guo (Fang and Guo, 2013) emphasised the complex nature of enterprise growth in industrial clusters. Industrial clusters can both promote and restrict enterprise growth depending on various factors. Fang and Guo examined these effects and their impacts on the growth of enterprises in China's electronic information industry clusters. Using panel data from China's manufacturing industry,

they tested Gibraltar's law and empirically analysed enterprise growth within China's electronic information industry clusters. The results demonstrated that industrial clusters significantly influenced the growth, profitability, and longevity of enterprises. However, data from Chinese enterprises for 2006 and 2007 showed that while the electronic information industry cluster negatively affected the growth of small and medium-sized enterprises, it had no impact on large enterprises. Moreover, the innovation capacity of enterprises within the cluster lagged behind those outside of the cluster. In the context of China's electronic information industry cluster, research and development had a limited impact on enterprise growth. Conversely, the economic soundness of the region where the electronic information industry cluster is located had a more positive effect on enterprise growth within the cluster. Zhao et al. (Zhao et al., 2021) identified the entrepreneurial ecosystem as a frontier issue in the field of enterprise strategy and entrepreneurial research. They addressed research gaps by developing a multi-layered framework based on a case study of the Taobao ecosystem. Davison and Ou (Davison and Xiaojuan Ou, 2008) highlighted the increasing influence of online intermediaries in China, particularly in the B2B sector. However, few studies have considered the impact of these intermediaries on tacit knowledge or relationships, which are both critical to business processes in China. Using Alibaba, China's largest online commerce intermediary, as an example, this impact and the corresponding changes occurring on B2B platforms were examined.

In summary, researchers have extensively examined the structure of foreign trade, considering factors such as industrial structure, exchange rate fluctuations, and the influence of foreign direct investment. Related research has become increasingly comprehensive and has enabled the gradual maturation of the research system. They have contributed to enhancing the understanding of the current international landscape and have provided a basis for discussing pathways toward economic upgrading. Particularly in the context of the new circumstances, these studies provide significant value for coordinating the development of various sectors and facilitating stable and rapid economic growth.



### 3. Research Methods and Possible Innovation Aspects

#### 3.1 Document Analysis Method

Extensive research was conducted, drawing on a range of scholarly books and papers. A substantial amount of relevant data was collected to support the findings of this study. The literature primarily originated from reputable digital information resources available on campus, such as Google Scholar and CNKI. Additionally, supplementary information was obtained from credible online sources.

#### 3.2 Quantitative Analysis

The collected data on the foreign trade structure were carefully classified, sorted, and analyzed. Various calculations were performed to organise the data into tables and generate corresponding visual representations. Additionally, a mathematical model was constructed to understand the patterns and relationships within the foreign trade structure data in more detail.

#### 3.3 Hubness Measurement

The Hubness Measurement (HM) index, developed by Baldwin (Baldwin, 2008), is a metric with which trade interdependence can be quantified. The calculation of this index is presented in Eq. (1).

$$HM_j = \frac{x_{ij}}{x_i} \times \left(1 - \frac{m_{ij}}{m_i}\right) \quad (1)$$

In Eq. (1),  $x_{ij}$  represents the total export volume from country  $i$  to country  $j$ ;  $m_{ij}$  refers to the total imports of country  $i$  from country  $j$ ;  $x_i$  and  $m_{ij}$  represent the total export and import volume of countries  $i$  and  $j$ , respectively.  $HM_j$  is principally used to measure the dependence of exports of country  $i$  on the market of country  $j$ , and its value range is 0-1. The  $HM_j$  index reflects the level of dependence of the exports of country  $i$  on the market of country  $j$ . A value closer to 1 indicates a higher degree of dependence, while a value closer to 0 indicates a lower degree of dependence.

### **3.4 Trade Gravity Model**

The fundamental concept of the trade gravity model draws inspiration from Newton's law of universal gravitation. Newton's law posits that the attraction between two objects is directly proportional to their mass and inversely proportional to the distance separating them. Building on this analogy, Tinbergen and Poyhonen introduced the trade gravity model in the early 1960s.

The current study presents innovations in two key aspects: Firstly, it presents a novel research perspective. Previous academic studies on the structure of foreign trade primarily focused on differentiating industries and products. However, given the increased complexity of the global production network and the finer division of labour within products, analysing the foreign trade structure from the perspective of an intra-product division of labour is more aligned with the current reality. Secondly, this study introduces innovative research content. While previous studies have touched on various aspects of foreign trade, they often merely provided an overview of the overall development status without delving into detailed analyses of the foreign trade structure.

### **3.5 Influencing Factors and Optimisation Objectives of Foreign Trade Structure Change**

With the continuous development of international trade, the foreign trade structure of each country and region changes constantly, gradually evolving from a single low-level structure to a multiple high-level structure. In different periods, the conditions and factors that affect the change of foreign trade structure are constantly changing. The earliest foreign trade goods principally concentrated on natural products (such as food) or handmade products (such as clothing), and the types and quantities of these products traded were extremely limited. Because of the lack of transportation, the foreign trade areas of each country were very limited. Most of the countries were only trading with neighbouring countries or regions, and therefore, the number of trading countries and regions was naturally small. Today, the direction of foreign trade has shifted from the import and export of complete manufactured goods to the import and export of intermediate manufactured goods. The share of invisible foreign trade is constantly growing. Because of the promotion of the process of global integration, various countries or

regions tend to diversify their foreign trade regions. In the early stage of the emergence of international trade, the main focus of trade among countries or regions was natural products. This was because, at that time, natural conditions were the main factor affecting the structure of international trade. With the progress of productivity levels and the improvement of technology levels, the influence of natural factors on the international trade structure has declined, and both technological and social factors have become the most important factors that determine the change of the national trade structure.

Optimising the foreign trade structure aims to pursue the advanced dislocation of trade commodities. The structure of foreign trade is based on the national industrial structure, and the change of industrial structure needs the drive of foreign trade structure. The level of leading export commodities generally determines the level of the export commodity structure. If the export level is higher than that of mainstay industries, it is referred to as advanced dislocation. In this case, industrial structure adjustment should be based on the export commodities of foreign trade. The production of leading export commodities is taken as key industrial development, thus promoting the upgrading of the industrial structure through the foreign trade structure. When the level of export commodities is equal to or lower than the level of the industrial structure, the structure of foreign trade commodities should be adjusted. In this process, first, the market for products from the mainstay industry should be stabilised and then, the focus should be shifted to developing new high-level product markets and optimising the structure of foreign trade commodities. The advanced dislocation of this structure is conducive to promoting the upgrading of the industrial structure, forming a virtuous cycle of interaction. Second, the proportion of foreign trade in capital and technology-intensive products should be increased. Generally, the law underlying the development of a country's foreign trade structure is that in the initial stage, the export of resource-intensive, labour-intensive, technology-intensive, and capital-intensive products is the main content. At a certain stage, the export of technology-intensive and capital-intensive products increases, and eventually, these two categories account for the main export proportion. The increase in the proportion of technology-intensive and capital-intensive products is a sign that the country's foreign trade commodity structure improves. Third, the regional structure of foreign trade is developing in the direction of increased diversification, indicating that both foreign trade and import trade should not be limited to individual

countries and regions. Instead, the limitations of a simple market structure should be overcome and the negative impact of single-market emergencies should be avoided.

#### **4. Political-Economic-Social-Technological Analysis of Sino-Malaysia Trade**

##### ***4.1 Opportunities and Challenges of E-commerce on Fresh Agricultural Products***

Agriculture plays a pivotal role in China's economy as it is a vital industry and the backbone of people's livelihood. The government has consistently allocated capital and implemented policies to support the agricultural sector. As early as January 1, 2006, the long-standing agricultural tax was abolished, which provided a significant boost to the development of e-commerce in the fresh food sector. Fresh e-commerce refers to using e-commerce platforms to market and sell agricultural products such as fruits, vegetables, and seafood.

According to *The 38th Statistical Report on Internet Development in China*, published by the China Internet Network Information Center at the end of 2016, the number of Internet users in China exceeded 700 million, with a remarkable penetration rate of 51 per cent. With the continuous promotion of electronic payment methods and the growing prevalence of Internet-based lifestyles, e-commerce increasingly permeates various aspects of people's daily needs (Wang and Dai, 2020). This phenomenon provides the necessary technical support and opportunities for transforming the sales model of fresh products. Moreover, compared to other forms of e-commerce, fresh food e-commerce has witnessed delayed inception and subsequent growth. Therefore, studying the e-commerce sales models of other goods can provide valuable insights for the development of fresh food e-commerce (Li-Li and Polytechnic, 2019).

Online sales expedite the journey from production to distribution, thus enhancing the efficiency of fruit farmers in both production and sales. Simultaneously, online sales elevate consumers' experience by enabling them to access fresh products promptly. This approach safeguards the interests of fruit farmers while providing buyers with cost-effective and high-quality agricultural products. Fresh food e-commerce streamlines the production and sales processes of agricultural goods. This is illustrated in Figure 1,

where a comparison between traditional circulation methods and e-commerce methods is depicted. Figure 2 displays the sales process of fresh products, highlighting the stages involved.

**Figure 1. Comparison of Flow Schemes Under Conventional Trade (Blue Background) and E-commerce (Rose Background)**

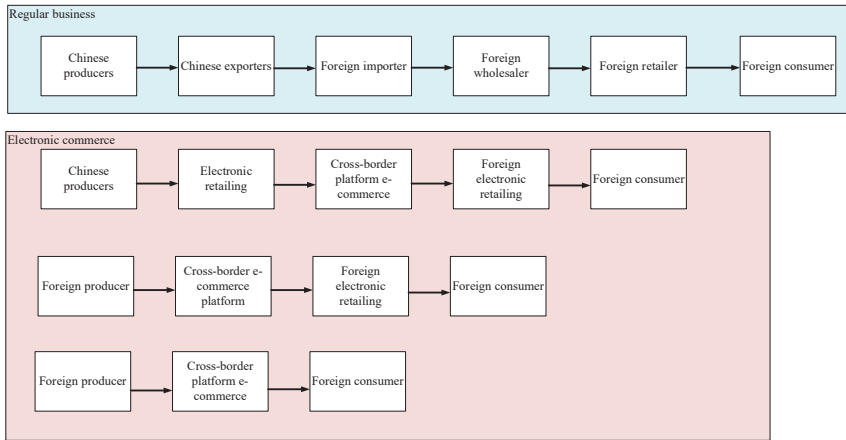


Figure 1 illustrates the contrasting modes of fresh product circulation, highlighting the impact of e-commerce on traditional business channels. In the traditional mode, fresh products primarily flow through conventional physical channels. Farmers or breeders transport their agricultural goods to wholesale markets or to traditional farmers’ markets, where wholesalers or retailers purchase them and ultimately offer them to consumers. This process involves multiple intermediaries and distributors, necessitating physical transportation and delivery.

However, the emergence of e-commerce has induced significant transformations in the circulation of fresh products. Online platforms and digital solutions provided by e-commerce platforms have revolutionized traditional physical channels. As a result, the circulation of fresh products has become more convenient and efficient by using e-commerce. Today, consumers have access to a broader range of choices and value-added services. Moreover, e-commerce has enhanced the visibility and efficiency of the supply chain through the utilisation of digital solutions. The entire process, from the initial purchase to the final delivery, can be tracked and monitored digitally, thus reducing both uncertainties and delays.

**Figure 2. Sales Process of Fresh Products**

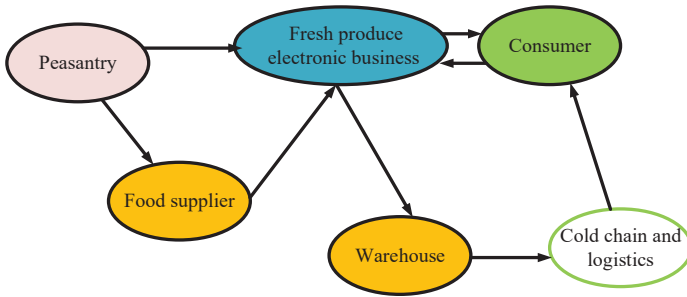


Figure 2 presents the sequential sales process of fresh products, comprising the following six steps:

1. **Production:** In this step, producers engage in cultivating, breeding, or catching fresh products, ensuring their quality and freshness.
2. **Harvesting and processing:** Once the products have reached maturity, they are harvested or subjected to appropriate processing methods to maintain their optimal quality.
3. **Packaging and labelling:** The products undergo packaging and labelling procedures to ensure their safety, preservation, and compliance with regulatory requirements during both transportation and sale.
4. **Distribution and wholesale:** Wholesalers or distributors procure the products from producers and facilitate their distribution to retailers or other intermediaries in the supply chain.
5. **Retail sales:** Retailers play a crucial role in selling products to end consumers through physical stores or online platforms, thus providing a convenient and accessible shopping experience.
6. **Delivery and consumption:** The final step involves the delivery of the purchased products to consumers, either through self-pickup options or reliable delivery services. Subsequently, consumers consume or otherwise utilise the products for their intended purposes.

#### **4.2 Macro-Environmental Analysis**

The Political-Economic-Social-Technological (PEST) analysis method is a primary method in Western management theory, which is commonly

employed to assess macro-environmental factors that affect industries or enterprises (Liu Wei et al., 2018). PEST comprehensively examines four key categories of influencing factors in a specific industry or enterprise: political, economic, social, and technological. Scholars have extensively utilised the PEST method to analyse diverse subjects, such as the pension insurance system, the healthcare industry, and cultural trade (Zeng et al., 2018). Furthermore, in recent years, this method has gained significant traction in the agricultural sector.

Within the PEST analysis method, the political environment encompasses state guidelines, policies, laws, regulations, and international relations. The economic environment comprises macroeconomic policies, economic infrastructure, income levels, consumption patterns, savings, and credit availability (Huang et al., 2018). The social and cultural environment primarily encompasses education levels, values (Huang et al., 2018), aesthetic preferences, and religious beliefs. Lastly, the technological environment focuses on the advancements in science and technology that are relevant to the industry or enterprise.

### ***4.3 PEST Analysis of Changes in the Trade Structure between China and Malaysia***

#### *(1) Political Environment*

Throughout the two-thousand-year history of China-Malaysia exchanges, peaceful coexistence, and mutual support have been the prevailing norm. The people of both nations have cultivated a profound traditional friendship and share similar cultural characteristics nourished by their long-standing interactions. China-Malaysia relations have exhibited different characteristics in various historical periods.

During the first period, the countries on the Malay Peninsula were incorporated into China's tributary system. Politically, they sought refuge and the protection of the Central Plains dynasties in China and engaged in frequent diplomatic visits. Culturally, they actively embraced advanced Chinese culture and technology, thereby contributing to the development of Malaysian civilisation.

In the second period, both Malaysia and China became colonies and semi-colonies of Western powers. During the early stage of its anti-colonial struggle, China provided political and economic support to Malaysia.

However, political exchanges gradually diminished over time (Qi and Wang, 2021).

In the third period, influenced by international and domestic factors, the official relationship between China and Malaysia was interrupted for a time, leading to distrust and mutual confrontation. Malaysia joined the anti-Communist and anti-China block formed by Western countries. While there were certain trade exchanges, overall, the relationship between both countries deteriorated and entered a stage of stagnation and regression (Wang and Selina, 2018).

The fourth period marked the resumption of diplomatic relations between China and Malaysia. Initially, Malaysia still held certain reservations about China. However, political ties gradually strengthened, and eventually, both economic and trade exchanges began to thrive. Since the 1990s, Malaysia has deepened its understanding of China and has consequently reduced its scepticism. Consequently, China-Malaysia relations have entered a stage of rapid development, characterized by an increase in high-level exchanges, enhanced political trust, significant growth in economic and trade exchanges, and a surge in bilateral trade volume.

## *(2) Economic Environment*

Economic and trade exchanges between China and Malaysia have a long-standing history of over 2,000 years. However, it was not until the 1970s that the trade volume between both nations began to witness significant growth. In the 21st century, bilateral trade, mutual investment, labour services, and tourism cooperation between China and Malaysia have experienced rapid development. Trade parks have also been established, contributing to the notable achievements of China-Malaysia cooperation. Nonetheless, challenges persist in terms of trade deficit, market competition, and labour policies (Charaia et al., 2018).

The fundamental status of economic and trade relations between China and Malaysia over the past decade can be summarized as follows: There has been substantial growth in bilateral trade volume. In the 21st century, Sino-Malaysia trade has experienced remarkable leaps and bounds. In 2002, the bilateral trade volume exceeded 10 billion USD for the first time. After Japan and South Korea, Malaysia has become the third Asian country to reach a trade quantum of over 100 billion USD with China. Furthermore, China has emerged as Malaysia's largest import market and second-largest export



market within the ASEAN region. This trend has solidified the position of China as Malaysia’s most significant trading partner within ASEAN (Foggin, 2018). Notably, the trade volume between China and Malaysia currently accounts for nearly 25 per cent of the overall trade volume between China and ASEAN. Figure 3 illustrates the e-commerce system.

**Figure 3. Electronic Trade System**

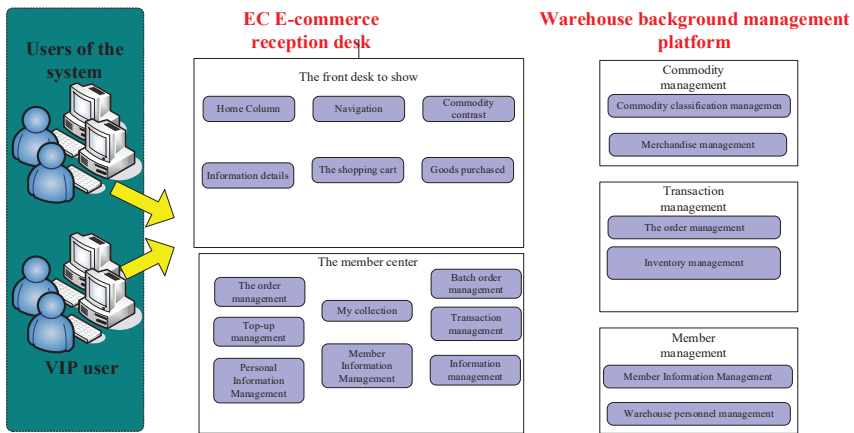


Figure 3 presents an overview of the fundamental components of an e-commerce system, which include:

1. Front-end user interface: The front-end user interface serves as the platform through which users can interact with the e-commerce system. It encompasses the design and functionality of the website or application and enables users to browse products, search for items, and access various features.
2. Database management system: An e-commerce system relies on a robust database management system for the efficient storage and management of diverse types of data. These data types include product information, user profiles, transaction records, and other relevant data necessary for the operation of the system.
3. Shopping cart and payment system: The shopping cart system allows users to select and manage their desired products, as well as their addition to a virtual cart for future purchases. The payment system facilitates secure and seamless payment processing, providing

multiple payment options and conducting necessary payment verifications.

4. Order management and inventory control: The order management system tracks and manages information on user orders, ensuring a smooth order fulfilment process. This system includes order confirmation, shipment tracking, and timely delivery. The inventory control system monitors product availability, ensures accurate inventory management, and facilitates efficient replenishment to avoid stock shortages.
5. User management and identity authentication: The user management system handles user registration, login, and personal information management. This system enables users to create accounts, access personalised features, and manage their preferences. The identity authentication system ensures the security and integrity of the e-commerce system, verifies the identity of users, and grants access privileges as appropriate.
6. Data analysis and reporting: The data analysis and reporting module collects, analyses, and presents relevant data concerning e-commerce activities. This module enables the system to gain insights into user behaviour, sales trends, inventory performance, and other key metrics. This information can be utilised for business intelligence and decision-making and enhances the overall performance of the e-commerce system.

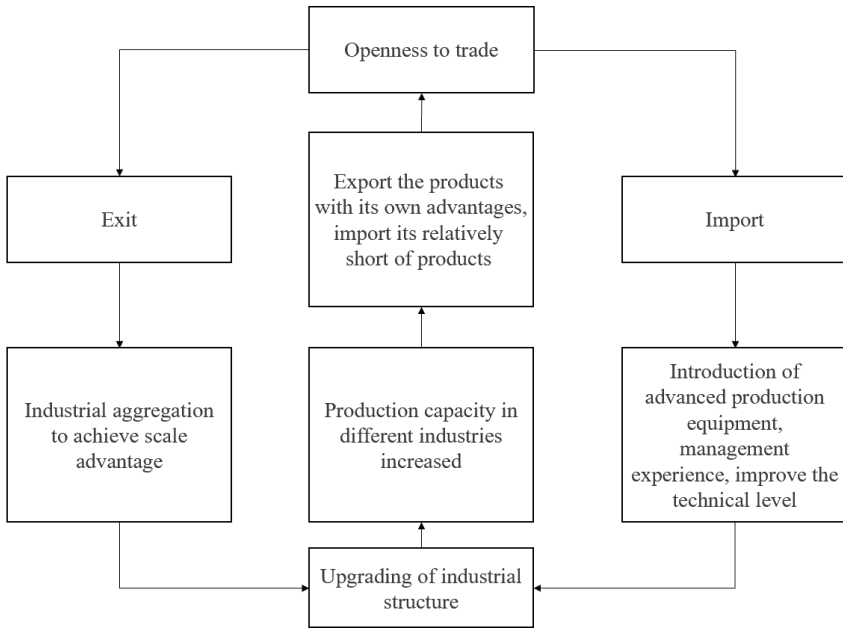
The components outlined in Figure 3 provide a comprehensive understanding of the underlying infrastructure and functionalities necessary for the successful operation of an e-commerce system.

During the 1970s and 1980s, early trade between China and Malaysia primarily consisted of primary products. Malaysia predominantly exported primary raw materials such as rubber, palm oil, wood, and minerals to China, while China's exports to Malaysia mainly comprised direct manufactured products such as grain, oil, food, agricultural and sideline products, as well as light textile industrial products. At that time, bilateral trade focused on the exchange of essential goods. However, since the early 1990s, significant changes occurred in the trade structure between the two countries, which gradually transitioned from primary products to high-value-added manufactured goods (Rauf et al., 2018).

Malaysia's investment in China began in 1984, which was several years later compared to other ASEAN countries like Singapore, Thailand, and the Philippines. This delay was primarily caused by domestic policy restrictions. However, the situation improved after the signing of the *Agreement Between the Government of the People's Republic of China and the Government of Malaysia Concerning the Reciprocal Encouragement and Protection of Investments* in 1988. Following China's further reform and opening up as well as changes in Malaysia's domestic policies, after 1992, Malaysia's direct investment in China experienced significant growth. Notably, leading investors included Chinese businesses, such as The Kuok Group, The Hong Leong Group, and The Lion Group. At its peak, actual investment reached 460 million USD in a single year. Malaysia's investments in China encompassed various fields, including manufacturing, processing, energy, communication, real estate, entertainment, department stores, services, and finance. The Asian financial crisis in 1997 temporarily impacted the investment of Malaysian enterprises in China, which gradually recovered after 2000. Building upon existing investments, numerous ethnic Chinese groups living in Malaysia continued to expand their investment in China, with an average annual investment of approximately 350 million USD. By the end of June 2014, Malaysia's actual investment in China had reached 6.72 billion USD, making Malaysia the second-largest foreign investor from ASEAN in China.

In recent years, under the impetus of the Belt and Road Initiative, trade exchanges between China and Malaysia have become particularly close. China has remained Malaysia's largest trading partner for eight consecutive years. In 2015, Chinese companies invested 8 billion CNY in the Malaysian construction sector, accounting for nearly half of all foreign contractors' projects. Currently, China continues to be Malaysia's largest trading partner, its largest source of imports, and its second-largest export destination. China's investments and constructions in Malaysia encompass significant projects such as the Kuala Lumpur-Singapore High-Speed Rail, Melaka Gateway, Kuantan Port, and East Coast Rail Link. These projects have brought capital, technology, and talent to Malaysia, thereby promoting local development, and have also provided substantial support for ASEAN connectivity and joint construction. Figure 4 depicts the relationship between trade and the economy.

**Figure 4. Relationship Between Trade and Economy**



Based on Figure 4, a clear and symbiotic relationship between trade and the economy emerges as they mutually support and drive each other's progress. As an essential element of the economy, trade profoundly influences economic growth, job creation, resource allocation, and international competitiveness. Firstly, trade serves as a catalyst for economic growth, and fuels economic expansion by facilitating the exchange of goods and services across borders. This process unlocks new market opportunities, attracts investments, and fosters heightened productivity, thus propelling overall economic development. Secondly, trade plays a pivotal role in job creation. Trade generates employment prospects across various sectors and borders by facilitating the movement of goods and services, which contributes to a reduction in unemployment rates and an elevation of living standards for individuals within the economy. Furthermore, trade contributes significantly to the optimisation of resource allocation. By leveraging specialisation and comparative advantages, countries can concentrate on producing the goods and services in which they excel. This strategic allocation of resources enhances both productivity and economic

efficiency. Thirdly, trade enhances a country's international competitiveness. Active engagement in trade exposes domestic industries to global markets and fosters innovation, efficiency, and technological advancements. Such participation bolsters a country's standing in the international arena and attracts foreign investment. In conclusion, trade and the economy are mutually dependent and synergistic. Trade serves as a driving force of economic growth, fosters job creation, optimises resource allocation, and elevates a country's international competitiveness. Through proactive trade, a country can achieve prosperity and foster economic development.

### *(3) Social Environment*

China and Malaysia share a long history of exchanges, which resulted in Malaysia being one of the countries/regions with the largest number of Chinese populations worldwide. This extensive history of cultural exchange provides a unique foundation for cultural and educational collaborations between both nations. Since the introduction of The Belt and Road Initiative, both governments have actively promoted non-governmental tourism exchanges, fostered closer cultural interactions, and strengthened both understanding and friendship between their respective peoples.

Regarding tourism, the Malaysian government began to gradually provide visas for Chinese tourists in 2015, with the aim to enhance people-to-people exchanges. Since January 2, 2016, the electronic visa policy was implemented for Chinese tourists, significantly facilitating travel from China to Malaysia. According to the annual statistical report of Tourism Malaysia, in 2017, the number of Chinese tourists visiting Malaysia reached 2.28 million, contributing 9.05 billion CNY in revenue, and making China the largest source of tourists to Malaysia (after ASEAN countries).

#### *4.4 Analysis of the E-commerce Business Model in Malaysia*

Lelong is a Malaysian B2C e-commerce shopping platform based on the domestic market that offers consumers an online one-stop shopping experience. The profit model of Lelong revolves around three main components: advertising revenue, membership commission revenue, and value-added service revenue.

*(1) Business Model Analysis*

Cultural variations in online marketing: Situated in the tropical region, Southeast Asia experiences a consistently hot climate throughout the year. The local culture and traditions share certain similarities. Additionally, there are similarities in purchasing habits and preferences. However, each country possesses distinctive national traits, and e-commerce development must align with these unique characteristics (Naik Sharma, 2021).

*(2) Social Marketing Analysis*

Effective marketing and promotion strategies play a crucial role in the success of e-commerce websites in Vietnam, Malaysia, and Thailand. Lelong in particular has evolved from a C2C platform to a B2C platform, and now offers exceptional services to both consumers and enterprises in terms of retail and procurement. Lelong has established its own group buying and unique sale platform to further enhance its operations, which enabled it to expand its business and maximise its outreach. This strategic approach has resulted in increased website traffic, improved conversion rates, and heightened product exposure, thereby facilitating both market development and product promotion (Wang Ying, Agyemang Martin, and Jia Fu, 2021).

*(3) Total Trade and Major Traded Commodities*

Between 2011 and 2020, the bilateral trade relationship between China and Malaysia followed a consistent upward trajectory. Based on data provided by the General Administration of Customs of China, the total bilateral trade volume increased from USD 83.5 billion in 2011 to USD 124.8 billion in 2020.

Electronic products: China holds a significant position as a global producer and exporter of electronic products, while Malaysia specialises in the assembly and manufacturing of electronic products. Consequently, China exports electronic components and equipment to Malaysia, where they are then assembled into finished products for export. According to data from the General Administration of Customs of China, the value of electronic products exported from China to Malaysia reached approximately USD 15 billion in 2019.

(4) *Petroleum and Petrochemicals*

Malaysia is a noteworthy producer of petroleum and petrochemical products, and China ranks among the largest consumers of oil worldwide. Malaysia exports crude oil, liquefied natural gas, and petrochemical products to China to meet Chinese energy demands. According to data from the Department of Statistics Malaysia, the value of petroleum and petrochemical products exported from Malaysia to China amounted to USD 11.3 billion in 2019.

(5) *Industry Structure*

Manufacturing sector: China has robust manufacturing capabilities and advantages in the supply chain, and has thus established itself as a global manufacturing hub. Conversely, Malaysia excels in areas such as electronic product assembly, automotive parts, and furniture production. This dynamic has led to China importing manufacturing products such as machinery and electronic goods from Malaysia while Malaysia imports raw materials and components from China. According to data from the General Administration of Customs of China, the value of machinery and electronic products imported from Malaysia to China totalled approximately USD 12 billion in 2019.

(6) *Agricultural Products*

The agricultural products trade between China and Malaysia has exhibited a positive growth pattern. China's demand for Malaysian agricultural products, particularly palm oil, rubber, and timber, has been increasing. Data from the Department of Statistics Malaysia indicates that in 2019, the value of agricultural products exported from Malaysia to China amounted to approximately USD 7 billion.

(7) *Geographical Location and Regional Cooperation*

The geographical proximity of Malaysia to China, which is situated in Southeast Asia, serves as a facilitator for bilateral trade between both nations. Both Malaysia and China actively engage in regional cooperation mechanisms such as the ASEAN and the China-ASEAN Free Trade Area. These collaborative frameworks facilitate trade and economic integration, thus creating more opportunities for bilateral trade. The establishment of

the China-ASEAN Free Trade Area has notably reduced trade barriers and facilitated a smoother trade flow between both countries.

*(8) Technological Cooperation and Industrial Upgrading*

China and Malaysia also share the same goals in terms of technological cooperation and industrial upgrading. China holds strengths in high-tech manufacturing, the digital economy, and artificial intelligence, while Malaysia strives to further develop its capabilities in technological innovation and digital transformation. This shared pursuit drives both countries to enhance their cooperation in technology, research and development, innovation, and industrial upgrading. As a result, it promotes significant changes in the trade structure between both countries.

*(9) Renminbi Settlement*

The increasing utilisation of renminbi settlements further exemplifies the changing trade structure between China and Malaysia. As bilateral trade continues to grow, the adoption of renminbi settlements between both countries has gradually expanded. This shift reduces dependence on third-party currencies for trade payments and settlements, thereby facilitating trade and improving cost-effectiveness.

**4.5 Quantitative Analysis of the Impact of China-Malaysia Trade Structure Changes on China-Malaysia Trade**

Beckman intuitively observed that trade flows tend to increase between geographically proximate countries. Subsequently, economists from various nations utilised the universally applicable gravitational formula to develop foundational equations for the trade gravity model. These models were later further refined and adapted based on individual perspectives, establishing diverse trade gravity models. Among them, the trade gravity model proposed by Jan Tinbergen, the Nobel Laureate in Economics, has gained recognition as a classic and authoritative model.

Let  $X_{ij}$  represent the total export volume from China to Malaysia. By applying the natural logarithm to  $X_{ij}$  and arranging the resulting equation, the gravity model can be expressed as Eq. (2).



$$\ln X_{ij} = b_0 + b_1 \ln(Y_i^* Y_j) + b_2 \ln(GDP_i * GDP_j) + b_3 \ln TCI_{ij}^k + b_4 \ln TCI_{ji}^k + b_5 \ln TCD^k + u \quad 2$$

In Eq. (2),  $b_0$  is a constant,  $b_1$ ,  $b_2$ , and  $b_3$  represent coefficients,  $u$  denotes the random error term,  $Y_i^*$   $Y_j$  refers to the per capita gross domestic product (GDP),  $TCI_{ij}^k$  signifies the complementary coefficient, and  $TCD^k$  indicates the degree of trade integration.

During the computation of the proposed model, the GDP and per capita GDP data of China and Malaysia from various years are utilised as data sources. The relevant data from the World Trade Organization trade database is uniformly employed for calculating the indices to ensure the reliability of the results. The ratio is then computed based on these data. For the purpose of quantitative analysis, Eviews 6.0 and MS Excel 2003 were utilised as analytical tools.

#### 4.6 *Analysis of China-Malaysia Bilateral Trade Flow—An Empirical Study Based on the Gravity Model*

Newton put forward the law of universal gravitation, the mathematical expression of which can be written as Eq. (3).

$$G_{ij} = K \frac{M_i M_j}{(D_{ij})^2} \quad (3)$$

In Eq. (3),  $G_{ij}$  represents the gravity between objects  $i$  and  $j$ ,  $D_{ij}$  signifies the distance between them,  $M_i$  and  $M_j$  denote the masses of objects  $i$  and  $j$ , respectively, and  $K$  is a constant. Eq. (3) shows that the magnitude of gravity is directly proportional to the masses of the objects and inversely proportional to the square of the distance between them. Building upon this concept, a trade gravity model was formulated, which can be mathematically expressed as Eq. (4).

$$X_{ij} = K \frac{(Y_i)^a (Y_j)^b}{(1+cD_{ij})^f} e^\varepsilon \quad (4)$$

In Eq. (4),  $X_{ij}$  refers to the exports from country  $i$  to country  $j$ ,  $Y_i$  and  $Y_j$  express the total economic volume of country  $i$  and country  $j$ , respectively,  $D_{ij}$  represents the distance between both countries,  $K$  and  $c$  represent constants,  $a$  and  $b$  are parameters, and  $e$  is the disturbance term. The model

signifies that the trade volume between two countries is directly proportional to the size of their economies and inversely proportional to the square of the distance between them.

By logarithmically processing both sides of Eq. (4), the relationship expressed in Eq. (5) is obtained.

$$\ln X_{ij} = \ln K + \alpha \ln Y_i + \beta \ln Y_j - \gamma (1 + e D_{ij}) + \varepsilon \quad (5)$$

To simplify Eq. (5) and account for the influence of the establishment of the China-ASEAN Free Trade Area (FTA) on bilateral economic and trade relations between China and Malaysia, dummy variables are introduced and the distance variable is modified, resulting in Eq. (6).

$$\ln \ln X_{ij} = \beta_0 + \beta_1 \ln \ln Y_i + \beta_2 \ln \ln Y_j + \beta_3 \ln \ln D_{ij} + \beta_4 W + \varepsilon_{ij} \quad (6)$$

## 5. Experimental Results and Discussion

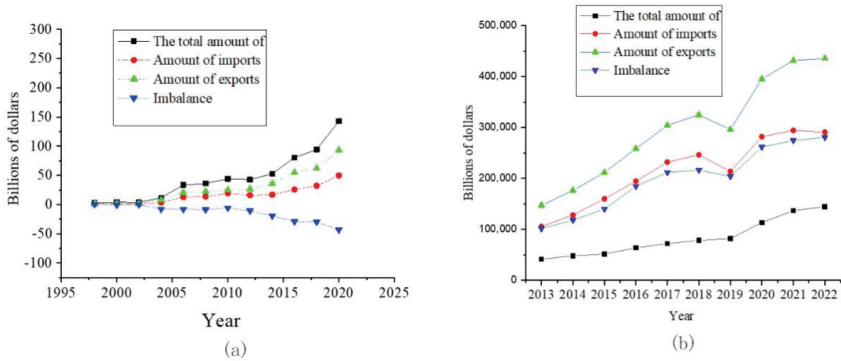
In this paper, the implications of changes in the China-Malaysia trade structure on China's import trade, and the factors that influence consumer behaviour in cross-border e-commerce in Malaysia are examined. The total trade volume is estimated by considering the combined value of the imports and exports of goods, as well as individual export and import values. The bilateral import and export data between China and Malaysia for different years were sourced from the *China Statistical Yearbook*.

### 5.1 Comparison of Changes in Trade Volume between China and Malaysia

Figure 5 presents a comparative analysis of trade volume fluctuations between China and Malaysia over the past three decades.

The data shown in Figure 5 suggest that over the past two years, the trade volume of goods between China and Malaysia has exhibited a consistent growth pattern with minor fluctuations, while overall imports have declined. Notably, the Sino-Malaysian trade experienced significant volatility in 2012. Regarding exports, although the trade volume of goods between China and Malaysia declined slightly in the fourth quarter of 2012, it rebounded sharply and stabilised in the first quarter of 2013. This time coincided with intensified negotiations and cooperation between the governments of China and Malaysia. However, the import trend clearly reflects the slowdown of the Malaysian economy and the increasing cost of China's exported products.

**Figure 5. Comparison of Changes in Trade Volume Between China and Malaysia (a. China; b. Malaysia)**



[Data source: China Economic Information (CEI) Data]

From 2010 to 2020, several factors have contributed to the trade imbalance between China and Malaysia:

1. Intensification of competition in the electronic products sector: China has emerged as one of the global leaders in electronic product manufacturing and export, while Malaysia faces challenges in this sector. With increasing global competition, China’s export volume of electronic products has witnessed significant growth, whereas Malaysia’s export volume has remained relatively stagnant. This disparity has resulted in a trade imbalance between both countries.
2. Adjustments in bilateral trade policies: Changes in trade policies by both China and Malaysia have also influenced the trade balance. For instance, the Chinese government has actively promoted domestic demand expansion, implemented structural adjustments, and enhanced intellectual property protection. These measures may have impacted the export volume of Malaysia. Similarly, Malaysia implemented strategies to strengthen the development and protection of its domestic industries, which may have influenced the bilateral trade volume balance.

In conclusion, the trade imbalance between China and Malaysia during the period of 2010-2020 can be attributed to intensified competition in

the electronic products sector and adjustments in bilateral trade policies. Addressing these factors and fostering a balanced trade environment could contribute to a more equitable trade relationship between both countries.

### 5.2 *Inspecting the Impact of Sino-Malaysia Trade Structure Changes on China's Import Trade*

**Table 1. The Impact of Changes in the Structure of Trade in Goods on Malaysia's Import Trade with China Import Trade**

Variable	C	LOG(1)	LOG(2)	LOG(3)	R-Square	Adjusted R-Square	Regression	Sum
Coefficient	-176	-14	14	-0.7	-0.21	-0.54	0.05	0.012
Std. Error	48	4.6	4.18	0.9	0.67	0.44	0.31	0.21
t-Statistic	-2 (p<0.01)	-1 (p<0.01)	0.1 (p<0.05)	-0.77 (p<0.01)	-0.39 (p<0.01)	-1.14 (p<0.05)	-1.0 (p<0.05)	-0.89 (p<0.05)
Prob.	0.022	0.038	0.028	0.48	0.71	0.27	11.21	0.35
Coefficient	-171	-14	16	-0.71	-0.23	-0.54	0.05	0.012
Std. Error	42	4.1	4.28	0.91	0.17	0.14	0.41	0.21
t-Statistic	-2.1 (p<0.01)	-1.1 (p<0.01)	0.1 (p<0.05)	-0.76 (p<0.01)	-0.30 (p<0.01)	-1.14 (p<0.05)	-1.0 (p<0.05)	-0.89 (p<0.05)
Prob.	0.012	0.138	0.018	0.41	0.71	0.27	1.21	0.25

According to the data shown in Table 1, the regression results for per capita GDP and GDP of China and Malaysia are statistically significant ( $p < 0.05$ ) and meet expectations. As anticipated, the trade relationship between China and Malaysia in primary products does not significantly impact Malaysia's exports or imports to China. However, for technology or capital-intensive products, the Sino-Malaysian trade relations can significantly impact Malaysia's exports to China, although it does not have a notable impact on Malaysia's imports from China.

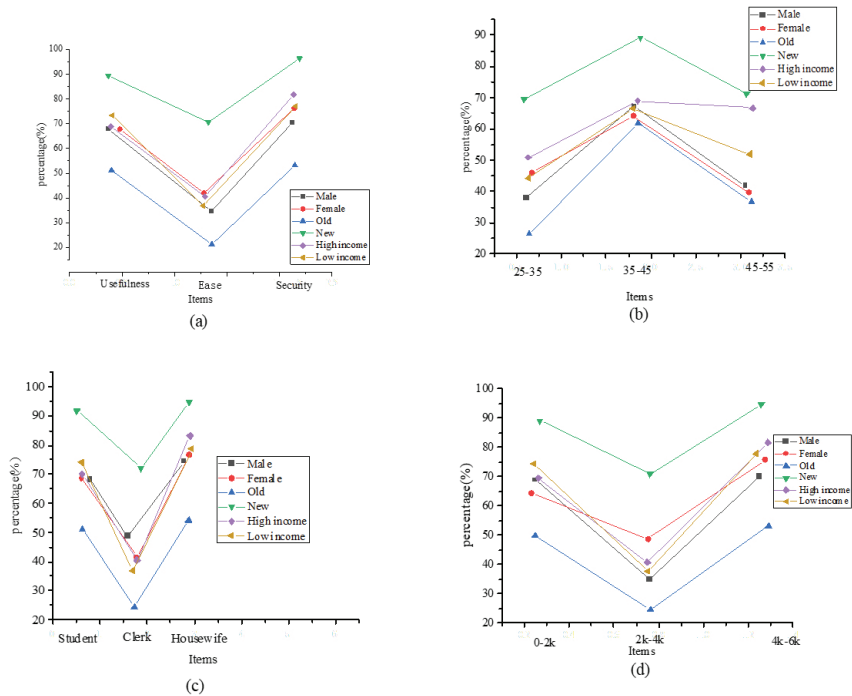
Specifically, the empirical results demonstrate that stronger complementarity between China and Malaysia in technology or capital-intensive products leads to higher export values for related products from Malaysia to China. Furthermore, the coefficient is greater than 1, indicating a robust driving effect, which aligns with general expectations. However, Malaysia's imports of technology or capital-intensive products from China are not significantly affected by the trade structure. This outcome

may explain the relatively small proportion, low technology content, and strong substitutability of Malaysia’s imports of such products from China, indicating a low degree of dependence. It is worth noting that many of the technology-intensive products that are imported by Malaysia from China are sourced from foreign-funded companies operating in China. Moreover, the import of certain products primarily depends on individual company strategies rather than on changes in the China-Malaysia trade structure.

### 5.3 Empirical Analysis of Factors Influencing Cross-border E-commerce Consumer Behaviour in Malaysia

Figure 6 shows the results of the empirical analysis of the influencing factors of cross-border e-commerce consumer behaviour in Malaysia.

**Figure 6. Results of the Analysis (a. Factor; b. Age; c. Occupation; d. Disposable Consumption)**



[Data source: CEI Data]

According to the data depicted in Figure 6, the factors of usefulness, ease, and security were crucial in influencing cross-border e-commerce consumer behaviour in Malaysia. Both males and females prioritised usefulness as the most significant factor, followed by ease and security. Younger consumers exhibited higher percentages across all factors, indicating their heavy reliance on cross-border e-commerce. High-income individuals also assigned slightly greater importance to these factors compared to low-income individuals. Consequently, businesses aiming to succeed in the Malaysian cross-border e-commerce market should prioritise offering useful and convenient experiences while ensuring robust security measures to build consumer trust. Furthermore, age groups played a significant role in consumer behaviour, with the 25-35 age group exhibiting the highest percentages for most factors. This suggests that businesses should focus on catering to the needs and preferences of younger consumers while also considering strategies to engage older age groups. Occupations also influenced consumer behaviour, with students and housewives showing higher percentages across most factors. Tailoring strategies to meet the needs of these occupational groups, while finding effective approaches to engage clerks, can enhance business success in the Malaysian cross-border e-commerce market. Lastly, income levels had a limited impact on consumer behaviour, indicating that factors like usefulness, ease, and security were important for consumers across different income levels. Therefore, businesses should prioritise delivering value, convenience, and security to all consumers, irrespective of their income level.

#### **5.4 Model Estimation and Result Analysis**

The mathematical expression of the estimated import and export trade volume is shown in Eq. (7).

$$\ln X_{ij} = 0.5547 \ln Y_i + 1.2768 \ln Y_j - 1.0934 \ln D + 0.6855 W \quad (7)$$

The coefficient of determination  $R^2$  is 0.9763, indicating a high degree of goodness of fit for the model and a relatively good estimation result. The performance of the model suggests strong alignment with the observed data. The specific findings are as follows:

1. Economic growth plays a significant role in promoting bilateral trade. An increase of 1 per cent in Malaysia's economy leads to a corresponding 1.2768 per cent increase in bilateral trade between China and Malaysia. Similarly, a 1 per cent increase in China's economy results in a 0.5547 per cent increase in bilateral trade between both countries. These results indicate that higher economic aggregates strengthen domestic enterprises and contribute to the expansion of foreign trade.
2. The coefficient of the distance variable is -1.0934, indicating that greater distance between countries leads to a decrease in bilateral trade. With increasing distance, trade volume tends to diminish. This finding highlights the importance of geographic proximity and logistical factors in trade relationships.
3. The coefficient of the dummy variable is 0.6855, demonstrating that the establishment of the China-ASEAN FTA in 2002 has indeed promoted bilateral trade between China and Malaysia. The creation of the FTA has created a favourable environment for trade cooperation and has facilitated an increase of trade between both nations.

## **6. Conclusion**

In this study, the following results were obtained: 1. Economic growth helps to promote bilateral trade. The China-ASEAN FTA has played an important role in promoting bilateral trade between China and Malaysia 2. The Sino-Malaysian trade potential presents a pronounced upward trend, and China is a vital market provider for Malaysia. However, at present, both China and Malaysia face problems of unreasonable industrial structures and a low degree of opening to the outside world. Therefore, relevant measures must be formulated to accelerate the effective realisation of the bilateral trade potential between China and Malaysia. 3. While the competitiveness of China's traditional and primary products has declined significantly, the competitiveness of Malaysia's trade in these products has remained relatively stable, showing only slight fluctuations. Food still occupies a major position in the import of primary products. 4. China's demand for Malaysia's primary products has increased. This increase demonstrates that China has increased the consumption capacity of traditional and primary products but still lacks internal productivity. 5. Malaysian cross-border e-commerce consumers have apparent main effects related to perceived ease of use, e-commerce

platform factors, and purchase intentions. Some deficiencies still exist, such as insufficient research elements. Future work will include the necessary research elements to improve this research.

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## **A Comparative Analysis of the Japanese Overseas SEZ in Phnom Penh and the Chinese Overseas SEZ in Sihanoukville, Cambodia: from the Perspective of Porter's Diamond Model**

Shulan Zhao\* and Chai Ching Tan<sup>o</sup>

\*Institute of Laos Studies, Yunnan Social Sciences' Academy

<sup>o</sup>Rajamangala University of Technology Rattanakosin, Bangkok, Thailand

### **Abstract**

This study focuses on the development and influence of special economic zones (SEZs), examining factors such as enterprise competitiveness, main industries, supply chain relationships, and the development environment of the zones. The lack of a consistent framework for assessing the performance and impact of SEZs has been a challenge in research. To address this, the paper employs Porter's Diamond Model to analyze the factors that contribute to the development and influence of SEZs, suggesting that this model can serve as a comprehensive framework for future SEZ research. The existing research on SEZs in developing countries is found to be inadequate. However, the SEZs established in Cambodia through collaborations with China and Japan have played a significant role in the country's rapid economic growth. By examining two specific cases — the Japanese-invested Phnom Penh SEZ and the Chinese-invested Sihanoukville SEZ — this study identifies common operational challenges faced by developing countries in establishing SEZs. Furthermore, by exploring different collaboration models and assessing the impacts on local communities, this research offers valuable insights for policymakers and international investors in their decision-making processes.

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\* Shulan Zhao is professor in the Institute of Laos Studies, Yunnan Social Science Academy, Kunming, P.R.China, Address: No.577 West Huancheng Road, Kunming, Yunnan Province, PRC. < Email:arashi115@foxmail.com>. Phone: +8615987149248.

<sup>o</sup> Chai Ching Tan is senior lecturer in Rajamangala University of Technology Rattanakosin, Bangkok, Thailand.

**Keywords:** *Cambodia-Japan Phnom Penh Special Economic Zone, China-Cambodia Sihanoukville Special Economic Zone, Porter's Diamond Model, Environmental Impact, SEZ, SEZ's Development Assessment*

## 1. Introduction

No matter what they are named in different discourses: the Chinese Overseas Economic and Trade Cooperative Zone (hereinafter: Chinese Overseas SEZ) or the Japanese Overseas Industrial Parks (hereinafter: Japanese Overseas SEZ), both are under the research domain of special economic zones. Through comparative analysis, this paper discusses and examining the current development status of the economic special zones jointly built by China and Japan in Cambodia, which contributes to a clearer understanding of the strengths and weaknesses of Chinese overseas SEZ and Japanese Overseas SEZ in terms of competitiveness. Currently, there is limited research on economic special zones in developing countries. Known as the new Tiger in the Asian economy, Cambodia has kept an annual growth of 7 per cent in GDP in recent years, leading the economic development in ASEAN (Nan Fang Cai Fu, 2019), and thereby attracted numerous multinationals from China, Japan, and South Korea. During this process, economic special zones, particularly the economic cooperation zones established by foreign entities in Cambodia, have played a significant role in promoting Cambodia's economic development. Therefore, Cambodia can serve as a case study for researching the establishment of economic special zones by foreign entities in developing countries. Both China and Japan have established joint-ventured special economic zones in Cambodia, shaping its socioeconomic outlook in a positive manner. The China-Cambodia Special Economic Zone in Sihanoukville (hereinafter: Sihanoukville SEZ or SSEZ) and the Japan-Cambodia Special Economic Zone in Phnom Penh (hereinafter: Phnom Penh SEZ, or PPSEZ) were established at similar time, and moreover, these two parks are currently demonstrating the most promising development trends within Cambodia. By selecting and conducting a comparative analysis of these two SEZs, it is possible to extract the key factors contributing to the relative success of SEZs in developing countries. Additionally, this analysis can contribute to understanding the distinct characteristics of economic cooperation with Southeast Asian countries between China and Japan from a different perspective.

## **2. Literature Review**

This part reviews literature of the extant research in the cooperated SEZs in Cambodia in four sections. Section 1.1 discusses the concept and practices of special economic zones. Section 1.2 specifies the development of overseas SEZ cooperation from Japan in ASEAN, section 1.3 offers the counterpart development of China, and lastly, section 1.4 provides a description on the current development of various types of SEZs in Cambodia.

### **2.1 Special Economic Zones**

Special Economic Zones, or SEZ, come in various avatars, such as free trade zones, export processing zones, industrial zones, high-tech economic development zones, science and technology parks, ecological industrial parks, and comprehensive economic special zones, to name but a few. Regarding the potential impacts of economic special zones, there has been no consensus among scholars in academia.

Some scholars argue that special economic zones can effectively promote the development of their host regions because: 1. SEZs are established within assigned areas where bundled public services are provided; 2. Government funds, often limited, can be efficiently utilized in infrastructure development; 3. SEZs promotes clustered industrial development and agglomeration (Lin & Monga,2010;); 4. SEZs can leverage economies of scale to provide environmental improvement services, such as water treatment plants and solid waste management facilities; 5. SEZs can act as catalysts for urban development by attracting investments, creating employment opportunities, raising wage levels, and improving living standards for workers within the zone (Lin and Wang, 2014; FIAS, 2008). The positive sides holding that SEZs play a catalytic role in facilitating broader economic growth, besides creating jobs (FIAS, 2008) especially for economies with a smaller population. SEZ serves as an important driver for industrial upgrading (Baissac, 2011). Also, many SEZs have achieved success in promoting exports (Farole & Akinci, 2011).

However, there are also scholars who argue that the positive influence of SEZs on the local context is limited. For example, some scholars suggest that SEZs display no significant economic impact on exports (Johansson & Nilsson, 1997), and the labor force skills has not significantly improved with the development of the zones over time (Sadni-Jallab & Blanco, 2002). The

evaluation of the economic impact on regions is challenging due to factors such as the location, the quality of infrastructure, and regional governance, all of which can affect the performance of SEZs (Aggarwal, et al. 2008).

Furthermore, existing research on SEZs primarily focuses on East Asian countries and ASEAN's "older" member states, with a lack of studies on SEZs in underdeveloped ASEAN countries. In particular, there is insufficient research on SEZs established through cooperation between foreign entities and these developing countries.

This study argues that evaluating the development effectiveness of SEZs requires a comprehensive assessment of factors such as the development environment of the zones, the competitiveness of leading enterprises, and the external conditions they can leverage. This calls for an analytical framework that encompasses the elements inherent to SEZs. Additionally, numerous news reports highlight the significant economic impetus exerted by SEZs on emerging economies in ASEAN, particularly in the case of Cambodia. Therefore, this study intends to focus on SEZs in Cambodia as the research subject.

## ***2.2 The Japanese Overseas SEZs in Southeast Asia***

There are about 30 Japanese Overseas SEZs in Southeast Asia, most of which have started operation since mid-1980s. In the recent decade, Japan has increased its investment in these industrial parks intensively, making them the most important vehicles for the Japanese investment in ASEAN (Yamada et.al, 2014). The Japanese overseas SEZs in ASEAN are similar to the Chinese counterparts. Both are catering to investment needs such as human resource development, elite management recruit, finance and business registration services, and even managerial and consulting service.

Current literature on the Japanese overseas SEZs in ASEAN mainly discusses problems and their solutions. On the problem side, firstly, there is intense competition in the land market surrounding Japanese overseas parks in ASEAN countries, leading to significant fluctuations in land prices and increased operational costs. Furthermore, inadequate title registration systems in the host countries of the parks contribute to a high rate of litigation related to land issues (OKB-KRI, 2019).

Secondly, non-transparent administrative procedures pose investment risks. The lack of transparency in these procedures can create uncertainties and obstacles for investors. Thirdly, the local infrastructure in the areas

where the parks are located is severely inadequate. This not only increases investment risks and costs but also hinders the timely progress of park construction and development. Fourthly, the lack of skilled labor and subpar living conditions present significant barriers to achieving localization of enterprises and make it difficult to continuously attract more Japanese and third-country tenants in the Zones (Yamada et.al, 2014). These problems, when analyzed from the perspective of Porter's Diamond Model, encompass challenges related to the development environment, the competitiveness of leading enterprises, and the policy coordination of parks.

On the solution side, some scholars argue that it is necessary to consider the different stakeholders involved in the SEZs. The stakeholders related to the Japanese Overseas SEZs can be divided into three categories: the leading Japanese enterprises in the zones, local partners, and the local government. The leading enterprises in the zones need to manage their relationship with the local government. Similar to research on the Chinese overseas SEZs, obtaining operational recognition from the local government is crucial to secure land acquisition and ensure support for infrastructure development. However, compared to China, Japanese research has a clearer understanding of the importance of seeking local partnership. Japanese scholars emphasize the importance of the leading enterprises in the parks finding high-quality collaborators locally, as it is directly linked to the successful development of the parks. This experience has been validated in well-operated zones in Thailand, Indonesia, Singapore, Cambodia, and Myanmar (JICA, 2012).

Based on the extant literature, the existing research conducted by Japanese scholars also lacks a consensus framework for evaluating the development effectiveness and impact of the Japanese overseas SEZs.

### **2.3 The Chinese Overseas SEZ**

Chinese overseas SEZs refer to special economic zones located in foreign countries or regions with relatively well-developed infrastructure, complete industrial chains, strong driving and radiating capabilities, and significant influence in industries, agriculture, or services. These zones aim to attract investments from Chinese or other foreign companies (Wu, 2017). In order to assist Chinese enterprises in "going global" and share China's industrialization experience, the Chinese government, drawing on the successful experience of domestic industrial zones since the reform and opening-up (the Ministry of Commerce of China and the Representative



Office of the United Nations Development Programme, 2019)<sup>1</sup>, formally proposed the establishment of Overseas SEZs in 2006 (Lu & Pei, 2019). Currently, research on China's Overseas SEZs primarily focuses on the following three aspects.

Firstly, the Chinese overseas SEZs are said to have generated positive impacts on several local economies. Peter Dannenberg (2011) argued that China's Overseas SEZs in various African countries have shown promising development. Deborah Brautigam and Tang Xiaoyang (2012) suggest that China's establishment of Overseas SEZs in Africa has activated the local economic development potential. By the end of 2019, Chinese enterprises had built or were constructing 201 Chinese overseas SEZs in 57 countries, with 138 located along the Belt and Road Initiative countries. As of September 2018, the accumulated investment in the cooperative zones within the scope of the Chinese Ministry of Commerce statistics reached \$36.63 billion, with 4,663 enterprises registered and a total of \$3.08 billion in taxes and fees paid to the host countries (Yan and Jia, 2020). Moreover, in recent years, as China pays increasing attention to cost and resource factors, as well as the need for innovative development, there has been a growing emphasis on developing technological research and development-oriented cooperation zones, leading to more diversified and advanced forms of overseas SEZs (Qi & Yang, 2018), such as technology cooperation parks and high-tech cooperation zones. Since these Chinese invested SEZs can contribute to the host country's tax revenue and employment, they are more welcomed by the host countries (Liu, 2017).

Secondly, extant research attempted to explore reasons behind the successful development of China's thriving Overseas SEZs. For example, Douglas Zhihua Zeng (2015) argued that long-term government support, a favorable business environment, promotion of local industrial upgrading, and skills training have contributed to the success of Chinese overseas SEZs. Enterprises within the SEZs can enjoy support from the local government's complementary policies as well as financial support from the Chinese government, effectively facilitating Chinese enterprises' "going global" strategy and driving local economic development (Zhang & Long, 2022). For example, the management team of the Thai-Chinese Rayong Industrial Zone leads a professional team to provide comprehensive and one-stop services to the enterprises in the zone, enabling them to benefit from specialized services as well as preferential tax treatments on income, import tariffs on

machinery and raw material (Zhang, 2018).

Thirdly, however, the Chinese overseas SEZs are not free of issues in the development process. In fact, only 20 Overseas SEZs have been confirmed and assessed by the Chinese Ministry of Commerce in recent years. The challenges are diverse, including unreasonable zoning, unclear industrial positioning, mismatch between industries and host countries' actual needs, difficulties in financing, unfavorable investment environment, shortage of specialized talents, and unsustainable operational models (Hu, Zhao & Wang, 2017). Additionally, due to inadequate relevant laws and regulations and insufficient infrastructure in most host countries of the SEZs, the host governments lack funds to meet the financial demands of the SEZs, stagnating the development of these zones (You, Cheng & Yang, 2017). Furthermore, frequent policy changes caused by political instability in the host countries pose multiple risks to the Chinese enterprises that lead the Chinese overseas SEZs (Li, 2016). Also, limited cooperation capacity between the leading enterprises and government and inadequate adaptation to the local environment have hindered the development of Chinese overseas SEZs in Southeast Asian countries, making them less accepted by local communities. Examples include the Malaysia-China Kuantan Industrial Park in its initial stage and the "Cambodia-China Comprehensive Investment and Development Pilot Zone" in Dara Sakor, Koh Kong Province.<sup>2</sup>

The research on Chinese overseas SEZs lacks a consensus analytical framework. This hinders the comprehensive evaluation and analysis of the development characteristics and issues of these zones, which could only be summarized from a specific domain or perspective. The Diamond Model, proposed by management scholar Michael Porter, can effectively integrate six aspects related to the development of Overseas SEZs. This study intends to use the Sihanoukville Special Economic Zone, recognized by the Chinese Ministry of Commerce as a qualified SEZ, as an example to analyze the advantages and shortcomings of successful Chinese overseas SEZs under Porter's Diamond framework.

#### **2.4 SEZs in Cambodia**

SEZs within borders of Cambodia are under the authorization and supervision of the Council for the Development of Cambodia (CDC). The legal framework overarching SEZ planning and development is founded on the premise of the *Sub Decree No. 147 on the Organization and Functioning*

*of the CDC* enacted in 2005. By 2019, there have been 23 SEZs up and running in Cambodia, and another 13 under official review for approval (Brussevich, 2020).

There is a dearth of in-depth research on the SEZs in Cambodia (Warr & Menon, 2015). Extant literature primarily focuses on evaluating their impact on the country's economy. Some scholars believe that the SEZs in Cambodia have had a positive influence on its economic development. For instance, Cambodia's 23 operational SEZs have attracted large amount of investment for Cambodia. Between 2005 and 2019, SEZs in Cambodia have drawn in over \$2 billion dollars in the initial investment (Choup, 2022). The industries operating in these SEZs mainly concentrate on light manufacturing, such as apparels, shoes, travel products, electric gadgets, automobile spare parts, plastic and other consumable products, most enterprises are export-oriented, and have contributed greatly on the country's export volume. For example, in 2018, SEZ exports accounted for 18 per cent of Cambodia's total export. Additionally, SEZs in Cambodia hire large number of labor force. By 2019, the 23 SEZs have employed over 131,000 Cambodians—providing over 22 per cent of total jobs in Cambodia (World Bank, 2014).

On the other hand, many scholars argue that the contribution of these SEZs to local development is limited. Most of these zones have had limited impact on the overall improvement of labor skills in Cambodia, as there has been a lack of significant technology and knowledge transfer (WB, 2014). This limited transfer of technology and knowledge has resulted in minimal stimulation of domestic industries in Cambodia and a lack of close connections with local enterprises, thereby providing limited improvement to the investment environment in Cambodia (Warr & Menon, 2015). This is because most enterprises within the SEZs are multinationals, and in pursuit of operational profits, most enterprises would rather rely on the foreign parental company for skill transfer and raw material supply to lower production costs (Warr & Menon, 2015).

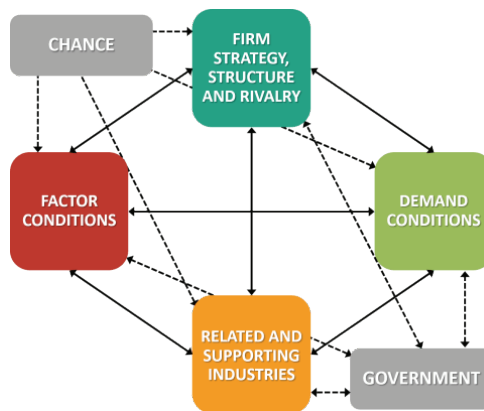
Of the 23 SEZs in Cambodia, the SEZs in Sihanoukville and Phnom Penh are the biggest job creators (Warr & Menon, 2015), and their skill upgrade and average wage also outperform the rest (CDC, n.d.) Specifically, the Sihanoukville Special Economic Zone (referred to as SSEZ) in Preah Sihanouk Province has achieved the most outstanding development performance, followed by the Phnom Penh Special Economic Zone (referred to as PPSEZ), which is a joint venture between Cambodia and

Japan (HKTDC Research, 2017) Why these two SEZs stand out among others under similar development conditions prompts the rationale of this comparative study.

### 3. Analytical Framework

In the 1990s, Michael E. Porter introduced a model for understanding the global competitive position of nations known as the “Diamond Framework” or “Diamond Theory”. This framework expanded upon the traditional theory of comparative advantage and made a significant impact both in theory and practice by advancing from comparative advantage to competitive advantage. According to Porter, there are four fundamental elements that an industry or a country must possess to achieve competitive advantage internationally: factor conditions, demand conditions, related and supporting industries, and firm strategy and structure, and rivalry. Additionally, government actions and chance events also have a significant influence on industrial competitive advantage. These elements interact and reinforce each other, forming the “Diamond Model” that affects the competitiveness of an industry. The six elements involved in Porter’s Diamond Model and their interrelationships are illustrated in the diagram below. These six elements constitute important components of the competitiveness of an industry or a country.

**Figure 1. Michael Porter’s Diamond Model**



The literature review mentioned earlier reveals that both Chinese overseas SEZs and Japanese overseas SEZs face similar challenges in their development. These challenges include a mismatch between the development environment of the host country and that of overseas SEZs, inadequate competitiveness and localization capabilities of leading enterprises within the zones, and a lack of alignment between the zones' development needs and the production factors available in the host country. These factors align closely with the analytical framework of Porter's Diamond Model. By applying this model to compare and analyze the strengths and weaknesses of the Chinese overseas SEZs and Japanese overseas SEZs, we can establish a framework for analyzing SEZs and provide a more comprehensive assessment of their development characteristics and impact.

In the context of Porter's Diamond Model, the element of firm strategy, structure, and rivalry refer to the competitiveness of leading enterprises and other companies within these SEZs. The concept of enterprise competitiveness encompasses the development plans, industrial focus, and the ability of leading enterprises to build industrial competitiveness within the overseas SEZs.

Related and supporting industries primarily refer to whether the Chinese or Japanese overseas SEZs can coordinate with relevant governmental bodies to gradually establish the required development environment for the zones. This includes aspects such as the completeness of the industrial chain within the SEZs and the improvement of the local investment environment. The development environment of the zones not only includes "hardware" aspects such as the maintenance of infrastructure like roads, electricity, and water facilities but also encompasses the extent to which the management systems in the SEZs can facilitate their development. This involves their ability to align with local policies and provide a favorable environment for the development of enterprises within the zones, such as offering the necessary elements for industrial development, including labor force, clear and stable registration processes for businesses, cohesive tax regulations, transparent business regulations, and investment policies. Additionally, recognition from international companies and the ability to attract more third-country enterprises to join the zones are also important.

Factor conditions refer to the alignment between the required production factors for the development of overseas SEZs, such as natural resources, geographical location, human resources, and capital, with the

existing production factors available in the host country. The maximization of advantageous factors and the conversion of unfavorable factors into favorable ones are essential for overseas SEZs.

Demand conditions, according to Porter, refers to the downstream logistics and distribution chain of a given industry. For an emerging market like Cambodia, on one hand, the domestic market and its distribution network relies local partners' capacity. On the other hand, most of the SEZs in Cambodia are export oriented, which accentuated the importance of local infrastructural support as well as the marketing network of the leading enterprises. On top of the business point of view, this article stresses on the importance of an overall national development and goals of the overseas SEZs and whether they align with the development needs of the host country. It also considers whether the demands and requirements for development within the overseas SEZs are consistent with the development needs of the host region.

The government factor is in three dimensions. First, it refers to the ability of the governments related to the overseas SEZs to provide sufficient policy coordination among government departments to ensure that the policies within the zones are compatible with the relevant national laws and regulations and that the customer enterprises within the zones can enjoy the benefits of relevant preferential policies provided by the host country. Second, it refers to the stability of the policies introduced by various governments related to the development of the zones. Third, it refers to the ease of implementing existing supportive policies, ensuring that the policies that support the development of the zones can be effectively implemented.

Chance factors refer to the ability of the overseas SEZs to fully grasp the trends in industrial development within the host country and whether their development can align with the current regional, global economic, technological, and industrial trends.

As mentioned earlier, there seems to be no consensus on the research framework for overseas SEZs neither in Japanese nor Chinese academic communities. There is a need for a comprehensive framework that can integrate various elements, provide a comprehensive evaluation of the development achievements and impact of the zones, and analyze the constraints imposed by the development environment on economic zones. Porter's Diamond Model can offer a new perspective for studying the development performance and impact of economic zones. The study attempts

to use Porter's Diamond Model to compare and analyze the strengths and weaknesses of the Phnom Penh SEZ and the Sihanoukville SEZ, identify common characteristics of foreign SEZ development in Cambodia, and summarize the advantages of the Chinese and Japanese overseas SEZs respectively, thereby identifying the factors that constrain the development of the overseas SEZs by these two nations.

#### **4. Development Model of the Japan-Cambodia Phnom Penh SEZ: Strengths and Weaknesses**

Phnom Penh SEZ (PPSEZ), which was approved in 2006 and commenced operations in 2007, has experienced rapid development. Covering an area of 257 hectares, it is a key investment destination for Japanese investors in Cambodia. In the early stage, 49 per cent of the shares were held by Japanese investors, while 51 per cent by Cambodian investors. The Japanese government, the Japan External Trade Organization (JETRO), the Japan International Cooperation Agency (JICA), the Japanese Embassy in Cambodia, and Japanese manufacturing companies have all played crucial roles in the inception of the PPSEZ. Recently, a subsidiary of Royal Group Cambodia (RGC), Inter Logistics (Cambodia), acquired a 45 per cent stake in the publicly listed company of the PPSEZ for 16 million USD, making Royal Group Cambodia the controlling shareholder of the PPSEZ (Cambodia Investment Review, 2022).

Currently, the PPSEZ is primarily operated by the Royal Group Phnom Penh Special Economic Zone Co., Ltd., which is engaged in the business of operating and managing the economic zone. Its main activities involve the development of industrial land for sale and lease. Additionally, it provides related services and facilities within the economic zone, including water treatment and supply, leasing services, infrastructure maintenance, consulting services, enterprise registration, import-export licenses and customs clearance services, labor recruitment and policy support, among others. According to statistics from JETRO, in 2014, the PPSEZ became the SEZ that received the highest volume of foreign investment in Cambodia. Currently, the zone is home to more than 80 companies from 15 countries, making it one of the economic zones with the highest number of resident enterprises in Cambodia (PPSEZ, 2023). Analyzing its development model using the Porter's Diamond Model, it is observed that the competitiveness of the leading enterprises, integration of local companies and government

resources, and the establishment of linkages between industries other SEZs in neighboring countries have partially addressed the adverse effects of Cambodia's unfavorable industrial environment on the zone.

#### **4.1 Competitive Leading Enterprises of the Phnom Penh SEZ**

One of the major strengths of the PPSEZ is that the leading enterprises have strong global competitiveness, which can be exemplified in three aspects: first, Sumitomo Corporation, as the leading enterprise, is an influential conglomerate itself. At the beginning of the PPSEZ, it managed to bring in 50 Japanese enterprises, including Toyota, Sato Industry, Nippon Express, and Toransiki etc. In 2006, the investment by these Japanese tenants in the SEZ totaled \$240 million dollars. Currently, there are over 100 tenants operating in the SEZ, 60 per cent of which are from Japan (Adrianople group, 2019). Currently there are 88 customer companies operating in the PPSEZ, and another 14 planning to. The total investment has registered 667 billion USD (Khmer Times, 2020)

Second, the leading enterprise in PPSEZ seems to be quite effective in attracting international corporations. For example, Coca-Cola brought \$100 million dollars into PPSEZ since December 2016, with an output capacity of 60,000 cans/hour. Furthermore, other international brands in Phnom Penh include Timberland, Puma, Apple, Sony, Canon, IBM and Old Navy. By 2016, the SEZ has attracted over \$470 million dollars of foreign direct investment, topping the list of all SEZs in Cambodia (Nicolas, 2018). Currently, the main industries in the PPSEZ include the production of automotive components, electronic parts, and other high-value-added products. While attracting American enterprises, it has also attracted Chinese investors to produce high-value-added products such as fiber optics, plastic components, and solar panels (Cambodia Investment Review, 2022). The zone is currently catering to 88 companies from 15 countries.

Third, the Japanese leading enterprise partnered with strong local corporation to enhance localization and adaptation to the local environment, which helped with easier acceptance by the local communities. The LHC Investment Group is the local partner of the leading enterprise Sumitomo in establishing PPSEZ. This partnership greatly helped the PPSEZ with its localization. Specifically, in terms of land acquisition, LHC is responsible for liaison with the local government, smoothing the way to beneficial terms on the lease agreement. Secondly, with the help of the local partner,



easier communications with related government divisions, the preferential policies are carried out in a smoother manner. Thirdly, the local partner also helps offering consultations to other investors within the SEZ in areas of policy instructions, investment trends, and even business registration processes. With the help of local partners such as LHC, the SEZ organized a professional public service team consisting of representatives from the Development Bureau, Ministry of Commerce, Customs, Quarantine, Anti-Fraud Bureau, Ministry of Labor and other related government organs. This team efficiently provides services to the PPSEZ in business registration, operations, taxation, and customs clearance etc.

#### ***4.2 Related and Supporting Industries: Japanese Leading Enterprise's Key Success Factors in Phnom Penh SEZ's Development***

The related and supporting industries are well utilized by the Phnom Penh SEZ in its development. This can be seen in the following practices: first, the PPSEZ has made clear requirements on operation standards to all its tenants. These requirements are mainly about the standardized taxation reporting procedures. Since its inception, the PPSEZ involved PWC to help tenants standardize their accounting and taxation procedures. Secondly, all tenants are required to pass the ISO quality management standard and ISO14001 environmental management standard accreditations. The international standards guarantee the recognition from the local government and potential local partners. Thirdly, the Japanese leading enterprise actively negotiated with the Cambodian government to raise the salaries for officials working within the SEZ while demanding higher level of professionalism, in an attempt to curb potential bribes and improve the operation environment. Fourthly, with regard to the supply chain integration, the PPSEZ is highly compatible with Japan's "Thailand+1" and "China +1" strategies of industrial development on the Indochina peninsula. The grand scheme allows the PPSEZ to integrate into the larger manufacturing network with industries in other Japanese SEZs in Thailand and Vietnam, which quickens the development of the PP SEZ. These advantages have enhanced the image of the PPSEZ among potential tenants and local communities in Cambodia. Worth noticing, the PPSEZ has established a sub-zone called the Poi Pet Economic Special Zone (Poi Pet SEZ) at the Thai-Cambodian border, aligning a collaborative development trend between the two zones. The Poi Pet SEZ functions similarly to the PPSEZ, leveraging the Southern

Economic Corridor of the Greater Mekong Subregion Cooperation (GMS) led by the Japanese government. It utilizes Thailand's infrastructure, Cambodia's labor force, and serves Japan's "Thailand+1" strategy, providing greater investment convenience for more Japanese manufacturing and warehousing and distribution companies. Currently, the industries of the enterprises in the Poi Pet SEZ mainly focus on automotive components, electronics, garments, packaging, plastic products, and parts manufacturing. The Poi Pet SEZ and the PPSEZ together serve as development nodes along the Ho Chi Minh City-Phnom Penh-Siem Reap-Bangkok Southern Economic Corridor of the GMS. The coordinated development of these two SEZs has allowed the PPSEZ to maintain a favorable development momentum even during the COVID-19 pandemic. According to the company's financial report published at the end of 2021, the PPSEZ's revenue exceeded 6 million USD in the fourth quarter of 2021, and 10 million USD annually; In 2019, the export value of goods from the PPSEZ reached 518 million USD, a year-on-year growth of 15.9 per cent. Among the exported products, 68 per cent were sold to Japan, Thailand, China, and Vietnam (Cambodia Investment Review, 2022). These advantages make it easier for the PPSEZ to achieve its development goals and gain recognition from the local society in Cambodia.

Disadvantages: the PPSEZ is oriented in serving Japanese multinationals' industrial strategy, and disregards Cambodia's need to develop its own industrial path. The leading enterprise Sumitomo Co., as a profit-driven company, does not have the motivation to strategize Cambodia's industry development schema. Therefore, riding with the PPSEZ and its subsidiary, the Poi Pet SEZ, Cambodian manufacturers are currently anchored at the subordinate position in the Japanese manufacturing network in the Mekong subregion. Holding the Cambodian manufacturing in the PPSEZ as a subordinating part in the industrial chain of Japanese companies in Southeast Asian countries has further limited the independent development of local industries in Cambodia. This also indirectly confirms the concerns of several scholars about the limited spillover effects of SEZs (Khmer Time, 2016).

### ***4.3 Factor Conditions: Phnom Penh SEZ Solved Part of the Financing Problem But Other Problems Remain***

The Phnom Penh SEZ has successfully transformed adversarial conditions to advantageous conditions. For example, to guarantee sufficient electricity

supply, the SEZ has its own power generating facilities. Additionally, to ease the pressure of capital insufficiency, the SEZ went public in 2016 as the largest SEZ in Cambodia. At the first day of listing, the stock price of the PPSEZ opened at 2,980 Riel per share, and the trade volume registered 24,078 shares, worth \$17,927 US dollars in the first day (Adrianople group, 2019). In 2019, the market capitalization of the SEZ reached \$35 million US dollars (Adrianople group, 2019). Recently, the PPSEZ was acquired by the Royal Group Cambodia at \$16 million USD.

Disadvantages: the cost of electricity is relatively high, and in the meantime, logistics costs are high due to insufficient infrastructure outside the PPSEZ. Also, although the SEZ has tried to upgrade skills of the labor force through training, the lack of skilled workers continues to restrict further development of Cambodia. By April 2016, there have been 80,000 jobs within the SEZ, however only 15,000 workers were employed (Adrianople group, 2019). Furthermore, the actual wage increase in Cambodia recently denotes that the era of cheap labor is about to end (the China-UNDP ASEAN Symposium, 2017). In 2012, the minimum wage of textile workers was \$61 US dollars, which increased to \$140 in 2016, and \$182 in 2019. The increased labor costs have driven out many low-end labor-intensive Japanese manufacturers from the SEZ (Adrianople group, 2019). Lastly, the high illiteracy rate in Cambodia requires longer time of training and education to achieve the level of productivity as in Thailand and Vietnam (the China-UNDP ASEAN Symposium, 2017). Counting for training costs, the labor cost in Phnom Penh is not low.

#### ***4.4 Demand Conditions: The Matched Demands of Phnom Penh SEZ and Local Development***

Development goals of Phnom Penh SEZ are aligned with the *Cambodia Industrial Development Plenary 2015-2025*. The latter, officially issued in March 2015, has projected higher productivity and diversity of sustainable economic growth through skill transformation, and clearly proposed a transition to higher value adding productions through structural reform, expecting to transform Cambodia into an industrial nation (the China-UNDP ASEAN Symposium, 2017). The Plenary has listed five priorities: to promote investment through improving investment environment and developing SEZs; to cultivate modern small and medium enterprises through institutional facilities, incentive measures and agricultural modernization;

to improve supervision environment; to provide counterpart policies for coordination; to improve investment environment by enhancing electricity availability, reducing manufacturing costs, developing logistics systems, and improving labor market administration. All of these goals are in line with that of the Phnom Penh SEZ in its development measures.

Both PPSEZ and Sihanoukville SEZ are instrumentally accordant with the *Special Economic Development Plans 2009* and the *Cambodia Trade Integration Strategy (2014-2018)*. For example, the main industrial goals of PPSEZ is to attract labor-intensive industries, such as apparels, shoes, food processing, agricultural products, mechanical electrics and other consumables (e.g., pharmaceuticals and packaging). A few companies are dedicated in auxiliary industries, such as carton, plastic packaging and threads manufacturing. These industries have reduced fragility of Cambodia in sluggish times of the global apparel industry (the China-UNDP ASEAN Symposium, 2017).

#### **4.5 The Governmental Force: Government's Support to Phnom Penh SEZ**

The Japanese-Cambodia PPSEZ cannot go without the support and promotion from the Cambodian government. This support has two advantages: firstly, the leading enterprise Sumitomo and the Cambodian government have jointly established the SEZ development platforms. For example, the Cambodian government founded the Council for the Development of Cambodia in 2005, chaired by Prime Minister Hun Sen. The CDC issued the administrative order of establishing special economic zones in the nation and promised to fully support the development of SEZs. The other institutional support from the government includes the Cambodia Special Economic Zone Board, which is responsible for the joint-administration of the SEZs. Furthermore, other functional platforms include the SEZ Administrative Office, Administrative Service Center, Center for Business Registration, Labor Dispute Arbitration, and the Obstacle Removal Committee of SEZs led by the Prime Minister Hun Sen, who would personally get involved whenever major issues occur.

Secondly, the government also provides multiple preferential policies to the SEZs. The first, qualified investors enjoy preferential taxations policies, including exemptions of import tariff of construction materials and machinery, import and export tariffs on raw materials, and free profit taxes for SEZ tenants. The second, preferential taxation policies apply to

QIP enterprise investing in the SEZ, including exemption of tariffs and VATs on construction materials, machinery, and productive materials for exporting companies as well as companies targeting domestic markets. Other preferential policies include non-discriminant treatment to foreign investors other than land ownership. Foreigners and foreign companies enjoy 50 years of lease period of land titles (transferrable). Lastly, no limitation on currency exchange and capital transfer. However, the government has insufficient tools to let SEZ industries conform to the nation's own industry development.

#### **4.6 Chance**

Cambodia is enjoying its golden development opportunity. In the past decade, the Cambodian economy has kept high rate of growth, which promoted the transitional window for Cambodia to transform from textile industry to a variety of other industries, thereby improving its position in the global value chain. Secondly, the Cambodia Industrial Plan (2015-2025) and its institutional strategy guarantees the direction of modernization of agricultural and service industries, which is expected boost up higher growth rate. Thirdly, as an emerging market, many industries in Cambodia are at its infant stage, such as e-commerce, IT sectors. Vacancy means commercial opportunity. Fourthly, the "Thailand+1" strategy of Japanese companies in Southeast Asia and the development of the Southern Economic Corridor in the Greater Mekong Subregion (GMS) continuously promoted by the Asian Development Bank and the Japanese government. The development of the PPSEZ also aligns with these development trends, resulting in a shift towards higher value-added industries within the zone.

### **5. Advantages and Disadvantages of the Sihanoukville SEZ**

The Sihanoukville SEZ is a joint effort by Chinese and Cambodia enterprises in Sihanoukville province in Cambodia. The SEZ officially incepted in February 2008 by the Prime Minister Hun Sen. In October 2016, president Xi Jinping called the Sihanoukville SEZ an "exemplar model for pragmatic China-Cambodia cooperation (Li and Shi, 2016). The SSEZ features in promoting development of the entire province of Sihanoukville through the development of the SEZ. The following offers an analysis of the development of this SEZ from the perspective of the Porter's Diamond model, and points out the advantages and disadvantages of its development.

### 5.1 Enterprise Competitiveness

Hongdou International is the leading enterprise of Sihanoukville SEZ, and the following discusses its competitiveness. Firstly, Hongdou has competitiveness in the textile industry, which is also the determinant of the industry positioning of the Sihanoukville SEZ: to be a comprehensive, modern SEZ specializes in textiles, apparels, and mechanic electrics. As a result, the first batch of tenants are mostly in the textile industry, such as Suzhou Yunying Textile Co., Poly Textile, Golden Morning Knitting, and Mingyuan Home Textile etc.

Secondly, Hongdou has some competitiveness in attracting investors. Currently, 103 tenants have signed up for the SSEZ tenures, among which, 88 manufactures are in operation. See Table 4 for a list of some worthy performers. Thirdly, the cooperation between Hongdou and local authorities is smooth. Tenants of the SEZ enjoy 9 years of tax exemption, and the government provides one-stop service from administrative to custom clearance. The administrative services include business registration, custom clearance, quarantine, origin of product certification etc., all can be done at the one-stop service window at the comprehensive service center in the SEZ. Such arrangements are similar to those in the Phnom Penh SEZ.

**Table 1. List of Sihanoukville SEZ’s Tenants**

No.	Company	No.	Company
1	HongDou International	20	Qiushi Polyurethane Materials (Cambodia) Co, Ltd.
2	Shandong Forest Wood (Cambodia) Co., LTD.	21	Guifeng Optoelectronics Technology
3	Ophiah Leather (Cambodia) Co., Ltd.	22	(Cambodia) Co., Ltd.
4	Else·Electronic (Cambodia) Co., Ltd.	23	Romantic Leather (Cambodia) Co., Ltd.
5	Izymi Electronic(Cambodia) Co., Ltd.	24	Oceans·(Cambodia) Co., Ltd.
6	Cambodia Gateway Under Wear Co., Ltd.	25	Hai Lingmeng (cambodia) Home·Textiles Co., Ltd.
7	Rebecca Hair Products (Cambodia) Co., Ltd.	26	Kaitai Home Textile (Cambodia)
8	Suncheng Industry (Cambodia) Co., Ltd.	27	Fazzinin Home Textile (Cambodia)Co., Ltd.
9	Keri Sofa Leather (Cambodia) Co.,·Ltd.	28	Zhejiang Dongchen Construction Co., Ltd.

No.	Company	No.	Company
10	Kolaiya (Leather) Cambodia Co., Ltd.	29	Nanjing Yaohua Earthwork Engineering Co., Ltd.
11	J.D.Y.Pharm Co., Ltd	30	Hexxon International
12	Jiangxia Clothing (Cambodia) Co., Ltd	31	Corporation Co., Ltd
13	Wells (Cambodia) Steel Engineering Co., Ltd.	32	Link Star Logistics Co., Ltd
14	Huihuang Shoes Co., Ltd.	33	Royal Cargo Combined-Logistics Inc
15	Wan Hai Hanger (Cambodia) Co., Ltd.	34	Junhui Shipping (Cambodia) Co., Ltd.
16	Cambodia Saint Rose Garment Co., Ltd.	35	Jiahua Bank
17	Caffco International (Cambodia) Co., Ltd.	36	Horseware Products (Cambodia) Co., Ltd.
18	Cambodia Full Star Home Textiles Co., Ltd.	37	Galey Global (Cambodia) Co., Ltd.
19	Cambodia Handlift Product Co., Ltd.	38	Jinchengyuan (Cambodia) Co., Ltd.

Source: Website of the Sihanoukville SEZ

Thirdly, Hongdou has leveraged the Chinese textile supply chain to promote the development of imports and exports in Cambodia. The textile enterprises within the Sihanoukville SEZ, as part of the global textile industry supply chain in China, have played a positive role in enhancing the global competitiveness of Hongdou's in the textile industry. Particularly after the outbreak of the COVID-19 pandemic, the import and export volume in the cooperation zone has maintained a growing trend. According to Cambodian customs data, in 2020, the SSEZ handled a total of 44,325 TEUs of import and export containers, representing a 27.42 per cent increase compared to the previous year. The total import and export value reached \$1.565 billion, showing a 26.52 per cent increase compared to the previous year. This has played a proactive role in stabilizing local employment and promoting economic and social development (Renminwang, 2021). In 2021, the cumulative total import and export value of all enterprises in the zone reached \$2.234 billion, with a year-on-year growth of 42.75 per cent, injecting strong momentum into local development (SSEZ, 2022). The foundation for achieving the aforementioned development lies in the preferential trade conditions that Cambodia enjoys in various sectors with European and American countries, which has facilitated the establishment of a manufacturing base for the textile industry in the SEZ. In terms of the

contribution of the Sihanoukville SEZ to Cambodia's imports and exports, it is on par with the leading companies in the Phnom Penh Special Economic Zone in terms of strength.

Fourthly, the initial impact on the local society has emerged. The development of the SSEZ has not only brought changes to the occupational structure of the local population but also stimulated the economic development of the province. According to statistics from 2022, the SSEZ has provided 30,000 job positions for the local population, and approximately 70 per cent of households in the area have family members employed in the zone (*Renmin Ribao*, 2022). This significant workforce proportion has resulted in a higher ratio and scale of local residents employed in the SSEZ compared to other SEZs in Cambodia. Through the efforts of SEZ and the local community, in 2017, the per capita GDP of Preah Sihanouk province exceeded \$2,000, ranking among the highest in Cambodia, and the economic contribution of the Sihanoukville SEZ to the province exceeded 50 per cent (*China Daily*, 2019). From 2007 to 2017, the SEZs in Preah Sihanouk province and Phnom Penh not only experienced the fastest employment growth but also showed significant improvements in average wages and education levels compared to other regions (Cambodia Social Economic Survey, 2013; CDC, 2017).

Disadvantages of the leading companies are as follows: First, the SSEZ lacks attractiveness to third-country companies other than those from China and Cambodia. Although information from the official website of the SSEZ shows the presence of companies other than Chinese ones, apart from local enterprises, there are only a few third-country companies, such as Cathay United Bank, Caffco International, and an Irish car assembly plant.

Second, the profit model is relatively singular, and the profitability is slightly insufficient. Land leasing and property management are the main profit sources for the SSEZ. Despite adopting a market-oriented approach, the continuous provision of various public services in the cooperation zone incurs significant costs. In recent years, there has been no significant growth in land leasing and property management fees. Considering the overall situation, the existing profit capability of the business model of the SSEZ is unable to sustain higher operating costs. The tenant enterprises operating separately from the SEZ also face insufficient profitability.



### 5.2 *Related and Supporting Industries and Development Environments*

The SSEZ has availed some conditions in terms of related and supporting industries from three aspects: firstly, investment preferential policies and institutions are continuously improved. Both Cambodia and China are members of WTO, and the trade between the two countries is increasing convenient. Cambodia does not suffer from trade barriers such as anti-dumping and anti-subsidy applied by developed nations, and the production costs in Cambodia are relatively low. Also, with the inception of China-ASEAN FTA and RCEP, Cambodia-made products can enter markets in 16 regional partners without tariff.

Secondly, relevant management institutions and public service facilities have been improved. The SSEZ has established a “one-stop” administrative service window consisting services from the Cambodian Development Council, Customs, Inspection and Quarantine, Ministry of Commerce, Department of Labor, and Sihanoukville Provincial Government. This provides tenant enterprises in the SEZ with “one-stop” services such as license processing, registration, customs clearance, and inspection. Additionally, hotels, dormitories, and a trade market have been constructed, and service-oriented institutions such as logistics clearance companies, shipping agents, and Cathay United Bank have been introduced to improve the production and living environment within the zone (Zhao, 2021, p251). Through infrastructure improvement and effective policy coordination, Sihanoukville’s infrastructure ranks among the top in Cambodia’s special economic zones. According to Table 2, the Sihanoukville SEZ has advantages over other special zones in Cambodia in terms of water supply, waste treatment, telecommunications facilities, and electricity connectivity and pricing.

**Table 2. Evaluation of Operation Environment of SEZs in Cambodia**

Location	Water	Waste Disposal	Telecommunications	Electricity
Phnom Penh	1.4	2.1	2.3	1.8
Bavet	1.9	2.0	2.1	2.7
Sihanoukville	1.8	1.9	2.2	2.3
Poipet	2.0	2.0	3.0	3.0
Footwear	1.7	1.9	1.6	2.1
Garments	1.9	1.9	2.1	2.6

Location	Water	Waste Disposal	Telecommunications	Electricity
Home Furnishings	1.6	1.9	2.6	2.2
Light machinery	1.9	2.3	2.3	2.3
Luggage and bags	2.0	1.6	2.0	2.4
Other light manufacturing	1.7	2.2	2.3	2.4
All respondent firms	1.8	2.0	2.2	2.4

Notes: 1 = Good, 2 = Average, 3 = Poor

Source: Warr, P. & Menon, J. (2015, p. 16).

Thirdly, the improvement of the above-mentioned environmental conditions in the SSEZ has made it the best-performing economic zone in Cambodia in terms of overall business environment. Based on the development in various aspects mentioned above, the business environment of enterprises in the SSEZ excels not only in terms of infrastructure quality, quality of public services, and policy stability but also surpasses the average level of Cambodia’s economic zones. It achieves the highest rating among the major special zones in Cambodia, as shown in Table 3.

**Table 3. Evaluation of Overall Business Environment of SEZs in Cambodia**

Location	Quality of Infrastructure	Quality of Public Services	Variability of Government Policies
Phnom Penh	2.6	2.7	2.3
Bavet	2.9	3.1	2.1
Sihanoukville	2.3	2.6	1.0
Poipet	3.0	3.0	2.0
Footwear	2.4	2.6	1.7
Garments	2.6	2.9	1.9
Home Furnishings	2.3	2.8	2.2
Light machinery	2.9	2.7	1.9
Luggage and bags	2.4	2.2	1.4
Other light manufacturing	2.8	3.0	2.5
All respondent firms	2.6	2.8	2.0

Notes: Columns 1 and 2: 1 = Very good, 2 = Good, 3 = Average, 4 = Poor, 5 = Very Poor. Column 3: 1 = Very good, 2 = Good, 3 = Average, 4 = Low, 5 = Very low.

Source: Warr et al. (2015, p. 22).

The deficiency in terms of the supporting conditions in the SSEZ is mainly the insufficient attraction of local enterprises, which is necessitated by the lack of localization of the SEZ. This issue is not unique to the SSEZ but common to other SEZs in developing countries like Cambodia. Researchers believe that SEZs in developing countries have limited impact on the development of local enterprises. Data shows that only 12 per cent of registered local companies in Cambodia are located within SEZs, while 62 per cent of local companies are outside of these zones. This significant difference indicates a relatively weak linkage between economic zones and local businesses and the local economy.

### ***5.3 Factor Conditions: Changes in the Sihanoukville SEZ and the Entire Province***

The factor conditions available to the Sihanoukville SEZ are similar to that of the Phnom Penh SEZ, namely, advantageous geographic location and low-cost labor force (Jia, 2012). On the other hand, the unfavorable conditions are also similar: insufficient infrastructure, high logistics cost, lack of skilled labor and insufficient development capital. However, it is noteworthy that the SSEZ has achieved more output in terms of transforming local conditions: the overall development not limited within the SEZ, but radiated to the entire Sihanoukville province. Such changes can be seen in the following categories:

Firstly, infrastructure wise, the SSEZ has put up its own water supply factory, power plant, which satisfied water and electricity supply in the SSEZ. According to related statistics, the level of infrastructure development in SSEZ ranks among the best of all SEZs in Cambodia, as seen in Table 3. Furthermore, the SEZ also takes the lead in local infrastructure development. Currently, the average electricity cost in Sihanoukville has reduced to 7-8 US cents from 15-20 US cents, a benefit for both enterprises and people living in Sihanoukville (Li and Shi, 2016). Prior to the establishment of the SSEZ in 2007, Sihanoukville Province lacked large capacity sea ports and highways. Even the mileage of national roads was limited, resulting in a low overall level of transportation infrastructure. Currently, with the transformation of the port by the SSEZ, the port transportation has become a highlight for attracting investment in the SSEZ, facilitating the import and export of goods in the zone and Sihanoukville City. Since the opening of the Phnom Penh-Sihanoukville Expressway, constructed with Chinese aid, the travel

time from Phnom Penh to Sihanoukville has reduced from 8 hours to 2.5 hours, improving Cambodia's transportation system and effectively reducing logistics costs (Sohu, 2020). This can be seen from Table 5 in subsequent sections that the SSEZ enjoys higher convenience in container transportation and multimodal connectivity compared to other special economic zones in Cambodia.

Secondly, the SSEZ has developed its own characteristics in talent development. By establishing training centers and subsequently building universities, it addresses the shortage of technical and managerial talents in the cooperative zone and the local area. In 2012, Sihanoukville and Wuxi Business Vocational College jointly established a “training center” where diploma courses in Chinese, English, Management, Trade, Accounting, Computer Science, and Logistics are taught. Since 2012, the training center has organized 14 classes of training, involving 40,000 trainees. On this foundation, the China-Cambodia Sihanoukville Institute of Science and Technology was established in 2018. The college now has over 700 students. In late 2018, another college, co-invested by SSEZ and Wuxi College of Business Administration, the Sihanoukville Institute of Business and Technology has been approved for degree education (Xinhua Net, 2019). Boosted by these projects, the number of skilled workers continues to increase, not only higher than Phnom Penh, the quantity also stands out among all other SEZs in Cambodia (War & Menon, 2105), see Table 4.

**Table 4. Employee Structure of Cambodian SEZs (By SEZ Location and Category of Industries)**

Location	Low-Skilled Production Workers		Semiskilled Production Workers		Nonproduction Workers (managers, administration, sales)	
	Khmer	Foreign	Khmer	Foreign	Khmer	Foreign
Phnom Penh	2,294	0	491	42	129	42
Bavet	9,542	19	7,621	109	567	213
Sihanoukville	2,142	7	2,262	17	94	118
Poipet	315	0	15	0	2	0
Footwear	6,068	0	1,097	12	233	51
Garments	3,881	0	4,367	85	179	73
Home Furnishings	1,190	0	2,039	11	118	137

Location	Low-Skilled Production Workers		Semiskilled Production Workers		Nonproduction Workers (managers, administration, sales)	
	Khmer	Foreign	Khmer	Foreign	Khmer	Foreign
Light machinery	256	0	1,326	5	112	60
Luggage and bags	150	7	622	1	16	16
Other light manufacturing	2,748	19	938	54	134	36
All respondent firms	14,293	26	10,389	168	792	373

Source: Warr et al. (2015, p. 16).

Currently, the SSEZ faces two main issues related to factor conditions. Firstly, tenant companies face difficulties in financing, which is associated with poor financing conditions in Cambodia. The market mechanisms in Cambodia are not sufficiently sound. While Cambodia's unrestricted foreign exchange was originally an advantage to attract foreign investment, the drastic fluctuations in exchange rates are susceptible to global economic fluctuations, thereby increasing the difficulty for foreign enterprises to secure financing. As the leading enterprise—Hongdou, finds it desperate to change the investment environment in Cambodia. Moreover, the construction investment in the SEZ is substantial, resulting in higher risks, and lenders often set high thresholds (Zhang, 2018). Additionally, as the SEZ involves overseas investments, it is difficult to obtain loans from Chinese commercial banks. These factors contribute to financing difficulties faced by many Chinese overseas SEZs, including the SSEZ.

Secondly, there is room for improvement in the proportion of local people in technical and managerial positions within the SSEZ. The proportion of local talents in these positions within a SEZ is a key indicator of the zones' ability to transfer skills to the local population. As shown in Table 4, while the SSEZ has a considerable number of semi-skilled technical workers and managerial talents, there is still significant room for improvement when compared to the Bavet Economic Zone and the footwear industry. Furthermore, the insufficient local talents are not only a challenge faced by Chinese overseas SEZs but also for other SEZs in developing countries.

#### **5.4 Demand Conditions: Match of Demands Between Sihanoukville SEZ and Local Community**

Similar to the Phnom Penh SEZ, the Sihanoukville SEZ matches with the socioeconomic development of the Cambodian society in terms of demands. Such match in demands has realized a harmonious development dynamic between the SSEZ and Sihanoukville province. Specifically in two aspects:

Firstly, SSEZ has outstanding logistics capabilities. Currently, there are 116 enterprises operating within the SEZ, most of which are export-oriented manufacturers. The seaport of SSEZ has robust infrastructure conditions, which becomes the highlight of Sihanoukville in attracting investors as the port provides convenience in cargo trades as well as lowered logistics costs (SSEZ, 2017). As shown in Table 5, the logistics cost in Sihanoukville SEZ has competitive advantage among all other SEZs in Cambodia.

**Table 5. Comparison of Logistics Costs Among Cambodian SEZs (By Location and Industries)**

Location	Average Transport Cost per Caontainer to Port (\$)	High Cost	Major Logistics Difficulty	
			Uncertainty in Delivery Dates	Lack of Multimodal Connectivity
Phnom Penh	1,500	100	0	0
Bavet	503	78	11	0
Sihanoukville	500	46	11	11
Poipet	250	100	0	0
Footwear	489	57	0	0
Garments	599	64	7	0
Home Furnishings	743	71	7	21
Light machinery	738	71	14	0
Luggage and bags	338	80	0	0
Other light manufacturing	544	55	18	0
All respondent firms	614	66	9	5

*Source: Warr et al. (2015, p. 26).*

Secondly, the development goals of SSEZ fit the local demand, and thereby pushing the entire province of Sihanoukville forward. Statistically, in 2017, the GDP per capita in Sihanoukville province exceeds \$2,000 US dollars, top the whole country. Furthermore, the SEZ alone has contributed over half of the province's GDP and provided over 30,000 jobs in the province of Sihanoukville (*Wuxi Ribao*, 2019).

### **5.5 Government: Policy Supports from both Chinese and Cambodian Governments**

The Sihanoukville SEZ has received significant support from the governments of China and Cambodia since its establishment, successfully completing policy coordination and forming policy interaction advantages. Firstly, the SSEZ was established based on an intergovernmental agreement. On December 13, 2010, the two national governments have signed the *Agreement between the Government of the People's Republic of China and the Government of the Kingdom of Cambodia concerning the Sihanoukville Special Economic Zone*, which laid the foundation for policy communication and coordination for the development of the SSEZ.

Secondly, the Chinese and Cambodian governments have established a Policy Coordination Committee. As early attempts to coordinate policies with Cambodian partners encountered difficulties, the Chinese Ministry of Commerce and the Cambodian Development Council have organized two working group meetings and two deputy ministerial meetings since 2012 to address interregional and interdepartmental matters on a regular basis.

Thirdly, in the Joint Statements issued by China and Cambodia in 2012, 2016, and the Joint Communiqué in 2019, the SSEZ was identified as a priority development project. The high-level supports from the Chinese and Cambodian governments and their commitment to the development of the SSEZ have effectively addressed institutional differences and policy adaptability issues encountered during its development. Therefore, achieving policy coherence and coordination in the cooperative zone requires joint efforts and investment from both businesses and governments. The advantage of policy coordination in the SSEZ is similar to that of the Phnom Penh SEZ.

## 5.6 Chances

The development opportunities for the Sihanoukville SEZ, apart from the previously discussed developmental chances, also come with the all-round cooperation with China. In April 2019, *the Action Plan 2019-2023 on Building China-Cambodia Community of Shared Future* was officially signed (Wang, 2019). In terms of the economic cooperation, the plan proposed a complete docking strategy under the BRI framework where the two nations will gradually form a high level of economic integration as a mutual reliance interest community, for the wellbeing of people of the two nations. This high-level institutional arrangement undoubtedly provides important opportunities for the Sihanoukville SEZ development.

## 6. Conclusion

This study analyzed the strengths and weaknesses of two major SEZs in Cambodia under the framework of Porter's Diamond Model. The analysis has revealed the following findings. Firstly, the key reason why both the Phnom Penh SEZ and the Sihanoukville SEZ have achieved the best development prospects in Cambodia is that they possess some basic elements required for the development of SEZs. They not only seize the development opportunities in their respective countries but also effectively coordinate policies within the SEZs through intergovernmental cooperation. Moreover, the leading enterprises demonstrate strong competitiveness and have the ability to transform unfavorable production factors into favorable ones, gradually improving the business environment within the zones, founded on which, the SEZs are able to attract continuous investments from companies of different nationalities, providing a large number of employment opportunities for local people. Furthermore, both the PPSEZ and the SSEZ can leverage their domestic manufacturing industry chains to have a positive impact on expanding Cambodia's import and export activities. From this perspective, the Porter's Diamond Model can serve as one of the frameworks for analyzing the competitiveness and influence of SEZs. However, since this article is based on qualitative analysis, its generalizability may be limited, and it is expected that more quantitative analysis can be conducted from this perspective for validation.

Secondly, investments in the Phnom Penh SEZ are primarily driven by corporate behavior. The focus of the leading companies is more on corporate



profitability, and the Japanese SEZs are positioned as a subordinating position within the “Thailand+1” strategy of the conglomerates. When promoting the integration of Phnom Penh into the southern economic corridor of the GMS and the “Thailand+1” industrial chain of Japanese companies through its subsidiary, Poi Pet SEZ, the Phnom Penh SEZ may have limited capacity and space to consider Cambodia's own manufacturing industry development. On the other hand, the development of the Sihanoukville SEZ is not only driven by corporate behavior but also by intergovernmental cooperation, as mentioned earlier, and therefore carries greater responsibilities. Based on the development of the SSEZ in the past decade, it has focused more on improving the business and development environment both within and outside the SEZ. Additionally, due to the relatively narrow profit model of the SSEZ and the various restrictions faced by Chinese state-owned enterprises in foreign financing, the SSEZ still faces some financing issues. These differences not only reflect the distinct characteristics of the two SEZs but also highlight the key differences in Chinese and Japanese investment behaviors in Southeast Asian countries.

Thirdly, it is challenging for both SEZs to bring about structural changes in their respective cities through the SEZs in the short run. Therefore, both SEZs face limitations in driving industries outside the zones. Since the investments in the PPSEZ are more corporate-inclined, the interaction between the PPSEZ and other Japanese overseas SEZs in Southeast Asia is more prominent than with Cambodian companies outside the PPSEZ. In the case of the Sihanoukville SEZ, it appears to intend to have a greater impact beyond the zone, considering the improvements in the industrial environment and talent development models. As mentioned earlier, the construction of local social infrastructure and the cultivation of talents have significantly improved at the provincial and municipal levels in Sihanoukville. The changes in the development environment have an undeniable impact on the local communities of Cambodia. As the development environment changes, it not only optimizes infrastructure such as electricity and transportation but also potentially drives changes in the local people's perception of “development” and a shift from an agricultural-dominant population structure to an industrial and service-oriented one. This awareness and change in the social structure are crucial for Cambodia's sustainable development. However, relying solely on the development of the SSEZ is insufficient to bring about structural changes in Cambodia's development

environment. Therefore, the “Joint Statement between China and Cambodia” released in 2023 proposes that China will encourage more Chinese companies to invest and operate in Cambodia, supporting the construction of the Sihanoukville Multi-Functional Economic Demonstration Zone to promote the development of Cambodia’s “industrial development corridor”. In the future, more domestic and foreign companies from Cambodia will be encouraged to participate in Cambodia’s development to gradually promote greater industrial development. The different characteristics of the Sihanoukville SEZ and the Phnom Penh SEZ also provide different options and paths for Cambodia’s industrial development.

## Notes

1. Research on International Trade and Economic Cooperation issued by the Ministry of Commerce of China and the Representative Office of the United Nations Development Programme in 2019 pointed out that “Overseas economic and trade cooperation zones are an important platform to carry and consolidate the development experience of China’s 40 years of reform and opening up”.
2. During the initial stages of the construction of the Malaysia-China Kuantan Industrial Park, there were various speculations and distrust from the Malaysian media towards the economic park, partly due to inadequate communication between the industrial park and the local community. Similarly, in the case of the “Seven Stars Bay Cambodia-China Comprehensive Investment and Development Experimental Zone” established by Chinese companies in Preah Sihanouk Province, there have been allegations by foreign media of it being a military base. This is partly attributed to the lack of collaboration between the leading enterprises of the experimental zone and local businesses, as well as insufficient transparency in the dissemination of information about the experimental zone’s construction.

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# **Book Review**



## Book Review

David Shambaugh. *China's Leaders: From Mao to Now*. New York: Polity Press, 2021. 416 pages. \$29.95. ISBN 978-1-5095-4651-0.

In this timely and masterful study of Chinese elite politics, David Shambaugh provides us with a most up-to-date and an authoritative account of the five most influential political leaders and their capability to exercise leadership and handle crises from 1949 to the present.

The book consists of seven concise chapters. In the introduction, Shambaugh argues that the system of elite politics in the People's Republic is not a monolithic Leninist entity, but is characterized by “a repetitive pattern of oscillation back and forth between periods of relative relaxation followed by periods of tightening and repression” (p.2). The successive chapters draw on in-depth biographical studies of Mao Zedong, Deng Xiaoping, Jiang Zemin, Hu Jintao and Xi Jinping to illustrate the resilience of elite politics and autocratic governance in each case.

After the founding of the People's Republic in 1949, the Chinese Revolution proceeded a different trajectory in the socialist camp. Mao Zedong, an uncrowned monarch and a “populist tyrant,” ran the country's state of affairs by mobilising the masses in numerous campaigns against his rivals within the Party-state (chapter 2). Mass mobilisation characterised his decades-long unrivalled dictatorship. Undoubtedly, Mao created a wide range of institutional mechanisms to control all spheres of society, and launched nationwide campaigns to politicise everyday life. Unlike Stalin, Mao encouraged popular criticisms of government officials and Party leaders through the Cultural Revolution, but the hostile criticisms and discontents almost brought down the Party-state. Then, Mao suppressed the very popular outpourings that he had encouraged. Since then, Communist ideology as a belief system collapsed, and Mao's successors implemented reforms to distract people's attention from class struggles.

Chinese pragmatism—despite the rhetoric of Marxism, Leninism and Mao Zedong thought—prevailed under Deng Xiaoping's “open door policy” (chapter 3). From the 1980s onwards, economic growth, rather than Mao's revolutionary ideology, has become people's desire, and thus the road to

the Communist Party's legitimacy. Although Deng's four modernisations improved the livelihoods of hundreds of millions of people, the Party-state never gave up its monopoly of political power. When people challenged the legitimacy of the Party-state, Deng did not hesitate to call in the troops to restore control. This is exactly what happened during the violent suppression of the 1987–1989 Tibetan protests and the 1989 deadly crackdown on the Tiananmen Square pro-democracy movement. The ongoing tension between state and society remains an integral part of Chinese politics. The Tiananmen massacre was the darkest strain in Deng's otherwise extraordinary political career, and a handful of Leninists almost derailed his economic legacy. Deng eventually neutralized his opponents and rescued the reform programs through a highly orchestrated, quasi-imperial "southern tour" of coastal economic zones in 1992.

Deng's appointee, Jiang Zemin (chapter 4) was widely seen as a transitional figure but he stabilized Sino-American relationship, ensured a steady period of economic recovery, and continued to operate behind the scenes after handing over the authority to Hu Jintao in 2002. Furthermore, Jiang implemented Deng's vision of "one country, two systems" in postcolonial Hong Kong and Macao, and this marked the beginning of rising Chinese patriotism in domestic politics.

Compared with Deng and Jiang, Hu Jintao (chapter 5) is a technocrat and lacks charisma. Despite his failure to command total dominance in the Party-state's leadership, Hu did fairly well in governance and diplomacy. On the economic front, Hu carried out effective policies to attract foreign capital to support China's transformation and industrial growth. The Hu administration enabled China to speed up the pace of modernization and win support from the world.

However, before Xi Jinping (chapter 6) took reins of the power in 2012, the Communist Party-state, in 2009-2010, had tightened control over domestic dissent. Xi distinguishes himself from his predecessors in many respects. "Like other nationalist/populist autocratic leaders, Xi absolutely and unapologetically rejects the linkage of progress with liberalism." He is "a hard-core Leninist and in some ways a throwback to the Stalinist era. He may preach Marx, but he practices Lenin and Stalin" (p.283). His obsession with "the absolute hegemonic power of—and control by—the Communist Party" (p.284) signals an ideological turn to the Maoist era. Worse still, he runs the Party-state like "a military organizing by giving orders to be

followed, rather than as a collective organization with collegiality, feedback mechanisms, and procedures to curtail dictatorial practices” (p.285).

Xi’s confidence resonates with Indian political scientist B. M. Jain’s analytical concept of geopsychology in politics, in which China’s pursuit of hyper-nationalism is rooted in its past national humiliation suffered at the hands of foreign imperialists and in its Middle Kingdom mind-set that perceive neighbouring countries as tributary states, not sovereign equals (B. M. Jain’s *The Geopsychology Theory of International Relations in the 21<sup>st</sup> Century: Escaping the Ignorance Trap* [Lanham, MD: Lexington Books, 2021]). Ever since the outbreak of the COVID-19 pandemic in Wuhan in late 2019, Xi has been keen to demonstrate the superiority of China’s authoritarian governance in crisis management against liberal democracies. Unfortunately, at the time of writing in 2022, Xi is still adhering to his zero-COVID policy and has closed many of China’s doors to the outside world. Shambaugh concludes, “Opening a system and a country shows confidence—closing up and cracking down reveals lack of it” (p.287). As with Mao’s dictatorial control, the single-person rule of Xi Jinping risks overlooking organizational vulnerabilities in the gigantic Chinese bureaucracy. In times of peace and stability, this vertical structure guarantees an efficient control of bureaucratic decision-making and projects an image of commanding leadership. However, at the horizontal level, when everything starts to fall apart, this top-down mode of governance fails to ensure the steady flow of reliable information from a wide range of departmental agencies (chapter 7).

Overall, *China’s Political Leaders* purveys a highly critical, comprehensive and insightful coverage of Chinese elite politics. Moreover, Shambaugh’s well-written style makes reading the account more enjoyable and rewardable. This book is patently useful for the new generation of political leaders to learn the art of governance, albeit with caution and in a critical fashion, and is a must study for journalists, policy analysts, scholars and students of contemporary Chinese history, politics and diplomacy.

*Joseph Tse-Hei Lee*  
*Pace University in New York City*



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