International Surveys and Soft Power
Examining the Influence of Foreign Media Advertisements
and South China Sea Events on Global Approval of China

By: Khair, Rayhan.

Background

The controversy over the Nine-Dash Line has stoked tensions and conflicts in the South China Sea region. The People's Republic of China (PRC) asserts that the line represents its historical rights and sovereignty over the territory. In contrast, other nations such as Brunei, Indonesia, Malaysia, the Philippines, Taiwan, and Vietnam contest its legality and legitimacy under the justification of international law.

By examining international public opinion surveys recording favourability towards China during 2010-2020, using open-source data analysis, we can create a cross-national measurement of Chinese soft power. Using statistical models, we can compare whether respondents living in countries with more foreign media advertisements or more significant numbers of SCS (South China Sea) conflictual events express different rates of favourability towards the PRC. Through this research, it would be possible to determine whether a global effort to advertise conflictual SCS events frequently will influence international approval toward China.

The PRC has already begun an effort to gain information dominance in the dispute through propaganda and disinformation, particularly among the SCS contestant states, including Indonesia. They spread their idea of the "nine-dash line" – a nine-segment line off the coast of China in the SCS-proclaimed PRC territorial water [1] – by mass and social media platforms. The PRC's

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[1] *Routledge Handbook of the South China Sea | Zou Keyuan | Taylor & Fran* (Taylor & Fran, n.d.), 123, accessed February 8, 2023.

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domination aims to foster an environment favorable to Chinese interests and ideology[2] through the disputed nations.

From the perspective of the SCS disputes, information advantage has a significant role in shaping the conflicts' narratives and influencing decision-makers, including governments, international organizations, and publics. Information advantage defines as the "the operational advantage gained through the joint force's use of information for decision making and its ability to leverage information to create effects on the information environment (IE)."[3]

Scholars have previously examined several theories on how information can be an effective tool for soft power. Repeating misinformation in societies can cause the "illusory truth effect". Pennycook and David explained the effect happens because our brains use "mental shortcuts called heuristics to process information quickly and efficiently."[4] When we encounter information multiple times, our brains perceive it to be familiar and, therefore, more trustworthy, even if it is incorrect.[5] This effect can be hazardous in disinformation campaigns, as repeated exposure to false information can lead people to accept it as accurate and influence their beliefs and behaviors.

Mass media has a significant role in disseminating false information and advertising targeting the global population to achieve desired states. According to Warren, mass media technologies are central to the account of soft power because they enable political elites to "disseminate political messages broadly and publicly to their citizens; messages that include

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[2] mind dominance. The Washington Times https://www.washingtontimes.com and Bill Gertz, "Chinese Military's Future Warfare Will Aspire to 'Information Dominance,' Pentagon Warns," The Washington Times, accessed March 7, 2023, https://www.washingtontimes.com/news/2022/nov/30/china-militarys-warfare-future-conflicts-will-aspi/.

[3] *JP 3-04 Information in Joint Operations*, 4th ed., 2022, II–2.

[4] Gordon Pennycook and David G. Rand, "Who Falls for Fake News? The Roles of Bullshit Receptivity, Overclaiming, Familiarity, and Analytic Thinking," *Journal of Personality* 88, no. 2 (April 2020): 197, https://doi.org/10.1111/jopy.12476.

[5] Gordon Pennycook and David G. Rand, "Who Falls for Fake News? The Roles of Bullshit Receptivity, Overclaiming, Familiarity, and Analytic Thinking," March 22, 2019, 185–98, https://doi.org/DOI: 10.1111/jopy.12476.

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images, narratives, and other symbols designed to characterize state authority as beneficial and just, inducing voluntary compliance with state dictates."[6] We can expect that on balance mass media advertisements will likely impede the mobilization of insurgent forces contesting state rule.

Firstly, we would like to introduce the data sources before we estimate the models and visualize the results. We will source data from PEW Research Center to measure the dependent variable, while data from ICEWS and VDEM will be used to measure the key independent variables.

Data Source

1.   The PEW Research Center – Global Attitudes data set is a comprehensive and well-known resource providing valuable insights into public opinions and attitudes worldwide. The PEW Research Center, a recognized nonpartisan institution known for rigorous and high-quality research, produced and maintain it.[7]

The data set in this study is mainly based on PEW surveys aimed at collecting public attitudes on various themes such as politics, economy, social issues, and more. The surveys are meticulously designed, considering cultural subtleties and ensuring the questions are relevant and unbiased. PEW frequently works with local partners or experts to customize the survey design for each nation or region, ensuring that it is culturally appropriate and accurate.[8]

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[6] T. Camber Warren, "Not by the Sword Alone: Soft Power, Mass Media, and the Production of State Sovereignty," *International Organization* 68, no. 1 (January 2014): 112, https://doi.org/10.1017/S0020818313000350.

[7] "International Surveys | Pew Research Center," accessed June 20, 2023, https://www.pewresearch.org/our-methods/international-surveys/.

[8] 1615 L. St NW, Suite 800 Washington, and DC 20036 USA202-419-4300 | Main202-857-8562 | Fax202-419-4372 | Media Inquiries, "Country Specific Methodology," *Pew Research Center Methods* (blog), accessed June 10, 2023, https://www.pewresearch.org/methods/interactives/international-methodology/.

Representative samples of individuals from the target demographics are selected for data gathering using rigorous sampling procedures. To guarantee that the data is as representative as possible, PEW employs various sampling strategies, including both probabilistic and non-probabilistic methods. Depending on the country and available infrastructure, the surveys are administered via multiple modes such as face-to-face interviews, telephone surveys, or online surveys.[9]

From the global attitudes surveys, we utilize a specific question:

"Please tell me if you have a very favorable, somewhat favorable, somewhat unfavorable, or very unfavorable opinion of China?"

The responses are aggregated into high and low values, Favorable (1) and Unfavorable (0), creating a dichotomous dependent variable, which equals 1 for responses favorable to China.

2.   The Integrated Conflict Early Warning System (ICEWS) is a large-scale dataset that provides valuable information on geopolitical events, conflicts, and social phenomena.[10] Compiling ICEWS data involves monitoring various public sources, including news articles, reports, academic publications, social media posts, and government statements. Automated techniques, such as natural language processing and machine learning algorithms, are utilized to extract pertinent events from these sources efficiently.

Events in ICEWS represent who did what to whom, when, and where it happened. They are automatically derived from the text of various news stories.[11] Using the ICEWS data we

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[9] NW, Washington, and Inquiries.

[10] "Integrated Crisis Early Warning System," Lockheed Martin, accessed June 10, 2023, https://www.lockheedmartin.com/en-us/capabilities/research-labs/advanced-technology-labs/icews.html.

[11] Elizabeth Boschee et al., "ICEWS Coded Event Data" (Harvard Dataverse, May 1, 2023), https://doi.org/10.7910/DVN/28075.

aggregate counts of events, conflicts or social phenomena which occurred targeted by China between 2010 and 2020.

The "where" part of an event is called its "Location" in ICEWS. A country, province, district, city, or location inside a city or territory of many countries can all be considered a location. If a location is a city or community, it will also have a province. Locations, like all other aspects of event production, are automatically associated with events via automated procedures. We can aggregate the data by provincial event "South China Sea" and count any events that occurred by the PRC, targeting the other nations.

In the ICEWS dataset, each event type is assigned a unique name and code (usually of system-level interest only) and a numerical value ranging from -10 to +10. This number is also known as the Goldstein value, the intensity value, or simply the event intensity. This number was inspired by the Goldstein scale for WEIS event coding. [12] The number represents the amount of hostility or cooperation implied by the event type, with negative numbers representing hostile actions and positive numbers representing cooperative actions; -10 represents the most aggressive hostile events, and +10 represents the most cooperative of cooperative events. The value 0 is viewed as neutral.[13] In this research, we calculate the country-year mean of the Goldstein values to create "Intensity" variable.

Then, we run logit regressions, where the independent variables include a count of the number of SCS events in the respondent's country during the year in which the respondent was surveyed (2010-2022).

[12] "Conflict and Mediation Event Observations (CAMEO): An Event Data Framework for a Post-Cold War World DEBORAH J . GERNER , PHILIP A . SCHRODT AND," in *International Conflict Mediation* (Routledge, 2008).
[13] Boschee et al., "ICEWS Coded Event Data."

3.   **The V-Dem (Varieties of Democracy) dataset** is a comprehensive and widely-used resource that measures and analyses various aspects of democracy throughout the globe. V-Dem is a collaborative project comprising a group of researchers who collect, curate, and provide access to abundant political, social, and economic information.[14]

The Digital Society Project made the Digital Society Survey part of the V-Dem collection. It has questions about how politics affect the internet and social media. Expert-coded polls collect data about coordinated information operations, digital media freedom, online media polarization, social divides, and how states regulate the internet. [15]

There are two indicators from these digital society surveys that were used as independent variables; to see how foreign countries' disinformation or other propaganda operations can influence the respondent's favourability toward China as follows:

a.   "Foreign Government advertisement." In this variable, the respondent is being asked about how often the people living in their country was exposed to disinformation from foreign countries. This disinformation was diffused by ads transmitted through social media with the purpose to influence the correspondent's country's internal politics. [16]

b.   "Foreign governments' dissemination of false information." In this variable, the respondent is being asked about how often the people leaving in their country were exposed to disinformation from foreign countries. Different with foreign government

[14] Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, Kyle L. Marquardt, Juraj Medzihorsky, Daniel Pemstein, Lisa Gastaldi, Sandra Grahn, Josefine Pernes, Oskar Rydén, Johannes von Römer, Eitan Tzelgov, Yi-ting Wang, and Steven Wilson., *"V-Dem Methodology V13" Varieties of Democracy (V-Dem) Project* (University of Gothenburg, V-Dem Institute, 2023), 3–4.
[15] Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, Kyle L. Marquardt, Juraj Medzihorsky, Daniel Pemstein, Lisa Gastaldi, Sandra Grahn, Josefine Pernes, Oskar Rydén, Johannes von Römer, Eitan Tzelgov, Yi-ting Wang, and Steven Wilson., 4.
[16] Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, Kyle L. Marquardt, Juraj Medzihorsky, Daniel Pemstein, Lisa Gastaldi, Sandra Grahn, Josefine Pernes, Oskar Rydén, Johannes von Römer, Eitan Tzelgov, Yi-ting Wang, and Steven Wilson., 321.

advertisement, the foreign official employs social media as a platform to disseminate their desired overview and information directly, with the purpose to influence a correspondent's country's internal politics.[17]

The response for these variables varied by value between 0 and 4. The responses are: 0 "extremely often", on all major political events, there is a spread of false information by foreign governments; 1, "often", on several major political events, there is a spread of false information by foreign governments; 2 "about half the time", on many major political events, there is a spread of false information by foreign governments; 3 "rarely", in only some important political events, there is a spread of false information by foreign governments; and 4 "never", false information is almost never be spread by a foreign governments.[18]

The V-Dem dataset also includes many democracy-related indicators and measures, including electoral processes, civil liberties, political participation, separation of powers, and the rule of law. It has current and historical data, allowing researchers to examine long-term trends and alterations in democratic practices across various countries and regions. We use the Electoral Democracy Index (polyarchy) as a control variable. With higher levels of polyarchy, during the time between elections, there is freedom of speech and an independent media that can show different points of view on political issues.[19].
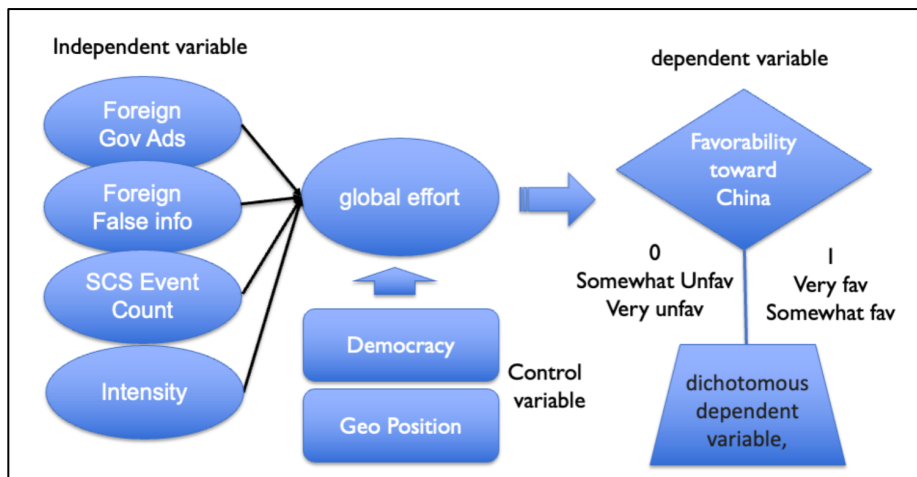
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[17] Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, Kyle L. Marquardt, Juraj Medzihorsky, Daniel Pemstein, Lisa Gastaldi, Sandra Grahn, Josefine Pernes, Oskar Rydén, Johannes von Römer, Eitan Tzelgov, Yi-ting Wang, and Steven Wilson., 321.

[18] Similar responds parameter for both variables. Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, Kyle L. Marquardt, Juraj Medzihorsky, Daniel Pemstein, Lisa Gastaldi, Sandra Grahn, Josefine Pernes, Oskar Rydén, Johannes von Römer, Eitan Tzelgov, Yi-ting Wang, and Steven Wilson., 321.

[19] See Poliarchy Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, Kyle L. Marquardt, Juraj Medzihorsky, Daniel Pemstein, Lisa Gastaldi, Sandra Grahn, Josefine Pernes, Oskar Rydén, Johannes von Römer, Eitan Tzelgov, Yi-ting Wang, and Steven Wilson., 44.

4.   Distance. By including distance from China as an additional control variable, we can account for the possibility that when a country is farther from China, it will have fewer direct interactions with China.

5.   Data Constraints. The data used for this research are limited to 2010 – 2022. Two significant events related to the PRC's ambition toward the SCS occurred during that period. The first was in 2013, with the announcement of the BRI (Belt and Road Initiative), followed by the development and building of artificial islands in the SCS.[20] And secondly, the Permanent Court of Arbitration (PCA) ruling on the South China Sea dispute on July 12, 2016, concluded that China had no legal basis for claiming historic rights to resources within the 'nine-dash line.'[21]

Graphic 1: Independent, Control, and Dependent Variables

Research Question and Hypothesis

This paper will examine whether respondents living in countries during the year of surveys (2010-2022) that are more penetrated by foreign media advertisements and foreign false

[20] "China's Massive Belt and Road Initiative," Council on Foreign Relations, accessed June 10, 2023, https://www.cfr.org/backgrounder/chinas-massive-belt-and-road-initiative.

[21] Vincent P. Cogliati-Bantz, "The South China Sea Arbitration (The Republic of the Philippines v. The People's Republic of China)," *The International Journal of Marine and Coastal Law* 31, no. 4 (November 22, 2016): 2, https://doi.org/10.1163/15718085-12341421.

information, and country-years with higher numbers of SCS events, are more likely to indicate personal approval of China. We will test the following hypotheses:

Hypothesis 1: There is a positive relationship between respondents living in country-years with higher penetration of foreign media advertisement and false information, and their likelihood of indicating personal approval of China.

Hypothesis 2: There is a negative relationship between the number of significant geopolitical events related to the South China Sea (SCS) and respondents' likelihood of indicating personal approval of China.

The unit of analysis of this research is the individual respondent. Using logit regression models, we can examine which combinations of independent variables are related to favourability toward China.

Data Visualization

The kernel density estimates in Figure 2 depict the frequency of favourability (1), illustrated in red; and unfavorability (0), illustrated in blue. The x-axis represents the number of SCS events that occurred. We can see the color mostly overlap shows when event promoted by PRC regarding with SCS the varies density of favorability and unfavorability toward China

The plot also describes that where higher number of events occurred, we see lower the response frequency from both attitudes (favorable and unfavorable). From the depiction, we can conclude that in countries with more SCS events promoted by the PRC, the respondents' approval toward PRC may be more difficult to predict. This is due to the limitation of the survey data collection we used for the research.
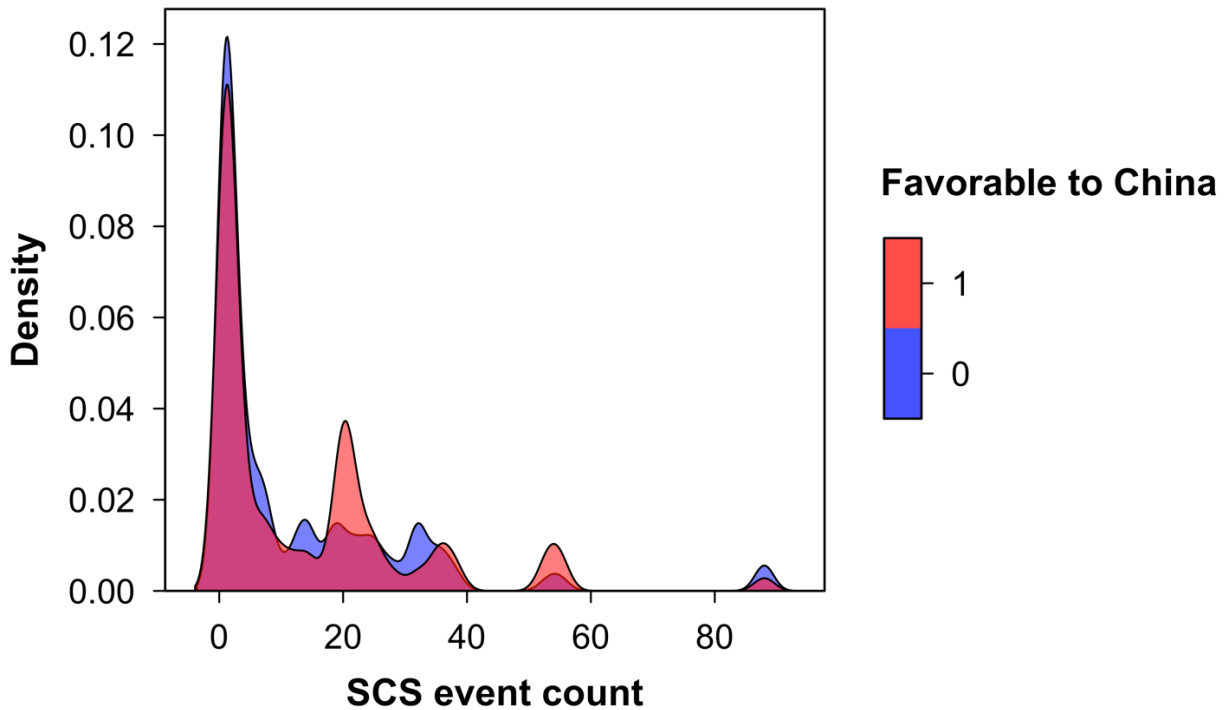
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Figure 2: Density Plot SCS event count and Favourability toward China

Logistic Regression Model

From the polling of PEW research, we simplify the response to become favorable (1) and unfavorable (0). We need a transformation of this dependent variable that depicts the decreasing effects on the dependent variable (favorability) of the independent variables (SCS events promulgated by PRC, foreign media ads and foreign government dissemination of false information) as the independent value decreases or increases. In other words, the floor and ceiling inherent in binary outcomes and probabilities must be modeled. Pampel emphasized that the logistic regression model is the best way to answer the dichotomous problem because of its

simplicity. The logit transformation makes it as simple as the value of dependent variable can be related to the "S-shaped curve in probabilities".[22]

We run 5 (five) logit regression models to get a better assessment. In Model 1, we do a simple logit regression by finding the linear relationship between independent variables (SCS events promulgated by PRC, foreign media ads and foreign government dissemination of false information) and the binary response of the dependent variable (Favorability toward China). In Model 2, we apply a logarithmic transformation to the SCS event count variable and add a control variable for polyarchy. Furthermore, in Model 3 we add a control variable for logged distance to China. In Model 4, we add multiplicative interactions between the main independent variable (logged SCS event count) with each other independent and control variables in the model. When there is a multiplicative interaction between two variables, it means that the effect of one variable depends on the value of the other variable. At different levels of an interacting variable, the effect of one variable on the result may be different. This lets us understand the link between variables in a more nuanced way.

The last model we examined was Model 5. In this model, we examine polynomial effects by squaring each independent and control variable. When a quadratic term is included in a model, it allows curvature in the relationship between the variable and the outcome. Instead of a linear relationship, the relationship potentially becomes a curved or parabolic shape. This means that the effect of the variable on the outcome is not constant but changes depending on the values of the variable.

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[22] Fred C. Pampel, *Logistic Regression: A Primer* (SAGE Publications, Inc., 2021), 19–21, https://doi.org/10.4135/9781071878729.

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We select Model 5 as most reliable because it holds the lowest MAE (Mean Absolute Error), AIC (Akaike Information Criterion), and BIC (Bayesian Information Criterion) compared to the other models. In Model 5, the coefficient for SCS event count is negative and statistically significant ($p<0.001$). It indicates that higher SCS event counts are generally associated with decreased favorability toward China.

	Favorability toward China				
	Logit (1)	Logit (2)	Logit (3)	Logit (4)	Logit (5)
SCS Event count	-0.006*** (0.001)				
log(SCS event count + 1)		-0.058*** (0.012)	-0.210*** (0.013)	-0.368*** (0.038)	0.291*** (0.043)
I(log(SCS event count + 1)^2)					-0.093*** (0.009)
log(China distance + 1)			-0.128*** (0.004)	-0.230*** (0.012)	-0.096* (0.054)
I(log(China distance + 1)^2)					-0.001 (0.003)
Intensity	0.076*** (0.003)	0.073*** (0.004)	0.081*** (0.004)	0.017** (0.008)	-0.023*** (0.007)
I(intensity^2)					0.021*** (0.001)
Polity		0.126*** (0.033)	2.273*** (0.078)	3.370*** (0.161)	1.830*** (0.553)
I(Polity^2)					0.202 (0.423)
Foreign gov dissemination false information	-0.308*** (0.016)	-0.300*** (0.016)	-0.095*** (0.017)	-0.097*** (0.035)	-0.226*** (0.032)
I(foreign gov dissemination false information^2)					-0.153*** (0.023)
Foreign gov ads	-0.245*** (0.015)	-0.258*** (0.015)	-0.417*** (0.016)	-0.416*** (0.029)	-0.235*** (0.019)
log(SCS event count + 1): log(China distance + 1)				0.059*** (0.006)	
log(SCS event count + 1): Intensity				0.088*** (0.009)	
log(event_count + 1): Polity				-0.930*** (0.117)	
log(SCS event count + 1): Foreign gov dissemination false info				-0.021 (0.018)	
log(SCS event count + 1): Foreign gov ads				0.026 (0.019)	
I(Foreign gov ads^2)					0.144*** (0.027)
Constant	-0.244*** (0.013)	-0.275*** (0.036)	0.255*** (0.040)	0.933*** (0.123)	-0.240*** (0.070)
Observations	60,351	60,351	60,351	60,351	60,351
MAE	0.47963	0.47974	0.47187	0.47028	0.46938
RMSE	0.48972	0.48977	0.48557	0.48478	0.48435
AIC	81,174	81,188	80,206	80,021	79,861
BIC	81,220	81,242	80,269	80,130	79,978
Log Likelihood	-40,582	-40,588	-40,096	-39,999	-39,917
Note:					*$p<0.1$; **$p<0.05$; ***$p<0.01$

Table 01: Favorability Toward China

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Figure 3 depicts the effect of SCS events predicted using the 5 models that were estimated during the research. The x-axis shows the number of SCS events. The y-axis shows the predicted probability of Favorability toward China. The color in the figure represents the models that we examined above (Models 1-5). From Figure 3, we can see the effects are substantively significant. According to the best model (Model 5), the increase number SCS events spread by China have large effects in the disapproval attitude toward China. When there is no SCS event count (0), the respondent is likely to favorable with China (0.6). Once the number of SCS event spread increase to 20, the respondent attitude is change and become unfavorable (0.4) and more events counted, the more decrease the favorability toward China.
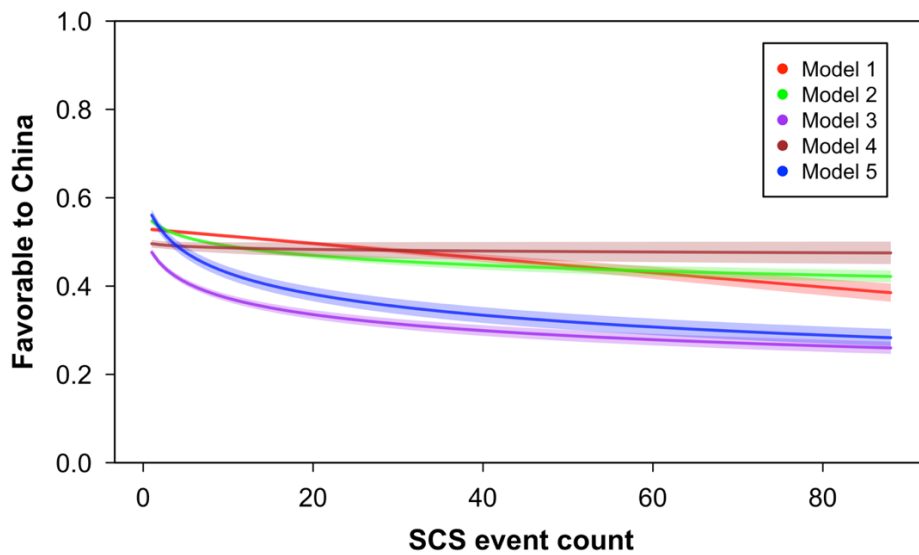

Figure 3: Favorability vs. SCS Events

Examining the Reliability of Variables

To enhance the validity of the relationship between research variables, we will visualize the effect of the control variables, shown in Figure 4; and independent variables, shown in Figure 5 on the predicted probability of favorability toward China.

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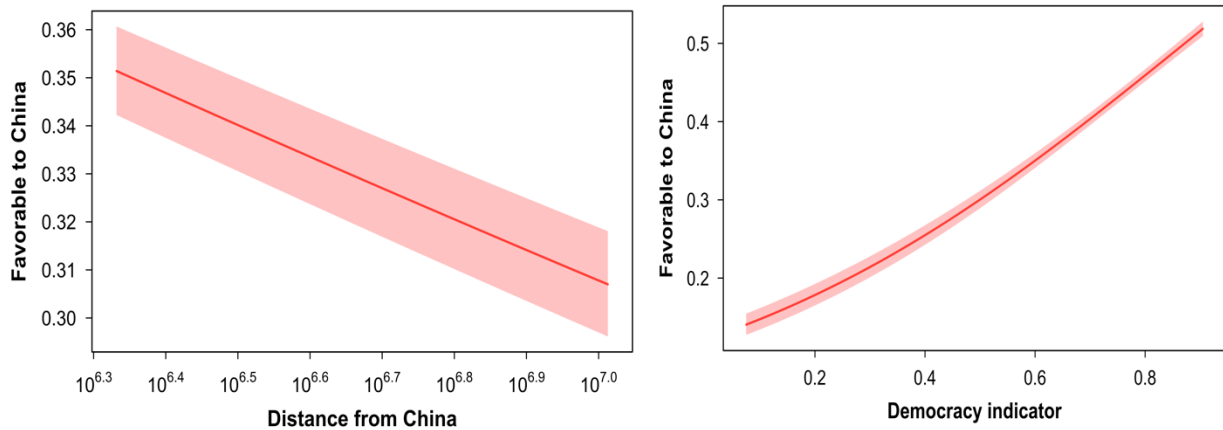
1. Control Variables.

Figure 4: a. Effect of Distance from China (left); and b. Democracy Indicator (right) on the predicted probability of favorability toward China.

Figure 4a. depicts the effect of distance from China (left). The x-axis represents the distance in kilometers tracked from China. The y-axis represents the probability of favorable attitudes about China. The finding was unexpected: the greater the distance from China, the more likely the correspondent is to be hostile toward China. With a p-value < 0.1, this finding is weakly statistically significant.

In the other hand, Figure 4b shows the effect of democracy (right). The x-axis represents the democracy indicator index, and the y-axis is the likelihood that the respondent is favorable to China. The finding is equally surprising: the stronger the democracy measure, the higher the favorability toward China. Because the p value is less than 0.001, the result is also highly statistically significant.

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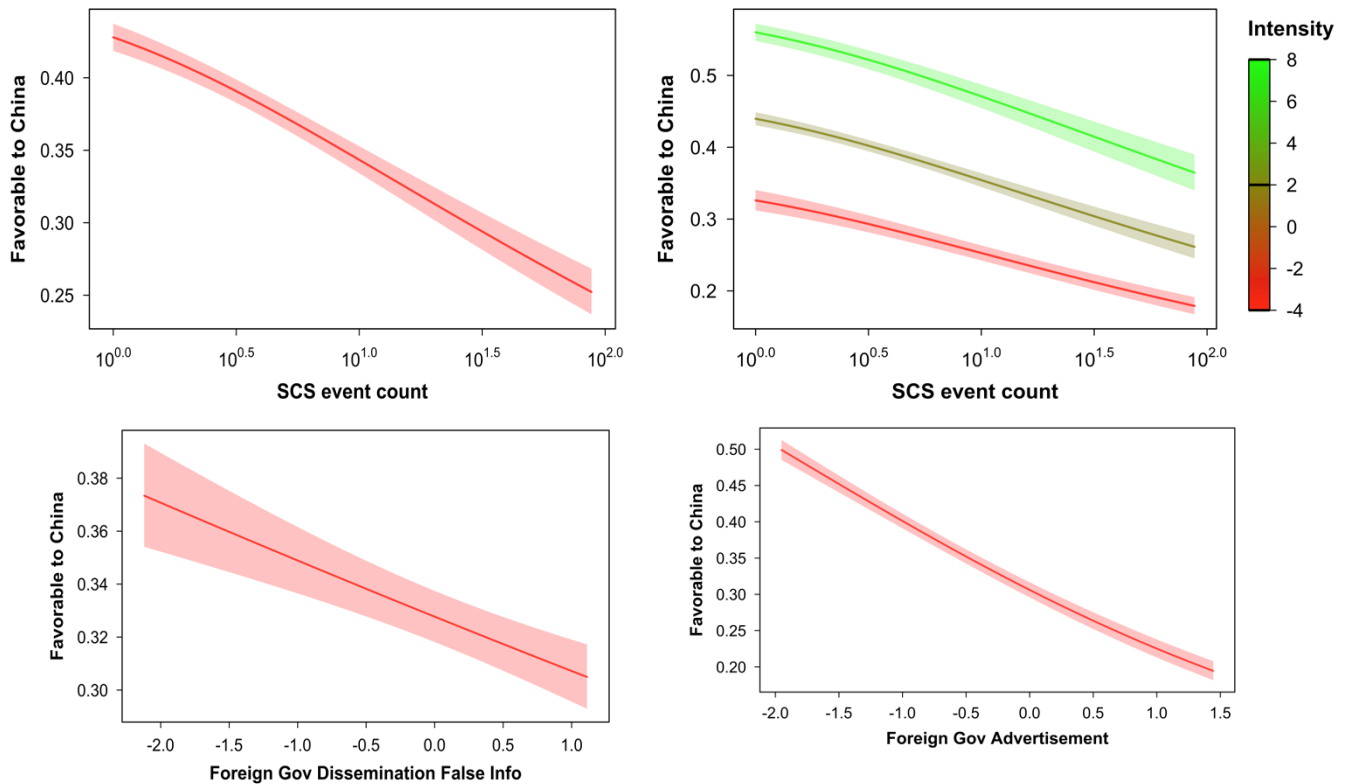Grey Zone
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2. The Independent Variables.

Figure 5: Effect on a. SCS Event count (top left); b. Intensity (top right); c. foreign government dissemination of false information (bottom left)

Figure 5a (top left) demonstrates how the logged transformation of SCS event count affects favorability toward China. The x-axis represents the rise in SCS event counts. The y-axis represents the probability of favorable attitudes about China. We can deduce from Figure 5a that an increase in SCS occurrences will reduce favorability toward China. With a p value < 0.001, this finding is also statistically significant. This conclusion makes sense if the SCS incident reported by local media creates a negative opinion based on national interests. For example, when the Western media claimed that a Chinese fighter stopped a US air force military plane, the focus was on how the PRC air force maneuvered dangerously nearby, rather than how the US Air Force (probably) flew around the PRC ADIZ (Air

defense/identification zone).[23] This announcement is likely to reduce favorability toward China if the PRC does not respond to the media with another statement explaining their interests.

Figure 5b (top right) shows how the intensity of the SCS events, influences favorability toward China. The x-axis depicts the number of SCS events. The y-axis shows the probability of favorable attitudes toward China. The three lines depicted by red and green represent the intensity of the SCS events propagated by the PRC. The redder the line, the lower the intensity rating, indicating that the incident was more aggressive. The brown line symbolizes a neutral event, and the greener the line, the more cooperative were the SCS events that occurred. As seen in the graph, the greater the number of SCS events, the more negative respondents' attitudes about China. This finding is statistically significant with p value < 0.001.

Figure 5c (bottom left) shows how false information spread by a foreign government will affect how people feel about China. The x-axis shows the Bayes index score, which is a way to measure how often foreign governments and their employees use social media to spread false information or misleading points of view to try to change American politics. The y-Axis shows the predicted probability of favorability toward China. From the graph, we can see that the higher index of foreign government dissemination of false information, the less favorable people are toward China. With a p value < 0.001, this result is statistically significant.

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[23] Reuters, "Chinese Jet Carried out 'aggressive' Maneuver near US Military Plane, Pentagon Says," *Reuters*, May 31, 2023, sec. Asia Pacific, https://www.reuters.com/world/asia-pacific/chinese-jet-carried-out-aggressive-maneuver-near-us-military-plane-pentagon-2023-05-30/.

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Figure 5d (bottom right) shows how foreign government advertisements correlate with favorable attitudes toward China. The x-axis displays the Bayes Index which measures how frequently foreign governments, and their personnel utilize paid social media ads to propagate inaccurate or misleading information or views. The y-axis represents favorable attitudes toward China. This finding is statistically significant with a p value < 0.001.

Prediction

From this analysis we can predict the favorability of the average respondent in different countries over time, comparing the predicted rate of US, Indonesia, and global respondents' approval toward China. The data was calculated by aggregating the respondents based on their country of origin (Indonesia, US, and global), also aggregating by survey year (2010-2022). Then we calculate the mean of each variable for each country-year and predict probability of favorability using the estimates from Model 5.

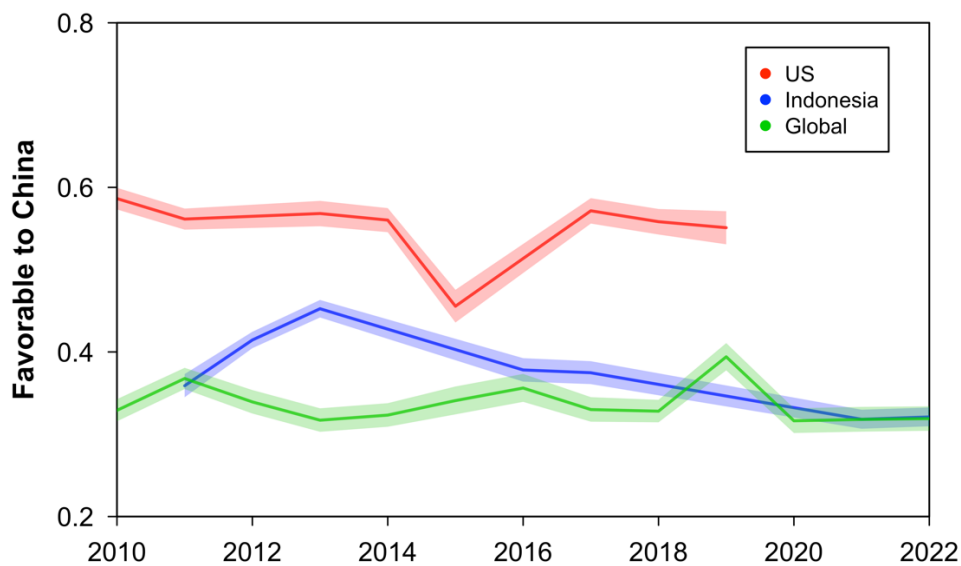### US, Indonesia & Global Respondent approval toward China

Figure 5

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Figure 5 depicts the prediction. The x-axis denotes the time window when the respondent was surveyed (2010-2022). The y-axis denotes the probability of a favorable attitude toward China. In 2013, US respondent favorability toward China decreased. However, the result is also surprising to observe, that the projection increased again between 2016-2017 and then decreased again after 2017. We expect this fluctuate results due the effects of one or more of the variables in the model.

As one of the South China Sea claimant states, we witness the Indonesian respondent is consistently predicted to be unfavorable (between 0,4 and 0,3) with a decreasing trend over time. It makes sense if we correlate the Indonesia interest to claim their EEZ (Economic Exclusive Zone) toward SCS and their willingness to explore its natural reserves in the South China Sea will confront the PRC ambition toward SCS.[24] We can expect the high number of SCS events to influence the favorability of Indonesia's respondents toward China.

Another finding is that the prediction of the global respondent is likely unfavorable toward China. The graphic of the favorability generally fluctuates around 0.3 and 0.4. From this finding we can predict that the global respondent's attitude during each of the years surveyed was unfavorable toward China. This is likely associated with the importance of the SCS as one of the most valuable sea routes for global trade.[25]

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[24] Reuters, "Indonesia Approves $3 Bln Development Plan for South China Sea Gas Block," *Reuters*, January 2, 2023, sec. Commodities, https://www.reuters.com/markets/commodities/indonesia-approves-3-bln-development-plan-south-china-sea-gas-block-2023-01-02/.
[25] U.S. Energy Information Administration, "South China Sea," February 7, 2013.

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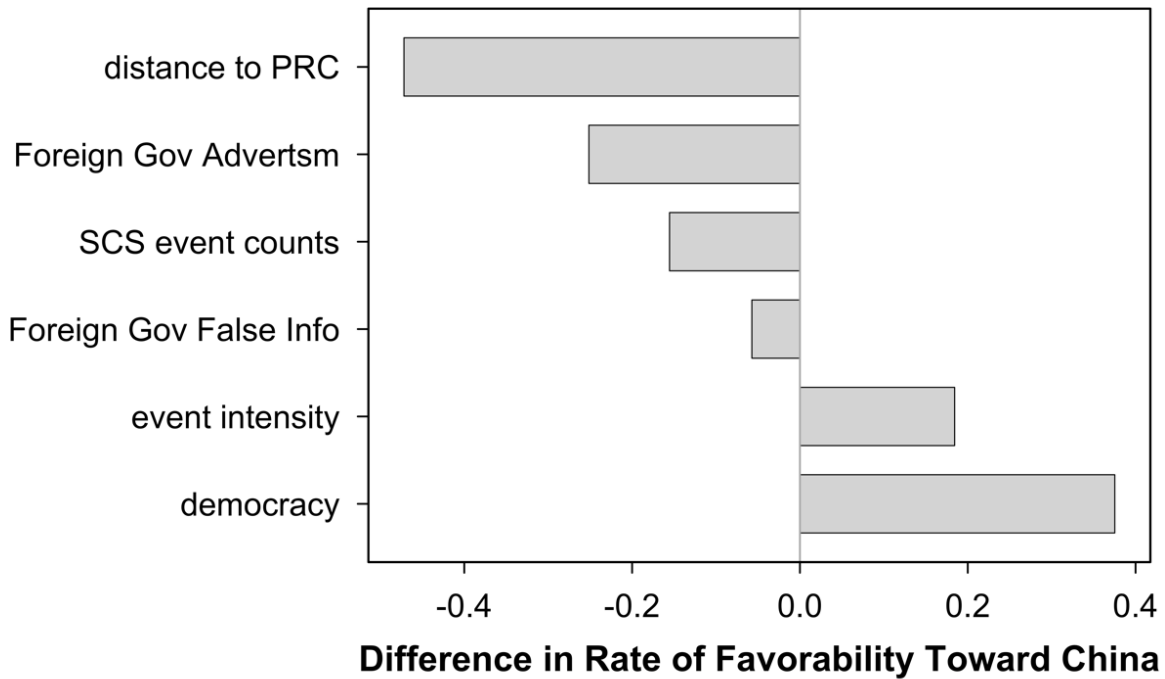Grey Zone
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Conclusion

Figure 6: Key Result

Figure 6 depicts the key result, where the X-axis describes the differences in rates of favorability toward China using the best logistic regression model (Model 5).and the Y-axis depicts the variables we examine in the research.

From the findings, those respondents living in a country surveyed between 2010 and 2022 who are more exposed to foreign media advertisements are more apt to have a negative view of China. The SCS event count toward China is also likely to generate personal disapproval of China, followed by the dissemination of deceptive information by foreign governments, the intensity of events, and the degree of democracy.

Surprisingly, the distance of a country from China will correlate with unfavorable attitudes toward China. It is it may instead be that the countries furthest from China (Europe and North

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America) tend to be Western democracies with hostility toward China's geopolitical interests. This may also be evidence that China invests more in building positive relationships with nearby neighbors.

From the figure 6, we can see evidence that is contrary to the first hypotheses. Respondents living in 2010–2022 in countries more penetrated by foreign media advertisements were less favorable toward China. The evidence also shows that increased numbers of SCS events are likely to lead to personal disapproval of China. However, the intensity (more cooperative, or more aggressive) of the events will also influence respondent favorability. From this finding, we can get the takeaway that the more events generated by the PRC regarding the SCS issue, the more the world has disapproving attitudes and perceptions of China. For the disputant countries in the SCS, as we are likely to see an increase in the number of events occurring in SCS, we can predict the outcome that the respondents in those countries will become more disapproving of China.

From these findings, we can quantify the relationships that influence the sentiments of worldwide respondents. Regarding international relations, it is surprising that foreign government advertisements negatively influence respondent approval. It is likely that the amount of SCS events announced by the PRC is being responded to by western media. States allegedly develop various ties because they believe such links fulfill crucial functions. [26] These functions may include resource pooling, contributing to personal or community welfare, and resolving territorial, political, or value or idea sharing conflicts related to the SCS. The flooding of media advertisements that influenced the social paradigm is likely associated with the increase in disapproval toward China, as represented by the prediction finding.

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[26] Zeev Maoz, *Networks of Nations: The Evolution, Structure, and Impact of International Networks, 1816–2001*, Structural Analysis in the Social Sciences (Cambridge: Cambridge University Press, 2010), 250, https://doi.org/10.1017/CBO9780511762659.

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Future Study

The research shows that regression models are a powerful tool to analyze the effectiveness of soft power. However, from what we have studied thus far, measuring the kinds of media advertisements propagated by foreign governments is challenging. The polling examined by V-DEM does not offer a specific explanation about the content of the advertisements. Future research can have a better outcome if we consider a more accurate measurement of foreign media advertisements that influence favorability toward China. For example, to know what type of advertisement currently influences the global perspective Thus, we can better answer the outside media indicator that affects respondents' favorability.

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