

# TECHNICAL ANNEX

## A-1. Research Design and Approach

This report is a continuation of the work of Custer et. al. (2018) and borrows the same research design, which uses a mix of both quantitative and qualitative data analysis and tools to inform insights into the use and effects of Chinese public diplomacy in the East Asia and Pacific (EAP) region. In this report, we expand the coverage of China's public diplomacy toolkits by adding a new informational diplomacy toolkit and increasing the coverage of the exchange diplomacy toolkit by adding student exchanges as a tool.

Using the quantitative data we gathered on informational diplomacy and student exchanges tools, we first provide a series of descriptive analyses (Chapters 2 and 3) to study their volume and focus across EAP countries over time. We then use our quantitative proxy measures in two sets of empirical models to test: (i) the effects of informational diplomacy in offering reputational gains in terms of public approval and disapproval of Chinese leadership; and (ii) the relative strength of informational diplomacy compared to other public diplomacy toolkits in generating reputational, security and economic dividends for China in the EAP region.

## A-2. Public Diplomacy Definition and Taxonomy<sup>1</sup>

The practice of 'public diplomacy' has evolved significantly over the last few decades in an increasingly globalized world where power is diffuse and technological advances have reduced barriers to entry for governments, organizations, and people to communicate with one another.

Public diplomacy experts themselves disagree on what counts as public diplomacy activities for any given country. Numerous scholars have put forth competing theories and definitions in an attempt to flesh out the broad contours of what is and is not included within public diplomacy. These differences have significant implications for which activities constitute Chinese public diplomacy investments.

### A-2.1 Definition of Informational Diplomacy

The 'Cold War model' (Gilboa, 2008) of public diplomacy envisions state-based actors attempt to increase their soft power influence through hierarchical, one-way, government-to-people interactions. Under this model, state actors from the 'sending country' usually define a specific message they want to push to a foreign audience in the 'receiving country', and then control the delivery of that message (Zaharna, 2008).

In contrast, the advent of 'new public diplomacy' (Melissen, 2005) expands the scope of diplomacy to include freeform, network-based interactions between non-state actors, governments, and people. In this view, numerous actors from the sending country interact directly with foreign publics, blurring the lines of who carries out public diplomacy activities, in what domains, and through which activities.

Cull (2008) proposes a definition that is widely used but favors a more narrow view of public diplomacy as a government's attempt to engage directly with foreign citizens to: "manage the international environment," project a positive image internationally, and convince citizens of other countries to adopt its values, culture, and worldview. Under this rubric, public diplomacy consists of the following activities: (a) listening; (b) advocacy; (c) cultural diplomacy; (d) exchange; and (e) international broadcasting. There are two drawbacks of Cull's definition for our purpose of quantifying Chinese public diplomacy efforts -- the state must be the primary actor and the primary intent must be to enhance diplomatic influence.

Broader definitions of public diplomacy overcome these constraints by incorporating activities undertaken by both state or non-state actors, as well as activities that may enhance diplomatic influence, even if this was not the primary

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<sup>1</sup> This section has been borrowed from Custer et. al. (2018).

intention. For example, Zaharna (2008) includes investments such as development aid projects and twinning arrangements (sister cities) to facilitate greater citizen-to-citizen interaction. D'Hooghe (2014) acknowledges an economic dimension of public diplomacy, whereby state or non-state actors undertake activities to promote trade and tourism, which ultimately allow the sending country to influence foreign publics.

For the purposes of quantifying China's public diplomacy efforts, this study uses the following definition:

Public Diplomacy is a collection of instruments used by state and non-state actors from a 'sending' country with at least some intention of influencing the perceptions, preferences, and actions of foreign citizens in a 'receiving' country in favor of the 'sending' country's values, culture, and worldview.

While this definition lends itself to capturing both state-centric and network-based public diplomacy activities, one crucial constraint we impose is that the activity must be directed specifically at a single receiving country from the sending country. Under this definition, we would exclude public diplomacy activities that are not targeted at one country in particular, such as China's participation as the host of the 2008 Olympics. We have chosen to exclude such non-targeted activities in this report so that we are able to collect data that can be disaggregated at the recipient country level and can be used to assess China's influence in the EAP region.

## A-2.2 Taxonomy of Informational Diplomacy Activities

Our provisional definition lays out helpful boundary markers for which activities should be included in our analysis of China's public diplomacy efforts. In this section, we operationalize this definition as a guide for our data collection efforts through enumerating our assumptions regarding the relevant actors, audiences, and activity sets to include in this exercise. These assumptions and activity sets will be further refined following consultations with a broad range of public diplomacy experts and practitioners.

### A-2.2.1 Taxonomy of PD Activity Sets and Illustrative Activity Types

To be included in our taxonomy, public diplomacy (PD) activities must be targeting the citizens in a 'receiving' country (i.e., the country that state or non-state actors seek to influence). The target audiences in a 'receiving country' could include: public officials, the general public, and relevant socio-economic or political sub-groups.

Our taxonomy will include public diplomacy activities undertaken by state actors, sub-state actors, and non-state actors. However, to bound our data collection efforts and analysis, we specify that in order to qualify as a PD activity, there must be intention of influencing citizens or elites in a receiving country.

Multiple actors may be involved in any given PD activity serving in coordination, funding, or implementation roles. We refer to the country undertaking public diplomacy activities as the 'sending country' in that they are attempting to 'export' or 'extend' their influence outside of their own state borders.

Based upon our literature review and prior experience tracking Chinese official finance, we have organized our taxonomy into two activity sets according to whether the main objective of the activity is to "push" Chinese values, culture, or messages out to foreign publics, or whether the activity also "pulls" information or relationships from the receiving country to create a two-way dynamic channel of communication. Under each activity set we have included a working definition and several illustrative activities.

#### Activity Set #1: Push Strategies

Definition: Broad-based, one-way activities where the sending country disseminates information or cultural content via state or non-state actors to increase awareness of, or support for, their values, beliefs, norms, and positions among citizens and elites in the receiving country. Push activities are often undertaken with the singular intent of furthering public diplomacy outcomes. They are most often sponsored, funded, and/or implemented by official state actors.

#### Illustrative activities:

- Cultural diplomacy activities, such as Chinese culture year activities, cultural exhibition tours, Chinese cultural centers, Confucius Institutes, Confucius classrooms, Sports activities through the External Sports Communication Center

- Informational diplomacy activities, such as efforts to help Chinese media establish or expand their presence in the 'receiving' country (e.g., Chinese state-sponsored media bureaus, television broadcasting by CCTV and CNC World, radio broadcasting by CRI, Chinese-language print media).

Activity Set #2: Push-and-pull Strategies

Definition: Targeted, two-way activities where the sending country uses exchange programs, economic diplomacy, official financing, & traditional govt.-to-govt. diplomacy via state or non-state actors to promote the cultivation of relational ties with counterparts. Push-and-pull activities may have simultaneous objectives of strengthening political and socio-economic ties between countries, while also pursuing economic interests, for example. These push-and-pull activities can be sponsored, funded, and/or implemented by both state and non-state actors.

Illustrative activities:

- Elite-to-elite diplomacy activities, such as establishing embassies in-country and high-level visits by Chinese government officials.
- Exchange diplomacy activities, such as political party exchange programs, political party development activities, providing training to various actors (civilian government officials, military officials, etc.), sister city programs, and student or professional scholarship and exchange programs.
- Financial diplomacy activities, such as providing direct support to national budgets, debt relief/restructuring, humanitarian relief programs, and investments in infrastructure within the country.

## A-3. Quantifying Chinese PD: Measures, Sources and Uses<sup>2</sup>

### A-3.1 Quantitative Measures for Chinese Public Diplomacy

Below are the various quantitative measures used in this report and their corresponding sources.

**Table I: Description of the Quantitative Measures of Chinese Public Diplomacy**

Public Diplomacy Category	Measures	Source	Time Period	Methods Applied
	Number of active Facebook pages owned by Chinese state-owned entities in 2019	Crowdtangle; the Economist	2019	We use <i>crowdtangle</i> to extract the number of Chinese language Facebook pages that are active in each EAP country, including those owned by Chinese state-owned entities.
	Number of fans of active Facebook pages owned by Chinese state-owned entities in 2019	Crowdtangle; the Economist; Facebook	2015-2019	We look at the total number of followers of Chinese state-owned media outlet Facebook pages worldwide, by year.
Informational Diplomacy <i>(new)</i>	Most recent 3500 Tweets by major State-owned media outlets (extracted on June 30th 2019)	Twitter API	2018-2019	We extracted the most recent 3500 tweets from the Twitter feeds of six Chinese state-owned media outlets: CCTV, CGTN, China Daily, Global Times, PD China and Xinhua News). These tweets were classified using a keyword association method to determine the share of Science/Technology, Xi Jinping, BRI, Chinese Military and Art and Culture tweets.
	Number of Chinese state-owned television channels broadcasting in EAP countries	Websites of major cable television providers in EAP countries.	2019	We checked whether the following TV channels were offered in each EAP country: CCTV-4, CGTN and CNC World <del>Xinhua News</del> .
	Number of languages of broadcast of China Radio International in major cities in EAP countries	World Radio Maps	2019	We counted the number of CRI radio channels that were being broadcast in major cities of each EAP country on FM frequencies. We treated language of broadcast as a determinant of unique channels since we observed instances where the same channel was being broadcast on different frequencies.

<sup>2</sup> This section has been borrowed from Custer et. al. (2018) and updated to include additions made in this report.

Number of appearances of interviews given by the highest echelon of Chinese leaders in local media by country-year	Chinese Ministry of Foreign Affairs Yearbooks	2002-2017	This is an original AidData compiled dataset made by translating information in Chinese Ministry of Foreign Affairs Yearbooks.
Number of publications of op-eds written by the highest echelon of Chinese leaders (i.e. President and the Premier of China) in local media by country-year			
Cumulative number of content sharing agreements/partnerships signed between Chinese state-run media and domestic media outlets up until that year*	Financial Times; AidData	1999-2017	This data was originally created by Emily Feng (2018) for her article in the Financial Times. We validated this data and fixed some errors in the mapping of partnerships to countries.
Number of journalistic exchange visits to China from EAP countries by country-year, facilitated by the Chinese Ministry of Foreign Affairs	Chinese Ministry of Foreign Affairs Yearbooks; supplemented with AidData using Chinese Embassy websites	2002-2017	This is an original AidData compiled dataset made by translating information in Chinese Ministry of Foreign Affairs Yearbooks and supplementing them with announcements made in the news sections of Chinese embassy websites of EAP countries.
Average tone of reporting about China by country-year	GDELT Project	2005-2009; 2014-2019	This data was extracted using Google BigQuery from the GDELT project files. The query extracts all events reported on China in EAP countries by year and averages the tone score by country-year.
Volume of reporting about China in the context of 'human rights' by country-year	FACTIVA; Dow Jones	2000-2018	We queried FACTIVA for media articles published on human rights in EAP countries. We also ran queries that filtered results to only those that reported on human rights and China together by specifying a 'within 10 words of each other' condition. We chose 'human rights' as our criteria to measure volume of reporting on China over time because the interpretation, context and relevance of this term remains constant through time. Other terms, such as 'South China Sea' and

'Tiananmen Square' or 'Tibet', that are also relevant for measuring the volume of reporting on China, were unfit for purpose since reporting volumes would likely see spikes in certain anniversary years.

	Cumulative number of Confucius Institutes operating each country-year*	Xiang and Huang (2015); Updated by AidData	2004-2017	2004-2014 global dataset provided by Xiang and Huang (2015). We extended the dataset for 2015-2017 in EAP using the Hanban website and Confucius Institutes' annual reports.
Cultural Diplomacy	Cumulative number of Chinese Cultural Centers operating each country-year	AidData Global Chinese Official Finance Dataset (v1.0); Targeted web searches	2000-2017	Relevant projects from the AidData Global Chinese Official Finance Dataset (v1.0) were used establish a baseline dataset. We used additional targeted web searches to identify any additional cultural centers in the EAP region that were established during the time period for the study.
	Number of cultural events carried out each country-year (includes culture years, culture weeks, culture months, China tourism years, friendship years, friendship conference and culture festivals.)	Chinese Ministry of Foreign Affairs Yearbooks	2000-2015	This is an original AidData compiled dataset made by translating information in Chinese Ministry of Foreign Affairs Yearbooks.
Exchange Diplomacy	Cumulative number of Sister/Friendship Cities for each country-year*	China International Friendship City Association (CIFCA); Targeted web searches	2000-2017	We used the data provided by CIFCA, n.d. and supplemented it using targeted web searches for Japan and Malaysia.
	Number of international students studying in China by country-year <i>(new)</i>	China Ministry of Foreign Affairs Yearbooks	2000-2016	This is an original AidData compiled dataset made by translating information in Chinese Ministry of Foreign Affairs Yearbooks
	Number of Chinese students studying in EAP by country-year <i>(new)</i>	UNESCO Tertiary Students Flow Database	2000-2017	We queried UNESCO's UIS database for global tertiary student flows for Chinese origin.

	Number of official government scholarships announced for award to EAP country students by country-year <i>(new)</i>	Chinese Embassy Websites; AidData Global Chinese Official Finance Dataset (v2.0-forthcoming)	2000-2018	This is an original AidData compiled dataset created by scraping embassy websites' news sections for announcements of government scholarships. This process also helped update AidData's Global Chinese Official Finance Dataset, an updated version of which will be released soon.
	Number of educational partnerships between China and EAP countries (includes institutional and inter-governmental partnerships) by country-year <i>(new)</i>	China Scholarship Council's Annual Reports	2004; 2006; 2007; 2009; 2010	This data was created by scraping the five annual reports that are publicly available from the China Scholarship Council.
Financial Diplomacy	Aggregate amount of Chinese government official finance in the form of direct support to national budgets, humanitarian assistance, infrastructural investments or debt relief by country-year*	AidData Global Chinese Official Finance Dataset (v1.0)	2000-2016	We use relevant projects from the AidData Global Chinese Official Finance Dataset (v1.0) between 2000-2016.
Elite-to-elite Diplomacy	Sum of high-level and provincial-level visits by government officials (civilian and military) between China and EAP countries each year*	Chinese Ministry of Foreign Affairs Yearbooks	2000-2015	This is an original AidData compiled dataset made by translating information in Chinese Ministry of Foreign Affairs Yearbooks.

\* These are proxy variables that we use for statistical analyses.

### A-3.2 Informational Diplomacy and Student Exchanges Data Limitations and Use of Proxy Variables

#### Informational Diplomacy

We identified numerous theoretical measures of activities that could constitute China's informational diplomacy toolkit. We had success in measuring five cross-sectional, time-series variables: number of interview appearances by China's president, vice president and premier, vice premier; number of op-eds published by China's president and premier; number of op-eds by Chinese ambassadors; number of events of journalist visits from EAP countries to China; and the cumulative number of media content sharing partnerships between China and EAP country outlets. Though we would prefer to collect data on other variables by country-year, some were only available for the most recent year. For instance, we were only able to capture the number of state-owned television and radio channels operating in EAP countries at present (in 2019). Similarly, Facebook pages, presence of a Xinhua bureau and several other variables are also only cross-sectional for 2019. Uncovering when a new Facebook page was launched, or a new radio/TV channel began broadcasting proved difficult.

We were also unable to quantify any of our desired measures for our third set of tools in the Chinese informational diplomacy toolkit – state shaping the broader media environment. These are tools that China deploys as a stick, rather than a carrot (as public diplomacy tools typically are), to control and regulate access in the regional media landscape. In future iterations of this work, it would be useful to investigate and quantify punitive actions such as ‘denial of visas’ and restrictive journalist access, which may be tools that China deploys in regions other than the EAP.

We use the cumulative number of media partnerships as our proxy variable for informational diplomacy because of our finding that this tool was the most consistent in providing reputational dividends to China among the toolkit (see: Section 4.1.1 of the main report for further information).

#### Student Exchanges

Similar to informational diplomacy, we were unable to quantify as many dimensions of Chinese student exchange tools as we would have liked. One example is the total amount of resources that China spends on student exchanges by country-year. The number of announced scholarships are a reasonable measure of the volume of this tool deployed, but it does not include any information on the quality of scholarships offered. We were also unable to quantify much of the state-sponsored outbound exchanges and conduct a general qualitative comparison of the different types of scholarships that China offers (see: Table II). In other words, how many resources does China spend on sending its students and scholars to study in EAP countries. This measure would be a better proxy for the weight Beijing puts on its push efforts, rather than its pull efforts through offering scholarships.

In our interviews of citizens and elites in EAP countries during the first phase of this project, we learned about how China is now targeting resources at fostering exchanges between its institutions and their counterparts in EAP countries at the primary and secondary levels. State-sponsored school visits to China and exchanges of school administrators and teachers appeared to be commonplace. We could not systematically collect data on these activities.

There are two key limitations to studying the drivers of use of student exchanges and the subsequent returns they generate for China in our main report:

1. Our data covers the period of 2000-2017 only. Student exchanges are, by design, longer-term investments into increasing a nation’s soft power.
2. The data that we do have for 2000-2017 has less than 100 observations across all countries and years. This limits the confidence with which we can interpret the results of any empirical analysis.

As more data becomes available over time, empirical tests would provide better insights into its soft power dividends.



Table II: Qualitative comparison of Chinese scholarships with those offered by strategic competitors

Country	USA	Japan	Australia	UK	
Scholarship	Fulbright(USA) EX. Indonesia	Monbukagakusho Scholarship(Japan)	Australia Awards(Australia)	Chevening Scholarship(UK)	
Living Allowance(annual)	\$ 40,000.00	\$ 16,416.00	\$ 21,000.00	\$ 16,164.00	
Tuition(annual)	Tuition is included in living allowance	\$ 5,483.87	\$ 25,500.00	23,000	
Travel Airfare	Round-trip airfare	Round-trip airfare	Round-trip airfare	This varies depending on award	
Resettlement Allowance	Yes, not specified	No	\$3,500	This varies depending on award	
Internship Stipend	No	No	Yes but not specified	No	
Misc	Health insurance is included	Health insurance is included	Health insurance is included	Health insurance is included	
Total	\$ 40,000.00	\$ 21,899.87	\$ 50,000.00	\$ 39,164.00	
PPP Adjusted to US Prices	\$ 40,000.00	\$ 24,288.04	\$ 49,310.34	\$ 44,199.37	
Country	China	China	China	China	China
Scholarship	CSC/Chinese Government Scholarship(China)	MOFCOM Scholarship(China)	University-Based Scholarship EX. Peking University (Overseas Students) Scholarship	Chinese Academy of Science (CAS) and The World Academy of Sciences (TWAS) President Scholarship	Confucius Scholarship
Living Allowance(annual)	\$ 7,856.94	\$ 6,104.00	\$ 5,232.00	\$13,848	\$ 7,856.88
Tuition(annual)	\$ 6,547.45	\$ 6,547.45	\$ 5,819.87	\$ 5,819.87	\$ 5,819.87
Travel Airfare	No	Round-trip airfare	No	One way airfare	
Resettlement Allowance	No	\$436	No	\$30	
Internship Stipend	No	No	No	No	
Misc	Health insurance is	Health insurance is	Health insurance is	Health insurance is	
Total	\$ 14,404.39	\$ 13,087.45	\$ 11,051.87	\$ 19,697.87	\$ 13,676.75
PPP Adjusted to US Prices	\$ 28,234.25	\$ 25,652.89	\$ 21,662.92	\$ 38,610.07	\$ 26,807.99

Source: Authors' compilation.

## A-4. Gallup World Poll (GWP) Data and Methods

### A-4.1 Gallup World Poll Overview

To estimate the relationship between country-level measures of public diplomacy inputs and public perceptions at the respondent level, Custer et. al. (2018) employed data from the Asian Barometer Survey (ABS). More specifically, they used Waves 3 and 4 of the survey, which were administered between March 2010-March 2012 and June 2014-November 2015 respectively. In this report, we utilize the Gallup World Poll. Gallup provides annual public opinion data from 2006 to 2018 on a variety of topics, including opinion on world leadership. The poll is designed to be representative of 95% of the adult, civilian, non-institutionalized population.

### A-4.2 GWP: Question Analyzed and Method of Variable Construction

For this analysis, we use responses for the question (WP#151): “Do you approve of Chinese leadership?” Respondents can answer either: *Approve*; *Disapprove*; *Don’t know*; or *Refuse to answer*. From these responses, we construct two dependent variables: (i) a binary variable (0 or 1) for respondents that answered ‘Approve’; and (ii) a binary variable (0 or 1) for respondents that answered ‘Disapprove’. We code all ‘Don’t know’ answers as 0 and drop all observations where respondents chose ‘Refuse to answer.’

## A-5. Effects of Informational Diplomacy Tools on Public Perceptions

### A-5.1 Model Specifications

To model informational diplomacy on EAP public perceptions, we construct models that feature the five Chinese informational diplomacy variables described above as our independent variables: *Heads of State interview appearances*, *Heads of State op-ed appearances*, *Ambassador op-ed appearances*, *EAP inbound to China journalist visits*, and *media partnerships between EAP and Chinese outlets* (by country). These variables are non-negative, discrete counts of each recorded instance of the variable’s concept in a country, with the exception of the cumulative *media partnerships* variable.

To include other measures of Chinese public diplomacy used in previous work (Custer et al. 2018), we include the proxy variables for each of the different types of public diplomacy from China. These include 1) financial diplomacy, 2) Sister cities (cumulative), 3) Confucius institutes, and 4) Government visits. For each public diplomacy indicator, we subtract the mean from each observation and divide the result by the variable’s standard deviation. We then add these new, standardized variables to create our index.<sup>3</sup>

In addition, we include a battery of both respondent- and country-level controls. For individual-level variables, we include binary variables indicating when the respondent is female (*female*), lives in an urban setting (*urban*), and has employment to some capacity (*employed*).<sup>4</sup> We also include continuous variables for the respondent’s age (*age*) and household income (*income*). Due to *income*’s right-skewed distribution, we take the variable’s natural log for the

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<sup>3</sup> We display the formal equation to create this composite variable here:

$$\sum_{i=1}^4 \left( \frac{x_i - \bar{x}}{s_i} \right)$$

<sup>4</sup> Specifically, we take Gallup World Poll’s Employment Status (EMP\_2010) variable and create a binary indicator were 1 indicates the following responses: Employed full time for an employer, Employed full time for self, Employed part time do not want full time, and Employed part time want full time. We assign a 0 for all remaining answers: Unemployed and Out of workforce.

models. Finally, we include an ordinal variable indicating the respondent's education level (*education*).<sup>5</sup> We pull all of these variables from the Gallup World Poll (Gallup, 2019).

We also include several country-level variables. From the World Bank (World Bank, 2019), we include a measure of wealth (*GDP p/c*) and perceptions of the country's observance of society's rules (*rule of law*). Due to *GDP p/c*'s right-skewed distribution, we take the variable's natural log for the models. Next, we include a measure for electoral democracy taken from the Varieties of Democracy (V-Dem) dataset (Coppedge et al., 2019). We prefer this to the often-used *polity* dataset because V-Dem's measures more closely reflect citizens' participation in electing leaders, while *polity* focuses more on institutional make-up of a country's government such as executive constraint<sup>6</sup>. This is a key distinction given that we seek to model public perceptions data. We also include Freedom House's measure of freedom of the media (Freedom House, 2019) to control for the information environment in which respondents interact with Chinese informational diplomacy (*media freedom*). These variables are all continuous with higher values indicating greater wealth, rule of law, etc. Finally, we include a count of new Chinese firm entries in the EAP country for a given year (*new firm entries*)<sup>7</sup>.

Due to the potential for multicollinearity among the controls, we opt to reduce them to two variables using principal components analysis (PCA). PCA is a data reduction technique that linearly transforms intercorrelated variables into smaller sets of uncorrelated, orthogonal variables that contain most of the original dataset's information (Dunteman, 1989, pp. 7). Researchers can use PCA to reduce multicollinearity among highly correlated variables or examine data structure. We aim to do the former and expect to create new variables based on our theoretically chosen controls.

We first select our controls to include in the PCA (see above). After running the PCA, we select the number of components and their resulting scores to include in the model using the Kaiser criterion where an eigenvalues over 1 from the resulting PCA suggests a single component (Kaiser, 1958). We therefore keep all components with an eigenvalue over 1, which is two components in this case.

Given our dependent variables' binary structure, we estimate probit models to estimate the probability a respondent chooses *approve* (*disapprove*). We lag all country-level, right-hand-side variables one year so that the previous year's covariate regresses on our dependent variable. The models also include year- and country-fixed effects, as well as robust standard errors. We then include an interaction between the country and time variables to test if country-specific trends affect the results. Finally, we include the weights variable that the Gallup World Poll (GWP) provides. After pairwise deletion, our sample totals 80,918 observations for 13 countries across 9 years from 2009-2017<sup>8</sup>.

## A-5.2 Model and Data Limitations

While the models provide evidence to support our theory, we do wish to note a few limitations. First, Gallup World Poll (GWP) only offers data from 2006 to 2018. This coverage does not match the years we include in our country-level models. Further pairwise deletion reduces the final sample to cover 2009 to 2017. We also note that some

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<sup>5</sup> For this variable, 1 indicates 'Completed elementary education or less', 2 indicates 'Secondary through 3 year Tertiary education', and 3 indicates 'Completed four years of Tertiary education and beyond'.

<sup>6</sup> While the two variables correlate at .86, we prefer to use the V-Dem's measure because it more closely aligns theoretically with our public opinion data.

<sup>7</sup> Data taken from The Ministry of Commerce of the People's Republic of China (MOFCOM).

<sup>8</sup> Countries include Australia, Cambodia, Indonesia, Japan, Laos, Malaysia, Mongolia, Myanmar, Philippines, Singapore, South Korea, Thailand, and Vietnam. While Gallup includes survey data for New Zealand, pairwise deletion drops it completely from the analysis given that GWP does not provide data on if respondents live in an urban or rural setting. When we drop *urban* from the sample and include responses from New Zealand, we find that our inferences about Chinese informational diplomacy in the sample do not change (N=102,095 in these models).

countries have missing years throughout the sample, such as Australia in 2009. In addition, the sample does not cover all 25 countries in the EAP region.

While Gallup provides the largest country coverage of public opinion data on the world's major power leadership that we know of, it does not have public opinion for smaller island countries like Samoa, Micronesia, and Kiribati (among others). It also does not have polling data on the closed, authoritarian North Korea.

Next, our use of the results from the PCA and public diplomacy composite variables do not allow us to see the effects of the individual variables used to create them. However, we note that they contain the same information that these individual variables carry.

In addition, fixed effects (FE) models have limitations. For instance, FE only address unobserved heterogeneity resulting from unobserved variables that do not change over time. FE does not address time varying unobserved heterogeneity. We are also unable to examine effects of time invariant covariates with FE models. This prevents us from examining the effects of other covariates that we may think are important to the theory and the model specification. What if we wanted to add a variable to separate out island countries because we think that they are treated differently by China? We would not be able to run those analyses with fixed effects. Hill, T. D. et al. (2017) discusses these limitations further. These limitations of FE models apply to all our models that utilize FE specification.

Finally, we note that a whole swath of respondents do not make the sample because they replied *don't know* to the question in which we are interested. Scholars tend to disagree about how to treat these types of responses (Turner and Michael, 1996), including some that argue that the option should be eliminated from surveys on political knowledge at the research design phase (Miller and Orr, 2008). While we suspect that there may be some value in these responses, we aired on the side of caution and dropped them. Some scholars have tried to analyze what are the determinants of selecting *don't know* to better understand them (Edwards, 2018). While this is an interesting line of inquiry, we think it is beyond the scope of our study.

A-5.3 Statistical Results Table

Table IV: Effects of Info. Dip. Tools on Public Opinion (Approval and Disapproval) in the EAP Region (2009-2017)

	(1)	(2)
	Approve	Disapprove
Heads of States, interviews (t-1)	-0.076*** (0.016)	-0.071*** (0.017)
Heads of State, op-eds (t-1)	-0.033** (0.011)	0.047*** (0.011)
Ambassador, op-eds (t-1)	0.103*** (0.010)	0.042*** (0.012)
Journalist visits, inbound (t-1)	0.071*** (0.019)	-0.002 (0.019)
Media partnerships (t-1)	0.019* (0.009)	-0.036*** (0.007)
Ch. public dip. composite (t-1)	0.076*** (0.011)	-0.043*** (0.010)
Female	-0.224*** (0.012)	-0.132*** (0.012)
Urban	0.048*** (0.013)	0.035** (0.013)
Employed	0.008 (0.012)	-0.009 (0.013)
Age	-0.004*** (0.000)	-0.002*** (0.000)
Income, lg	0.025*** (0.005)	0.017** (0.005)

Education	0.142*** (0.011)	0.099*** (0.011)
First PC (t-1)	0.097 (0.058)	0.264*** (0.063)
Second PC (t-1)	-0.062*** (0.018)	0.012 (0.018)
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N	80,804	80,804
Countries	13	13

*Q: 'Do You Approve of Chinese Leadership?'; Probit regression; Year- and country-fixed*

*effects; Intercepts and interaction term not reported; Standard errors in parentheses*

*\* p<0.05, \*\* p<0.01, \*\*\* p<0.001*

## A-6. Comparing the Returns of Informational Diplomacy to other Public Diplomacy Toolkits on Alignment with China in UNGA

### A-6.1 Model Specifications

To measure how and whether Chinese public diplomacy investments correlate with greater foreign policy alignment with China, we use data on voting patterns in the United Nations General Assembly. Bailey et. al. (2017) estimate a country's foreign policy "ideal point" on a common scale in a given year based on its voting record in the United Nations. This variable is widely used in the foreign policy literature to study foreign policy change and similarity (e.g. Dreher et. al., 2018).

To test the effect of China's informational diplomacy on UNGA voting alignment, we include *media partnerships* as a proxy. We also include the composite variable for other forms of Chinese public diplomacy (see Section A-5.1 above). We also include two control variables created by PCA (see Section A-5.1 above). For this model, we utilize several controls. From the World Bank's World Development Indicators (WDI), we include a measure of wealth (*GDP p/c*), natural resource rents as a percentage of GDP (*resource rents*), unemployment rate (*unemployment*), and the percentage of internet penetration (*internet penetration*). Due to *GDP p/c*'s right-skewed distribution, we take the variable's natural log. Next, we include a measure for electoral democracy taken from the Varieties of Democracy (V-Dem) dataset (Coppedge et al., 2019). These variables are all continuous with higher values indicating greater wealth, internet penetration, etc. Finally, we include a count of new Chinese firm entries in the EAP country (*new firm entries*).

We calculate the absolute difference between a given EAP country's ideal point and China's ideal point in a given year as our dependent variable. We then include the public diplomacy composite and PCA variable. In interpreting the coefficients from the models, negative coefficients indicate that as a given covariate increases, the distance between a country's ideal point and China's ideal point becomes smaller, i.e., they have more similar foreign policy interests. So that we can interpret these changes in terms of convergence/divergence, we control for a country's similarity to China in the previous year and include country and year fixed effects in our estimation. We lag all explanatory variables one year. To account for correlated errors within countries, we use country-clustered standard errors. Finally, we then include an interaction between the country and time variables to test if country-specific trends affect the results.

### A-6.2 Model and Data Limitations

Data on our dependent variable, ideal point distance in UNGA, covers all 25 EAP countries. However, coverage on our covariates is limited to 18 countries only for our time-period of analysis. Our model could benefit from inclusion of other country covariates that help isolate the effects of a country's similarity with China. For example, the share of population that is ethnically Chinese or the number of Chinese migrants. Unfortunately, consistent and reliable data is not so readily available for such variables.

Finally, our use of the resulting variables from the PCA and public diplomacy composite do not allow us to see the effects of these individual variables. However, we note that they contain the same information that the individual control variables carry.

A-6.3 Statistical Results Table

Table VII: Relative Effects of Public Diplomacy Toolkits on Alignment with China in UNGA Voting

	UNGA Voting
Media partnerships (t-1)	0.014 (0.019)
Ch. public dip. composite (t-1)	0.003 (0.015)
First PC (t-1)	-0.100 (0.078)
Second PC (t-1)	0.022 (0.028)
LDV	0.141 (0.092)
$R^2$	0.31
adj. $R^2$	0.21
Countries	18

*Panel OLS regression; Year- and country-fixed effects; Intercepts and*

*interaction term not reported; Standard errors in parentheses*

*\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$*



## A-7. Other Models with Inconclusive Results

Our empirical analysis extended beyond the theories that we empirically tested and shared above. Below is a discussion on some other models that we explored but for which our data had insufficient explanatory power.

### A-7.1 Determinants of Chinese Informational Diplomacy

#### A-7.1.1 Model Specifications

To identify the drivers of how China selects which informational diplomacy tool to deploy and where, we chose a set of country covariates that we thought might have an effect on how a country consumes information. We use a panel OLS regression model with country- and year-fixed effects and lag all our covariates by one year. We transform our measure of GDP per capita by taking its natural log to normalize the data's distribution.

Our models feature the five Chinese informational diplomacy variables described above as dependent variables in five separate models: *Heads of State interview appearances*, *Heads of State op-ed appearances*, *Ambassador op-ed appearances*, *EAP inbound to China journalist visits*, and *media partnerships between EAP and Chinese outlets* (by country). We use the following covariates to investigate each outcome variables' drivers: *GDP p/c*, *internet penetration*, *corruption perceptions*, *voice and accountability index*, *rule of law index*, and *V-Dem's Polyarchy Index*. All variables are drawn from the World Bank (2019), with the exception of *V-Dem's Polyarchy Index* (Coppedge et al., 2019).

#### A-7.1.2 Model and Data Limitations

Due to data coverage, our models only include 18 out of the 25 EAP countries. There may be some level of confounding between the following covariates: V-Dem Polyarchy Index; Control of Corruption Index; Voice and Accountability Index; and Rule of Law Index. This is because some of the factors that constitute each of these indices have higher correlation levels. However, we still included them because we felt that they were sufficiently different in what they conceptually explained.

While we estimated OLS panel regression, we suspect that a count model like Poisson or Negative Binomial Regressions would be more appropriate for many of these dependent variables. If we pursued this line of inquiry further, we would perform more thorough model-selection diagnostics.

A-7.1.3 Statistical Results Table

Table III: Determinants of Chinese ID Overtures in EAP Countries

	(1)	(2)	(3)	(4)	(5)
	Media Partnerships, cmltv	Ambassador Op-Eds	Leadership Op-Eds	Leadership Interviews	Inbound Journalist Visits
Internet Penetration (t-1)	0.042 (0.027)	-0.023*** (0.008)	-0.001 (0.004)	0.008* (0.005)	-0.009* (0.005)
V-Dem Polyarchy Index (t-1)	-6.708* (3.702)	1.365* (0.716)	0.504 (0.570)	-0.378 (0.500)	0.077 (0.363)
Control of Corruption Index (t-1)	0.616 (1.104)	-0.129 (0.470)	0.193 (0.205)	-0.122 (0.127)	-0.178 (0.185)
Voice and Accountability Index (t-1)	-1.166 (1.403)	-0.681 (0.404)	-0.388 (0.234)	0.280* (0.155)	-0.019 (0.223)
Rule of Law Index (t-1)	2.095 (1.586)	0.596 (0.415)	-0.243 (0.313)	0.026 (0.141)	-0.035 (0.198)
GDP per capita (log) (t-1)	-0.380 (1.836)	-0.096 (0.535)	0.870* (0.432)	0.046 (0.179)	0.109 (0.355)
<i>N</i>	295	261	261	261	261
<i>R</i> <sup>2</sup>	0.53	0.22	0.22	0.10	0.26
adj. <i>R</i> <sup>2</sup>	0.488	0.155	0.153	0.030	0.203
<i>AIC</i>	1088.068	604.176	378.143	214.666	269.168
Countries	18	18	18	18	18

Standard errors in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## A-7.2. Comparing the Returns of Informational Diplomacy to other Public Diplomacy Toolkits on Economic Returns

### A-7.2.1 Model Specifications

In our analysis of the effects of Chinese public diplomacy on trade with EAP countries, we examine trade as net exports (i.e. exports minus imports). As discussed below, the goals of China in terms of trade may be more complicated than simply increasing net exports to produce a positive trade balance. For some goods, such as raw materials, China may want to import more from EAP countries than it exports, because China needs these raw materials for its economic growth. Fuel is a particular example where China may want to import more than it exports due to the limitations of its internal fuel reserves and its ability to extract what it needs from those reserves.

To analyze the effects of Chinese public diplomacy on trade with EAP countries we ran panel OLS regression models, with country- and year-fixed effects, for net exports on public diplomacy variables and a set of controls. We divide the dependent variable (net exports) by GDP to adjust for the size of the economy in each EAP country. We designed these models to examine the effect of informational diplomacy, because it is of primary interest in this study. We modeled informational diplomacy with media partnerships based on the idea that the duration and strength of these partnerships may reveal effects on outcomes. Given our interest in informational diplomacy and because some of the public diplomacy variables are highly correlated, we combined the other public diplomacy variables into an index and incorporated this index in our analysis.<sup>9</sup> All our explanatory variables were lagged by one year. In order to address multicollinearity between the control variables, we ran a PCA on these variables and included the scores of the first two principal components as controls (see A.5-1). These controls include *internet penetration*, *new Chinese firm entries*, *unemployment*, and *resource rents*.

We ran multiple models to examine how adding factors to the model improved the model. We started with a bivariate model incorporating media partnerships as the only independent variable. In subsequent models we added country fixed effects, year fixed effects, controls, and year trends by country.

### A-7.2.2 Model and Data Limitations

We expect China to have a different focus for trade by product group (i.e. capital goods, consumer goods, intermediate goods, and raw materials). While China will want an overall positive trade balance, its need for raw materials and intermediate goods could drive China to seek more imports of these, resulting in negative net exports for these product groups. Modeling each of the four product groups separately would give insights into how China focuses trade to meet its needs. Performing such modeling would increase the number of significance tests, which introduces the issue of multiple comparisons. Other more sophisticated techniques would be required to address this issue. It also would be interesting to examine imports and exports separately by product group. Running such models would make addressing the multiple comparison issue even more important, because modeling imports and exports separately would increase the number of tests, which would worsen the multiple comparison issue.

Being the difference between the import and export values, using net exports as a variable shrouds the changes in the imports and export levels individually. In other words, one cannot tell whether changes observed in net exports are due to changes in imports or changes in export or both. The high correlation between imports and exports, however, makes it possible to suggest the likely scenario of how changes in imports and exports affect net exports. Because imports and exports are highly positively correlated, when exports increase, imports will also tend to increase. An increase in net exports would tend to be the result of a higher increase in exports than imports, rather than an increase in exports without a corresponding increase in imports.

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<sup>9</sup> The index is the public diplomacy composite found in other models. The construction of this composite is described in Section A-5.1.

A-7.2.3 Statistical Results Table

Table IX: Relative Effects of Public Diplomacy Toolkits on China's Net Exports with EAP

Countries

	(1)	(2)	(3)	(4)	(5)
	Bivariate	+ Country FE	+ Time FE	+ Controls	+ Country Year Trends
Media partnerships (t-1)	-149.650** (74.219)	132.897 (99.502)	-44.457 (157.083)	-213.585 (372.597)	275.318*** (84.186)
Ch. public dip. composite (t-1)				-395.224** (169.177)	-33.443 (164.748)
First PC (t-1)				1994.674 (1687.629)	-255.457 (825.371)
Second PC (t-1)				252.143 (316.286)	-112.551 (214.571)
N	386	386	386	316	316
Countries	24	24	24	21	21
R <sup>2</sup>	0.01	0.01	0.07	0.16	0.72
adj. R <sup>2</sup>	0.004	0.004	0.026	0.108	0.684
AIC	7310.220	6973.341	6980.459	5743.098	5391.487

Standard errors in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

### A-7.3 Determinants of China’s Student Exchange Overtures

Similar to our analysis of the determinants of Chinese informational diplomacy overtures, we tested a series of models to determine the drivers of: (i) outbound Chinese students’ destination choice; and (ii) China’s announcement of official government scholarships. To test for drivers of choice of EAP students to study in China, we would need respondent-level data.

A key challenge in conducting these empirical analyses was the small  $N$  resulting from the limited coverage in student exchanges data. For example, while testing for the factors that affect the destination choice of Chinese students, only 11 countries had sufficient coverage with only 100 observations (see table below). This is less than half the countries in the EAP region.

#### Determinants of Chinese Student Choice of EAP Country

	(1)
	Outbound Chinese Students
Vol. of Chinese Students (t-3)	0.471* (0.226)
Confucius_institutes (t-1)	1249.806* (644.759)
GDP per capita (log) (t-1)	3911.175 (8959.358)
Internet Penetration (t-1)	111.951 (328.112)
V-Dem Polyarchy Index (t-1)	23209.441 (21380.400)
$N$	100
$R^2$	0.72
adj. $R^2$	0.659
AIC	2016.437
Countries	11

*Standard errors in parentheses*

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## A-7.4 Two-Step Approach to Modeling the Long-Term Effects of Chinese Informational Diplomacy

According to our theory of change, when China deploys its informational diplomacy tools, these tools achieve certain medium-term objectives occur prior to their long-term goals. We illustrate this in Chapter 2 through the examples of tone and volumes of reporting. We tried to empirically test the effects of informational diplomacy inputs on achieving their medium-term objectives and subsequently the effects of these medium-term outcomes on the longer-term goals of public diplomacy through a two-step model.

In the first step, we modeled the effects of our five ID tools on the tone of reporting data from GDELT. In the second step, we modeled the effects of shifting tones on China's reputational gains or public opinions. Data coverage limited deriving any useful insights for these models. Pairwise analysis dropped 15 out of the 25 countries.

## A-7.5 Interplay between Student Exchanges and Informational Diplomacy in Determining Longer-Term Reputational and Security Gains

While researching the efficacy of student exchanges in pursuit of soft-power gains, we learned of arguments that dictated the requirement of a positive image of the destination country in the sending country, in order for student exchanges to happen. To test this theory, we employed two approaches: (i) to use an interaction term of inbound EAP students to China and the cumulative values of media partnerships; and (ii) a mediator model that tested for the mediating effect of informational diplomacy on student exchanges.

Similar to previous models, our number of observations drops and country clusters drop significantly when analyzing student exchange data. This leads to inconclusive results. In the second model, we did not observe any mediating effects, which is likely a function of limited country-year coverage in the student exchanges data that does not permit sufficient time-lag specifications in empirical modeling.

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