

Introduction

Under what conditions does the general public seek out information during an international crisis? Theories on audience costs, public opinion, mass media, and foreign policy assume this behavior occurs. However, few studies provide any systematic evidence illustrating information-seeking, and surveys on these actions are infrequent, expensive, and subject to self-report bias.

This study addresses such issues by using a novel and increasingly useful source of data: internet search engine volumes. We use data from Baidu (China's largest search engine) to study information-seeking by Chinese citizens during the current South China Sea dispute—a major global security concern involving competing claims between China, Brunei, Malaysia, the Philippines, and Vietnam over territory and natural resources. By examining how crisis events affect search volumes, while controlling for media coverage intensity and other covariates, we empirically examine how event type, geography, and threat directionality influence information-seeking.

Search Engine Data

To study information seeking, we use the Baidu Index—a measure proportional to total search volume of a specific term. See Figure 1.

This data outperforms surveys or other methods in several ways. First, it is much larger than most alternative sources. Second, it captures meaningful and honest images of people's behavior, which is particularly valuable for studying authoritarian regimes. Third, search records are available at the daily level and can be disaggregated by province, allowing for more granular analysis. Lastly, searches themselves are not subject to censorship efforts in China.

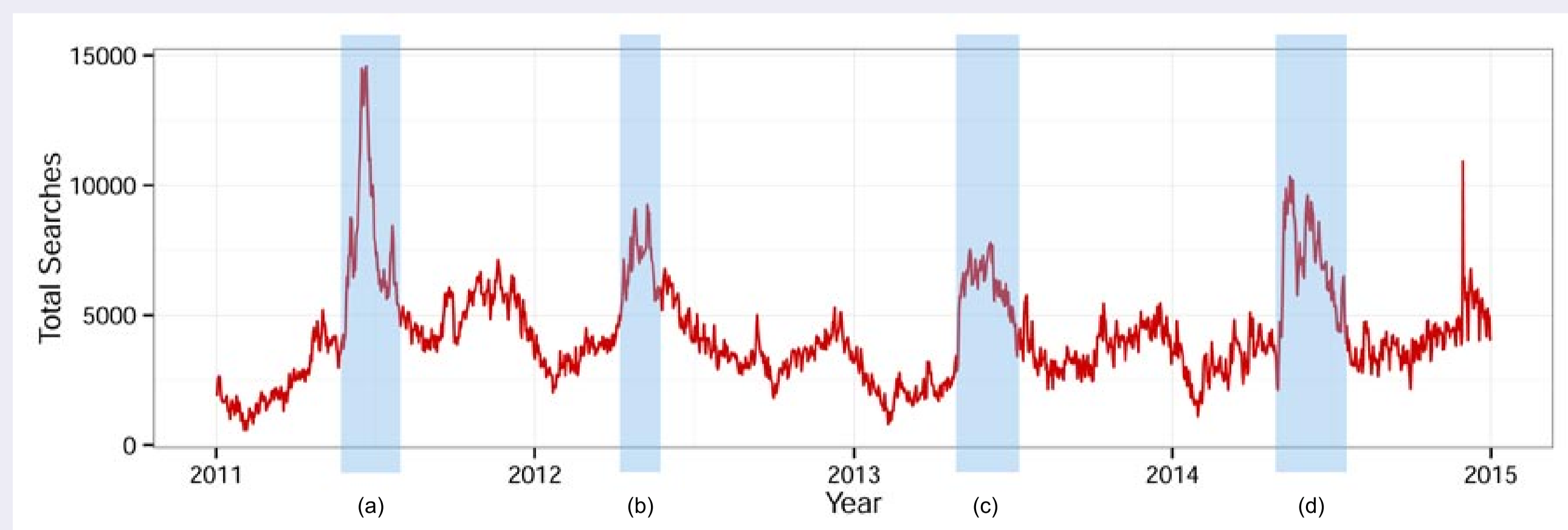


Figure 1 : National-level Baidu Index for the South China Sea dispute. The four highlighted spikes are (a) military exercises by six Asian navies and the US, and then China; (b) the Scarborough Shoal stand-off between China and the Philippines; (c) the death of two Taiwanese fishermen in disputed waters, and later military exercises; and (d) unrest after the movement of a massive Chinese oil rig into disputed waters.

Theory and Hypotheses

H1 (Event Type): Information-seeking by Chinese citizens will tend to increase more in light of conflictual events than cooperative events.

H2 (Geography): Information-seeking by Chinese citizens will tend to behave differently in provinces closer to the South China Sea.

H3 (Directionality): Information-seeking by Chinese citizens will tend to be higher for events (by other parties) that are directed at China.

Data and Measurement

DV: Daily provincial-level Baidu Indices for terms related to the “South China Sea Dispute” from January 2011 to December 2014.

IV: Daily classifications of events related to the South China Sea that involve China as an initiator or target, as reported by US and Chinese periodicals. Events are coded as either cooperative or conflictual using the CAMEO scale. See Figure 2.

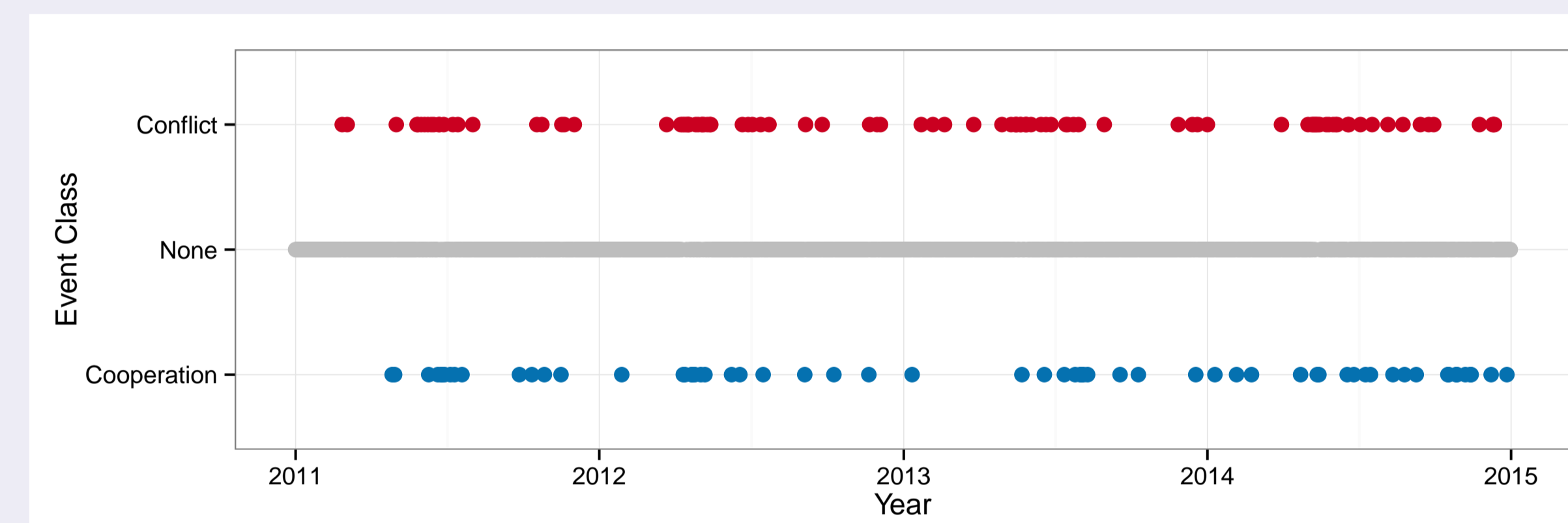


Figure 2 : Cooperative and conflictual events between 2011 and 2014.

Model Specification

As the Baidu Index is an overdispersed count variable, we utilize a quasi-Poisson regression. Our main covariates of interest are:

- Occurrence of cooperative/conflictual events on day t
- Interaction of cooperative/conflictual events on day t with indicator for whether province i has a coast
- Whether an event on day t targeted or was initiated by China

Seven-day lags of the dependent and main independent variables are included to address serial correlation. Fixed effects for month, year, and day of week, as well as robust standard errors, are also used.

Further controls include provincial levels of internet penetration, population, and education levels; and national volumes of news media concerning the South China Sea.

Results

Immediate effects of each covariate are shown below; coefficients for all lags, controls, and fixed effects are suppressed to conserve space.

	DV: Baidu Search Index in Province i			
	(1)	(2)	(3)	(4)
Conflict _{t}	0.066*** (0.009)		0.045*** (0.010)	
Cooperation _{t}	0.003 (0.011)		0.029** (0.013)	
Conf _{t} × Coastal _{i}			-0.032** (0.015)	
Coop _{t} × Coastal _{i}			-0.038* (0.020)	
Coastal _{i}		0.471*** (0.016)	0.969*** (0.069)	
To China _{t}				0.060*** (0.011)
From China _{t}				0.028*** (0.008)
Lags	7	7	7	7
Fixed Effects	Y	Y	Y	Y
N	42,137	42,137	43,800	43,590

Robust standard errors in parentheses. Significance at * $p < .10$; ** $p < .05$; *** $p < .01$ levels.

Interpretation

We find evidence of proactive information-seeking even after controlling for media coverage.

Model 1 (H1): Reactions to conflictual and cooperative behavior are asymmetric; the public cares more about hostility.

Models 2 & 3 (H2): Location plays an interesting role. Citizens closer to the conflict search more about the South China Sea regardless of events, but are less reactive to incidents directly involving the sea.

Model 4 (H3): Directionality could matter. Actions targeted at China seem to cause more concern than actions initiated by China.

Conclusions

Despite analyzing an authoritarian regime, this study finds systematic patterns of active information-seeking.

Search engine data may be an ideal way to gauge genuine issue salience and public behavior in almost all socio-economic and political contexts.