

# Civil society advocacy for wildlife conservation in Vietnam\*

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## Abstract

Civil society advocacy plays an important role in wildlife conservation. However, existing research has repeatedly questioned the effectiveness of nongovernmental organizations (NGOs) in local conservation projects, especially in the Global South. The literature on transnational advocacy organizations suggests that the lack of accountability to local communities encouraged rent-seeking behaviors of NGOs. In this manuscript, I offer a new perspective: the effectiveness of NGO advocacy is dependent on how NGOs engage with the interest heterogeneity of the local public. I leverage a population-based survey experiment in Vietnam to evaluate the differential effects of NGO advocacy for pangolin (scaly anteater) conservation on different subsets of the public: preservationists, appropriators, and the mass public. The results show that different subsets of the public react to conservation advocacy differently with appropriators being most sensitive to interventions. The implication of the finding is important for both academics and practitioners, which raises a question of whether accountability concerns help resolve the problem of NGOs in local environmental projects.

Civil society advocacy plays an important role in wildlife conservation. Although international and domestic wildlife regulations are meant to restrict the harvest, trade, and consumption of threatened species, the lack of public awareness could render those regulations useless or even counter-effective. For example, the trade ban on black rhinoceros under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1977 led to the price hikes of rhino-based products in the illicit market and encouraged the poaching of the very species it was meant to save ([Challender, Hinsley and Milner-Gulland, 2019](#)). As a result, black rhinoceros populations declined even further, and to date they have not recovered to the level of self-sustainability. For successful wildlife conservation, political decision-making alone is insufficient. Consumers of wildlife products must recognize that certain species are indeed threatened and that the consumption of those species must be reduced or even stopped entirely.

Conservation nongovernmental organizations (NGOs) routinely conduct campaigns to raise awareness of threatened species in local areas of conservation. In 2016, for example, The Nature

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\*An early draft. Apologies for typos and errors.

Conservancy and WildAid launched a campaign in China to reduce the consumption of pangolins (scaly anteaters), featuring celebrities such as Jackie Chan in their campaign ads. However, evidence from the Global South questions the effectiveness of wildlife advocacy campaigns in local areas. Scholars argue that international NGOs often fail to succeed in local conservation projects because they do not possess contextual knowledge to work with and gain support from local communities ([Dang Vu, Nielsen and Jacobsen, 2020](#); [Fuentes-George, 2016](#); [Wapner, 1995](#)). [Balboa \(2018\)](#) points out the accountability problem of international NGOs in which NGOs are accountable almost exclusively to Northern audiences, such as donors and funders, instead of local communities. The tendency of international NGOs to fail in local projects is well-documented in other areas of global governance. In humanitarian assistance, for example, the presence of NGOs could be detrimental to the local public if they are seeking resources from international donors alone ([Cooley and Ron, 2002](#); [Murdie, 2014](#)).

While existing research offers important critiques to the effectiveness of NGOs in local areas, it has often assumed that the preferences of the local public are homogeneous, meaning that they either align with the preferences of Northern audiences or not. This is not just an analytic assumption but also offers a normative implication. In the study of conservation governance, critical scholars pointed out racism and stereotypes embedded in conservation projects ([Margulies, Wong and Duffy, 2019](#); [Neumann, 2004](#)). In conservation advocacy, local people are often seen as “others” who consume threatened “exotic” species, having a different set of preferences about wildlife conservation. In reality, the preferences of the local public are also heterogeneous. *Preservationists* believe that nature and wildlife should be kept away from human consumption as much as possible ([Nadelmann, 1990](#)). *Appropriators* harvest, process, or consume wildlife as a part of natural resources ([Ostrom, 1990](#)). And many others, or *the mass public*, may not be interested in conservation at all because wildlife consumption has little personal relevance. The literature on public opinions suggests that such interest heterogeneity has behavioral consequences, although it is studied primarily in the context of voting behavior ([Henderson, 2014](#); [Krosnick, 1990](#)). I argue that the interest heterogeneity of local populations regarding nature and wildlife impact the effectiveness of NGO advocacy.

To account for heterogeneous effects of conservation advocacy, I leverage a survey experiment on NGO advocacy for pangolin conservation in Vietnam. The pangolin is a dog-sized mammal, traded in Asia and Africa as traditional medicine and wildlife meat. The case of pangolin conservation illuminates the importance of consumer awareness in wildlife conservation. Despite the toughest CITES ban on pangolin trade in 2016, an increasing amount of illegally trafficked pangolins has been discovered in recent years ([Harrington, D'Cruze and Macdonald, 2018](#); [Wildlife Justice Commission, 2020](#)). Vietnam is one of the major trade hubs for wildlife products, including pangolins ([Heinrich et al., 2017](#)), but the lack of awareness about the plight of pangolins has been pervasive among local consumers.

Moreover, Vietnam captures the variation in interests in wildlife conservation among the local public. On the one hand, the Vietnamese wildlife market is one of the major sources of demand for pangolins and other wildlife products. In Vietnam, the national health insurance covered pangolin-related traditional medicine until 2014. According to the recent survey conducted by the World Wildlife Fund (WWF) in Vietnam (n=996), 48% of the respondents have consumed wildlife products before ([World Wildlife Fund, 2020](#)). On the other hand, Vietnam is a rapidly urbanizing country, shifting away from traditional dietary habits ([Khue, 2015](#)). There is also a significant number of internal migrants due to environmental stressors ([Koubi et al., 2016](#)). Thus,

Vietnam offers a wide variation of individual interests in traditional medicine, the use of wildlife, and nature preservation.

I experimentally manipulate an advocacy message for pangolin conservation to evaluate its effects on the different subsets of the local public. There are two key components to the advocacy message. First, the source of advocacy information may affect how respondents process incoming information. In social psychology, source credibility is a major predictor of the likelihood of persuasion (Petty and Cacioppo, 1986). In the study of NGOs, domestically oriented organizations tend to collect a greater amount of donations relative to internationally oriented counterparts, as people like to see their money being spent on domestic rather than international problems (Knowles and Sullivan, 2017). In the context of conservation, the effect of information sources is rather ambiguous. Foreign organizations advocating for domestically unpopular causes, such as anti-whaling in Japan, could fuel backlash from domestic audiences (Blok, 2008), but the national government advocating for forest conservation with an emphasis on local benefits did not significantly increase popular support in Brazil (Bakaki and Bernauer, 2016). In light of existing research, it remains an empirical question whether the public perception of an organization being foreign or domestic affects the effectiveness of NGO advocacy. This experiment compares the effects of a well-known global conservation NGO (WWF) and domestic NGO (Education for Nature - Vietnam).

Second, framing may impact how respondents think about the issue of pangolin conservation. The power of framing is well-documented in the study of transnational advocacy campaigns (Allan and Hadden, 2017; Price, 2003). To date, the vast majority of conservation NGOs have framed the issue of pangolin trafficking as a threat to the well-being of pangolins, emphasizing the brutal nature of poaching and the threats to biodiversity more broadly. However, pangolin consumers may be less interested in the preservation of pangolins *per se* but the sustainable use of pangolins in traditional medicine given their beliefs in the effectiveness of pangolin-based therapeutics (Sexton, Nguyen and Roberts, 2021). Although no conservation NGO has adopted this frame, an emphasis on sustainable use may be locally effective. Finally, the COVID-19 pandemic raised awareness of disease transmission from wildlife to humans. At the onset of the pandemic, the pangolin caught public attention as one of the possible intermediary species (Lam et al., 2020). Although not many people place high importance on wildlife conservation, an emphasis on the pandemic may increase the issue's personal relevance to the mass public.

My analysis shows that NGO advocacy has heterogeneous effects on different subsets of the local public. Although NGO advocacy was largely ineffective among members of the mass public who have low personal relevance to pangolin conservation, it was effective among those who care deeply about environmental protection (*i.e.* preservationists) and those who routinely consume traditional medicine (*i.e.* appropriators). The remainder of this manuscript is as follows. First, I review the literature on NGOs and environmental conservation to justify my focus on the interest heterogeneity of the local public. Second, I introduce several hypotheses regarding the effects of NGO advocacy on different subsets of the public. Third, I explain the experimental design that allows me to examine my argument. The forth section reports the results of analysis, and the fifth section discuss the interpretation of results in relation to the hypotheses. Finally, I discuss broader implications of my findings for the study of civil society advocacy and environmental governance.

# 1 Civil society advocacy for wildlife conservation

The study of NGOs is generally skeptical of the effectiveness of international NGOs in local conservation projects. [Balboa \(2018\)](#) argues that, while international NGOs have capacity to influence global policy agendas, they lack local knowledge or authority to successfully implement local conservation projects. Similarly, [Fuentes-George \(2016\)](#) argues that NGO-led conservation projects often invite backlash from developing countries because exclusive reliance on conservation science marginalizes the views of local populations. Critical studies also point out the tendency of global conservation projects to embody neo-colonial forms of development ([Epstein, 2006](#); [Neumann, 2004](#)).

All of these studies point to a major problem pervasive among international NGOs: the lack of local accountability. International NGOs are supported and evaluated by predominantly Northern audiences, who often hold different views from local communities. As such, they may act against the interest of the local public and reap short-term gains from Northern audiences. Drawing on the principal-agent theory, scholars have conceptualized such myopic behaviors as agency slack, in which divergent interests of international and local audiences (*i.e.* principals) encourage NGOs to seek their own benefits at the expenses of principals ([Cooley and Ron, 2002](#); [Gent et al., 2015](#); [Murdie, 2014](#); [Prakash and Gugerty, 2010](#)).

These studies, however, often assume that local populations have homogeneous preferences which either agree or disagree with how Northern-led conservation projects are conducted. As public opinion research consistently indicates, the vast majority of the public do not hold such strong opinions ([Converse, 1964](#); [Zaller, 1992](#)). There is also heterogeneity of preferences among people affected by conservation ([Agrawal, 2007](#)). If the success of conservation depends on reducing the demand for certain wildlife species among members of the local public, it is highly problematic to treat them as a monolithic group and ignore the heterogeneity of preferences.

In other words, the problem may not be the agency slack encouraged by the divergent interests of multiple principals. Instead, I argue that the problem may be the choice of a message that NGOs make in local projects. Most NGOs are in fact sincere about their intention to conserve nature and wildlife, but their expertise and routinized behavior as an organization lead to path-dependent choices that are initially informed by Northern audiences ([Barnett, 2009](#)). This is not the same as agency slack, in which NGOs are happy to be hypocrite and let conservation projects fail. It is Max Weber's argument about the "iron cage" of bureaucracy ([Ritzer, 1975](#)). Conservation NGOs are highly rationalized bureaucracies pursuing nature preservation, which in turn makes them overlook the concept of wildlife as a natural resource. NGOs may do well when they operate among the stakeholders who share the same concept of nature and wildlife. When they are not, which is often the case in local conservation projects, they are unable to adapt to the new environment ([Stevenson et al., 2021](#)).

Different individuals have different ideas about nature and wildlife. The literature on wildlife conservation has documented demographic covariates of people who tend to hold pro-conservation attitudes ([George et al., 2016](#); [Gillingham and Lee, 1999](#); [Kideghesho, Røskift and Kaltenborn, 2007](#)). Across developing and developed countries, support for wildlife conservation increases with the characteristics associated with Inglehart's (1997) modernization thesis, such as urbanization, education, and income. Gender is also a consistent predictor of pro-conservation attitudes with women being more likely to support conservation than men ([Czech, Devers and](#)

Krausman, 2001). Personal experience, such as familiarity with protected species, increases pro-conservation attitudes (Subroy, Rogers and Kragt, 2018). Overall, the degree to which a species is endangered does not affect conservation attitudes (Colléony et al., 2017), but cues as simple as species names might affect the level of support for species conservation (Karaffa, Draheim and Parsons, 2012).

However, conservationists are generally pessimistic about the effectiveness of interventions aimed at protecting certain species. Thomas-Walters et al. (2020) argue that most conservation projects focus on changes in consumer behaviors, which do not address underlying systemic issues in local communities. While some find that reducing demand for wildlife products is a more cost-effective strategy than anti-poaching law enforcement (Holden et al., 2019), the effects of such interventions are not rigorously evaluated with the exception of qualitative research on demand reduction campaigns (Vu, Nielsen and Jacobsen, 2020). An interviewee from WildAid also mentioned:<sup>1</sup>

We always are struggling to find ways to help document our impact. We obviously dependent on donations and funding. We're more concerned about the programs themselves, actually trying to make a difference. We don't have as much resources available for research and evaluation.

It is certainly important to evaluate conservation outcomes in terms of the actual recovery of protected species, but we also need to pay attention to the micro-mechanisms of conservation interventions. As practitioners typically lack resources to rigorously evaluate the effects of demand reduction campaigns, my analysis can offer useful insights as to how conservation messages should be delivered to different subsets of the public.

## 2 Theory and hypotheses

To explore the heterogeneous effects of a conservation message, I capture the variation of preferences among members of the local public. Among individuals with different experiences in nature and wildlife, the meaning of “conservation” is not uniformly interpreted. Instead, “conservation” is defined by the relationships that individuals have to nature. I introduce three categories to define different subsets of the public: *preservationists, appropriators and the mass public*.

*Preservationists* refer to the people who are interested in the protection of species and nature. They believe that certain species should not be consumed at all for moral or ecological reasons. For example, whale conservation is supported by an increasing number of preservationists who see whales as “unique and unusually intelligent forms of animal life that should not be killed at all” rather than a natural resource (Nadelmann, 1990: 517). *Appropriators* refer to the people who extract resources from the environment for daily needs or leisure, such as traditional medicine and sport hunting (Ostrom, 1990). They may not be aware of the risk of resource exhaustion, but once informed, they prefer the sustainable use of certain species to the total prohibition of their use in order to continue their economic and cultural practices. Finally, the majority of the public, or *the mass public*, should have so-called “non-attitudes” towards conservation (Converse, 1964),

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<sup>1</sup>Interview protocol was approved by the University of Toronto’s Research Ethics Board on July 20, 2017 (ID: 34702). Interview was conducted on April 26, 2019.

as wildlife conservation is unlikely to affect the material interest of most people. The nature of the mass public suggests that they rely on information shortcuts and minimize cognitive engagement when exposed to new information (Downs, 1957; Zaller, 1992).

I use these subgroups to generate hypotheses around the key elements of conservation advocacy. First, information sources—*who* advocates for pangolin conservation—should affect responses based on individuals’ *a priori* interests in “conservation.” High-profile, global NGOs should be more effective than local conservation groups among the mass public because of the mass public’s tendency to rely on cognitive shortcuts such as organizational reputation rather than the content of the advocacy message. The seminal work in social persuasion uses a Princeton University professor and a high school student group to compare the differential effects of information sources (Petty, Cacioppo and Goldman, 1981). When new information has low personal relevance, information sources have significant effects; by contrast, when personal relevance is high, information sources do not affect persuasion (Petty and Cacioppo, 1986). Given that preservationists and appropriators have personal interest in conservation, I expect that either source has a significant impact on their posterior attitudes.

Second, in line with the study of environmental NGOs (Allan and Hadden, 2017; Keck and Sikkink, 1998), framing should affect how local populations respond to an advocacy message. Framing is an effort to highlight certain aspects of an issue such that the issue becomes relatable to target audiences (Goffman, 1974; Snow et al., 1986). The goal of pangolin conservation advocacy is to reduce the demand for pangolin products, but different frames exist to explain why one should not consume pangolins. An emphasis on the *harm and threats* to the pangolin should be effective among preservationists, who value the well-being of nature and wildlife. However, the same framing may harden the attitudes of appropriators, who regard the use of pangolins in medicine as an important part of cultural practices. Instead, an appeal to the *sustainable use* of pangolin products in the future should be effective among appropriators, as it offers an acceptable middle ground between unrestricted consumption and total prohibition. Finally, an appeal to the *pandemic* should affect all subgroups, but the largest effect is expected among members of the mass public, who would otherwise be uninterested in conservation. I summarize these expectations below:

**H1 (mass public):** Advocacy by high-profile, global NGOs is more persuasive than local NGOs.

**H2 (mass public):** The effect of the pandemic frame is the largest among the mass public.

**H3 (preservationists):** The effect of the harm-and-threats frame is the largest among preservationists.

**H4 (appropriators):** The effect of the harm-and-threats frame is negative among appropriators.

**H5 (appropriators):** The effect of the sustainability frame is the largest among appropriators.

### 3 Research design

To explore the above hypotheses, I conducted a survey experiment in Vietnam between April 26 and May 3, 2021 with 1,760 adult-only respondents.<sup>2</sup> The sample was drawn from Dynata’s

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<sup>2</sup>The sample size is based on the power analysis conducted prior to fielding the survey. See Appendix A.

member-based panel in Vietnam.<sup>3</sup> The survey was structured in three stages. First, the respondents answered demographic questions such as age, gender, and education. Given the persistent socio-economic divide between Northern and Southern Vietnam (Arrighi, Silver and Brewer, 2003), the survey also asked respondents' attachment to North and/or South Vietnam. Second, the respondents were randomly assigned to treatment conditions that varied in terms of information sources and advocacy framing. After reading an advocacy message, the respondents were asked to indicate the level of agreement with a statement about pangolin consumption on a 1-7 scale. Finally, the respondents indicated the importance of nature and wildlife as well as the use of traditional medicine in their daily lives. Note that these questions were asked after the experiment in order to avoid priming that may occur from questions about nature and traditional medicine. The survey instruments are available in the OSF registry along with the pre-analysis plan (<https://osf.io/xrw4u/>).

In order to experimentally manipulate information sources, I use two NGOs relatively well-known in the Vietnamese context: WWF and Education for Nature - Vietnam (ENV). WWF is a global conservation NGO that has the largest budget and membership among environmental NGOs (Bossio, 2005). It has a national office in Hanoi, conducting both research and advocacy for a wide variety of domestic and foreign species. ENV is a Hanoi-based national NGO that specializes in the conservation of Vietnamese wildlife. Although ENV is a relatively well-known among domestic NGOs, WWF has wider recognition in the Vietnamese society. Figure 1 shows weekly Google Trends between June 5, 2016 and May 30, 2021. This trend captures the volume of queries originating in Vietnam for each NGO, standardized between 0 and 100 (where the highest volume is set to be 100). While there are a few weeks in which ENV surpassed WWF, the trend suggests that WWF is consistently more visible and thus recognized among the Vietnamese public. This difference in recognition allows me to test H1 about the premium attached to information sources. The survey also included a brief description of the NGO in brackets to signal whether it is a global or domestic organization.

I use three types of framing corresponding to the interests of the different subsets of the public. First, the *harm-and-threats frame* highlights the inhumane nature of over-consumption of pangolin products. This frame is widely used by conservation NGOs, domestic and international. For example, WWF uses a Disney-like animation to create a humanized image of the pangolin to evoke our sympathy. In its campaign ad, the pangolin named as "Lin" tells us, "The situation is critical, averaging about a hundred thousand goodbyes a year," emphasizing the magnitude of killing facing pangolin populations (see Appendix B). Second, the *sustainability frame* emphasizes the risk of resource exhaustion. Given the lack of scientific evidence on the medical effects of pangolin products, to my knowledge no conservation NGO uses this type of framing. However, doctors and patients in Vietnam generate persistent demand for pangolin-based traditional medicine with the belief that pangolins can be used to cure a variety of diseases, including cancer (Sexton, Nguyen and Roberts, 2021). Regardless of the actual effect, sustainable consumption may be a middle ground that appropriators can accept rather than accepting the humanized image of the pangolin. Finally, the *pandemic frame* highlights the risk of dangerous disease transmission from wildlife. At the onset of COVID-19 outbreak, the pangolin was suspected as the interme-

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<sup>3</sup>The survey begins with the explicit consent of each respondent, following the protocol approved by the European University Institute's Ethics Committee (December 18, 2020). Respondents were free to withdraw from the survey without mentioning any reason. Dynata provides incentives for participants to complete the survey, which can be converted to gift cards, points programs, charitable contributions and its partner programs and services.

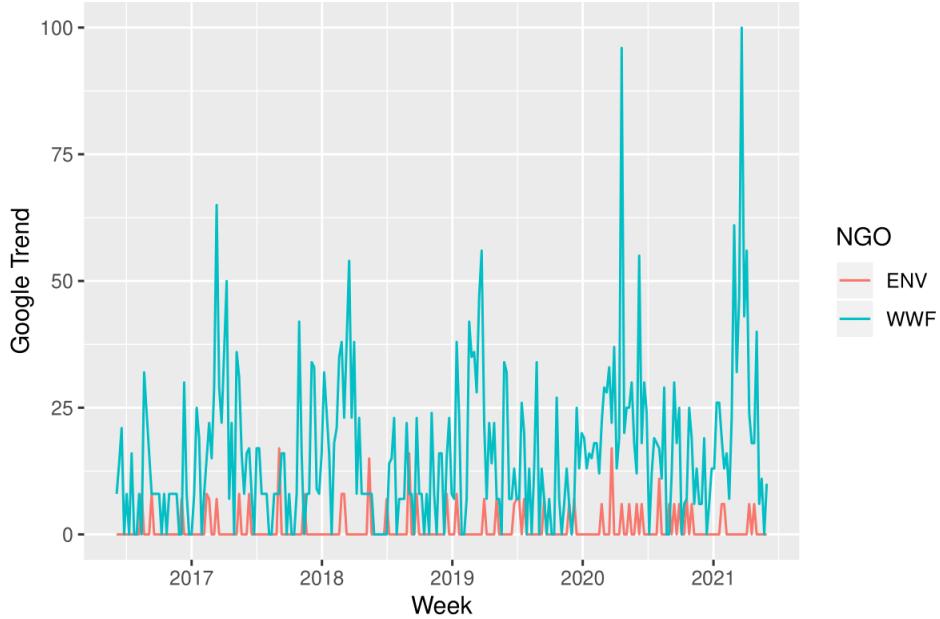


Figure 1: Google Trend of WWF and ENV between June 2016 and May 2021

diary species that carried the pathogen to humans. Although the origin of the disease is still investigated, some conservation NGOs have been using the pangolin as a symbol of zoonotic diseases since the beginning of the pandemic. For example, Wildlife Conservation Society circulated the infographic shown in Appendix C on social media on March 10, 2020 to call for a universal ban on wildlife trade.

In the survey experiment, respondents received the following message in Vietnamese. The control group received only the first line, and the treatment groups received the full message with randomly assigned NGO and frame (see randomization design in Appendix D). The survey then asked the level of agreement with the statement, “Vietnamese people should not buy pangolin-related products.” The respondents were given a 1-7 scale choice ranging from “strongly disagree” to “strongly agree.”

“The pangolin is an animal that is used in traditional medicine. In traditional medicine, pangolin scales are believed to cure a variety of illnesses, such as arthritis, amenorrhea, and tumors. However, NGO argues that people in Vietnam should not buy pangolin-related products in order to frame.”

#### NGO

- World Wildlife Fund (the world’s leading conservation group)
- Education for Nature - Vietnam (Vietnam’s conservation group)

#### frame

- *Harm-and-threats frame*: “save pangolins from slaughter and extinction”
- *Sustainability frame*: “maintain enough pangolin populations to be used in traditional medicine for years to come”

- *Pandemic frame*: “prevent the spread of novel infectious diseases that pangolins may carry”

Finally, to identify whether each respondent is a preservationist, an appropriator, or a member of the mass public, the survey asked the importance of nature and the frequency of traditional medicine use. Each category had two questions. For the importance of nature, the survey asked, “To you, how important is it to keep nature and wildlife intact?” and “It might not be possible to achieve both nature conservation and economic growth. To you, how important is it to protect nature and wildlife at the expense of economic growth?” The respondents who answered, “very important” to both questions are grouped as preservationists (n=757). For the use of traditional medicine, the survey asked “Have you used traditional medicine before?” and “How often do you use traditional Chinese medicine?” Those who responded “yes” and “everyday” or “a few times a week” are grouped as appropriators (n=308).<sup>4</sup> The rest of the respondents are grouped as the mass public (n=715).

## 4 Results

Table 1 reports the characteristics of the respondents in each subgroup and the sample as a whole. The number of preservationists are greater than initially expected. This may be because they were primed for pro-environmental attitudes in the experiment immediately preceding the question about the importance of nature. Moreover, public opinion research suggests that urban and educated individuals tend to hold pro-environmental attitudes ([George et al., 2016](#); [Gillingham and Lee, 1999](#); [Kideghesho, Røskaft and Kaltenborn, 2007](#)), and the sample is indeed skewed towards educated and urban respondents despite our sampling effort. This implies the need to apply weights based on the marginal distribution of such demographic characteristics. For now, the analysis is conducted without weights but controls for these demographic factors in regression analysis.

	All	Mass Public	Preservationists	Appropriators
N	1,780	715	757	308
% Female	43.7	41.5	43.2	49.7
Average age	34.4	33.0	34.2	38.0
% University degree	84.3	82.2	87.3	81.5
% Very proud to be Vietnamese	98.0	96.6	98.4	94.8
% Urban (current)	87.2	83.6	88.1	93.2
% Urban (past)	60.7	51.9	64.2	72.4
% Attachment to Northern Vietnam	38.2	42.5	38.6	27.3

Table 1: Composition of the respondents by subgroup

Figure 2 shows the average response by subgroup. Given that the subgroups are identified with *a priori* interest in nature and traditional medicine, their baseline responses might be different. To examine whether baseline attitudes differ from one another, I conducted nonparametric

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<sup>4</sup>The respondents who have the overlapping membership in both are counted as appropriators.

tests for each pair of control groups. Although the difference between the mass public and appropriators only narrowly failed to reject the null hypothesis, we do not have evidence to say that the subgroups have different baseline attitudes towards pangolin conservation (Appendix E). Interestingly, appropriators on average have stronger support for reducing the demand for pangolins than preservationists after all kinds of manipulations. The sensitivity of appropriators to advocacy is surprising, given that their interest may not completely align with Northern conservation NGOs, which are typically critical of the use of animal-based traditional medicine. Perhaps, the psychological characteristics that drew them to traditional medicine in the first place may share some characteristics that make them prone to persuasion. For example, [Gyasi et al. \(2016\)](#) discuss that consumers of traditional medicine in Ghana often justify their uptake with cultural and spiritual beliefs that go beyond modern sciences.

To estimate the effects of interventions more precisely, I use an OLS method to regress the responses on the experimental variables (NGO and frame). The ATEs are estimated with demographic covariates to reduce the noise in estimation ([Mutz, 2011](#)). Table 2 reports the results of regression by subgroup. The effects of interventions are estimated relative to the baseline. For demographic covariates—gender, education, pride as Vietnamese, past and current residence, and attachment to Northern or Southern Vietnam—I used the following as reference categories, respectively: female, less than high school degree, not proud at all, urban, attached to neither.

Figure 3 plots the effects of experimental variables by respondent groups. The results show that both preservationists and appropriators put a premium on the message coming from WWF. By contrast, only preservationists positively respond to the message of ENV at a statistically significant level. Among appropriators, the effect size of ENV is larger than WWF, which is reversed among preservationists. The potential advantage of EVN is worth exploring further because of the practical implications for advocacy NGOs operating in Vietnam and elsewhere in the Global South. If the locality of an NGO has any premium among appropriators, international NGOs may benefit from working with local organizations. The effectiveness of information sources among the mass public were not supported.

The heterogeneous effects of information sources may have to do with the perceptions that different subsets of the public have about NGOs. Appropriators who regularly take traditional medicine may trust local organizations more than international ones because of their attachment to local practices. By contrast, preservationists, whose ideas about conservation are in line with Northern conservation communities, may be familiar with WWF and its reputation given that WWF and a few other international NGOs dominate the civil society presence in global environmental governance ([Stroup and Wong, 2018](#)).

Regarding the effect of framing, the threats-and-harm and sustainability frames were effective with statistical significance only among appropriators. The pandemic frame was statistically significant among both appropriators and preservationists. Again, none of the frames had a significant result among the mass public. The effect size of the sustainability frame may be slightly larger than the other frames among appropriators, but among the mass public and preservationists, the pandemic frame indicated the largest effect size.

The results documented the heterogeneous effects of framing. As expected in H5, appropriators may see the benefit of conservation if it highlights the sustainability of traditional medicine in the future, characterizing pangolins as a natural resource rather than something to be kept intact in nature. Although the precise effects of the frames still need further investigation to obtain conclusive evidence, the results suggest the importance of targeting particular audiences

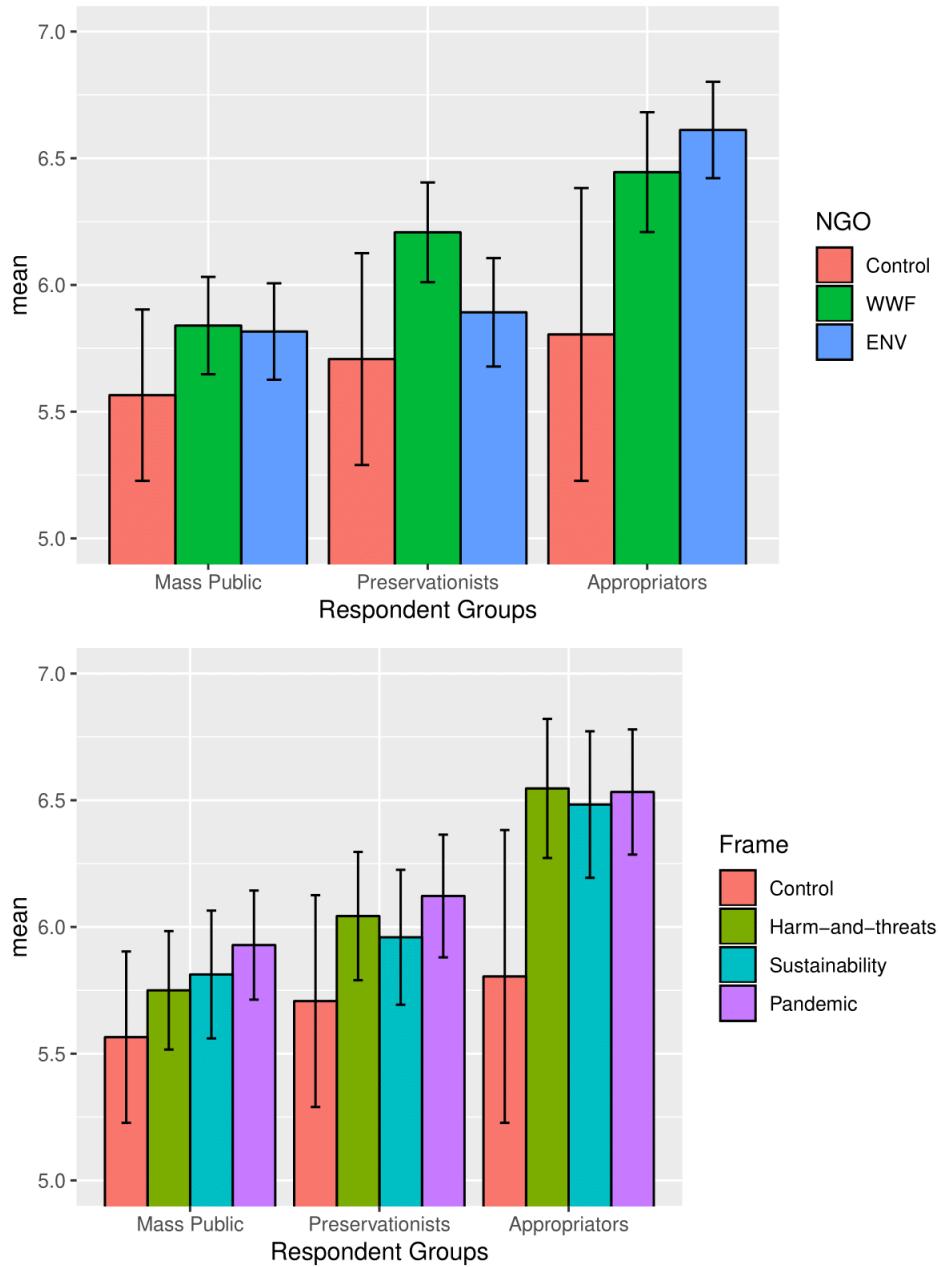


Figure 2: Average responses by subgroup with 95% confidence interval

Dependent variable: Support for pangolin conservation						
	Mass Public	Preservationists	Appropriators			
Information source (WWF)	0.285 (0.189)	0.513* (0.211)	0.661** (0.235)			
Information source (ENV)	0.279 (0.188)	0.259 (0.210)	0.834*** (0.238)			
Threats-and-harm frame	0.213 (0.198)	0.367 (0.225)	0.753** (0.252)			
Sustainability frame	0.280 (0.203)	0.340 (0.223)	0.761** (0.249)			
Pandemic frame	0.362 (0.202)	0.441* (0.223)	0.719** (0.248)			
Age	0.020** (0.007)	0.019** (0.007)	0.038*** (0.008)	0.039*** (0.008)	0.039*** (0.009)	0.039*** (0.009)
Gender (Male)	-0.216 (0.133)	-0.214 (0.133)	-0.271 (0.142)	-0.270 (0.142)	-0.013 (0.181)	-0.014 (0.180)
Gender (Other)	-0.428 (1.232)	-0.461 (1.231)	1.473 (1.939)	1.648 (1.934)		
Education (High school)	0.637 (0.424)	0.628 (0.424)	0.764 (0.548)	0.747 (0.545)	0.511 (0.620)	0.524 (0.618)
Education (University)	0.795* (0.403)	0.787 (0.403)	1.027* (0.519)	0.984 (0.515)	0.937 (0.610)	0.913 (0.607)
Education (Post-graduate)	0.689 (0.442)	0.670 (0.442)	0.979 (0.554)	0.928 (0.551)	0.762 (0.642)	0.756 (0.639)
Pride (Not very proud)	-0.731 (0.936)	-0.750 (0.936)	0.540 (1.283)	0.574 (1.280)		
Pride (Somewhat proud)	-0.742 (0.869)	-0.766 (0.869)	-0.293 (1.157)	-0.309 (1.153)		
Pride (Very proud)	-0.381 (0.857)	-0.402 (0.857)	0.146 (1.099)	0.156 (1.096)	0.984** (0.337)	0.996** (0.335)
Pride (I am not Vietnamese)	-6.204** (2.002)	-6.277** (2.002)	-6.065* (2.977)	-6.227* (2.970)		
Current residence (Rural)	-0.389 (0.206)	-0.399 (0.206)	-0.126 (0.267)	-0.130 (0.267)	-1.126** (0.346)	-1.156*** (0.345)
Past residence (Rural)	-0.240 (0.163)	-0.240 (0.163)	-0.523* (0.206)	-0.504* (0.205)	-0.114 (0.285)	-0.109 (0.282)
Past residence (Both)	-0.029 (0.197)	-0.034 (0.197)	-0.040 (0.216)	-0.053 (0.215)	-0.283 (0.221)	-0.259 (0.221)
Attachment (Northern Vietnam)	0.201 (0.424)	0.199 (0.424)	-0.544 (0.675)	-0.574 (0.673)	-0.067 (0.391)	-0.046 (0.388)
Attachment (Southern Vietnam)	0.173 (0.423)	0.170 (0.423)	-0.189 (0.675)	-0.230 (0.674)	-0.309 (0.384)	-0.280 (0.382)
Attachment (Both equally)	0.382 (0.446)	0.383 (0.446)	-0.459 (0.702)	-0.462 (0.700)		
Constant	4.678*** (1.036)	4.721*** (1.036)	3.908** (1.408)	3.946** (1.402)	2.888*** (0.787)	2.896*** (0.784)
Observations	715	715	757	757	308	308
R <sup>2</sup>	0.061	0.060	0.106	0.109	0.218	0.221
Adjusted R <sup>2</sup>	0.035	0.036	0.083	0.087	0.181	0.187
Residual Std. Error	1.686 (df = 695)	1.686 (df = 696)	1.870 (df = 737)	1.866 (df = 738)	1.273 (df = 293)	1.268 (df = 294)
F Statistic	2.372*** (df = 19; 695)	2.462*** (df = 18; 696)	4.579*** (df = 19; 737)	5.002*** (df = 18; 738)	5.847*** (df = 14; 293)	6.430*** (df = 13; 294)

Note:

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

Table 2: Results of regression analysis

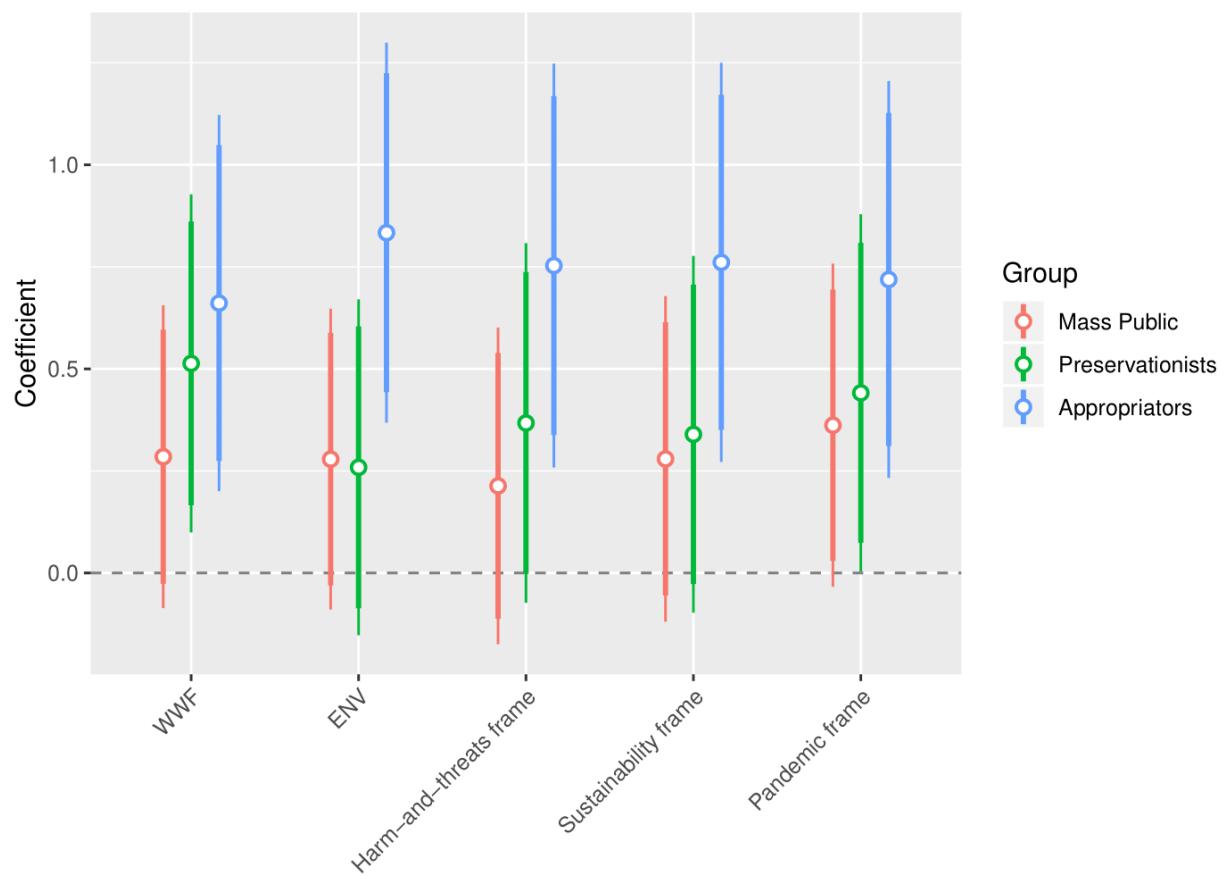


Figure 3: Coefficient plot by subgroup with 90% (thick) and 95% (thin) confidence intervals

with the frames appealing to their interest rather than adopting a one-size-fits-all approach. The effectiveness of the pandemic frame is not surprising given the personal significance of the pandemic across all subsets of the public. It is more puzzling that the mass public did not respond to the pandemic frame at a statistically significant level. The mass public's reliance on information shortcuts are well-documented ([Zaller, 1992](#)), but because this is a survey in which almost no information is required to complete, members of the mass public may have used no information rather than relying on simple cues as information sources.

Regarding the demographic covariates, the direction of the effects are generally in accordance with expectations, while statistical significance is not always present. For example, the results suggest that female and university graduates tend to give more support for reducing pangolin consumption but they are not statistically significant. Experiences of living in rural areas, both current and past, had a negative effect on conservation attitudes. This is consistent with evidence from the United States, where urban residents tend to view animals as human-like existence that deserve "caring and compassion" ([Manfredo, Teel and Henry, 2009](#): 412). More surprisingly, the effect of age was positive and statistically significant. Although pro-conservation attitude is typically associated with Inglehart's modernization ([George et al., 2016](#)), older generations in Vietnam tend to give greater support for protecting pangolins than younger generations.

## 5 Discussion

The key takeaway from this survey experiment is the heterogeneous effects of advocacy on different subsets of the public. This has an important implication for the actual practice of NGO campaigns. Local offices of international NGOs typically adopt the same kind of agendas developed by the international headquarters with limited efforts to adapt them into local contexts ([Luxon and Wong, 2017](#)). However, local contexts for certain species can be radically different in one country from another. For example, whale food remains fairly common in the Japanese society, while it is unthinkable today in restaurants in Australia and the United States. Pangolin advocacy also highlighted the difference in cultural practices between Vietnam and the Global North. Currently, civil society advocacy for pangolin conservation focuses overwhelmingly on the preservationist frame. The results suggest that consumers of traditional medicine, who are critical audience for the success of demand reduction, may be more susceptible to advocacy by domestic NGOs and slightly so to the sustainability frame.

Overall, however, my hypotheses were not well-supported by the data despite being informed by the literature on public opinion and civil society advocacy. Although members of the mass public seem to have minimized cognitive efforts in completing the survey, they did not rely on source cues, providing no support for H1. In fact, source cues were effective among preservationists and appropriators, which seem to have functioned as validating mechanisms of the advocacy message. However, the possibility that preservationists and appropriators might give different premiums to international and domestic NGO needs to be investigated further. While NGOs collaborate with one another on local conservation projects, they tend to share the country of origin. For example, an interviewee from WildAid discussed the nature of collaboration with The Nature Conservancy for their pangolin conservation campaign:

We have been working for many years with The Nature Conservancy in China. We had some previous collaboration and even some previous discussion about collabo-

ration that didn't actually result in a collaboration. Our offices were quite near each other so we often met their staff for coffee.

The tendency of Northern NGOs to collaborate among themselves is well-documented in other issue areas of governance, and its problem has been discussed in terms of marginalization of Southern NGOs (Barnett and Walker, 2015). However, North-only collaboration may also be inferior to collaboration with local groups in terms of effectiveness if appropriators have a negative perception about foreign NGOs. Some of the most powerful networks of NGOs indeed have strong global-local networks, although examples tend to be right-wing groups. Bob (2011) shows that anti-LGBTQ rights NGOs and churches in the Untied States have successfully collaborated with local groups in a wide range of countries, including Belize, Malawi, Singapore, and Romania.

The effect of the pandemic frame on the mass public supported H2 in terms of the effect size but it was not statistically significant. Given that my power analysis over-estimated the effect size and under-estimated the standard deviation of the outcome among the mass public (Appendix A), a larger sample size may allow us to draw conclusive evidence. H3 about the relationship between preservationists and the harm-and-threats frame was also not supported. Instead, the pandemic frame had the largest effect among preservationists.

There are two potential reasons for this. First, my strategy to identify preservationists may have been imprecise, including members of the mass public in this subset and making them to be more responsive to the pandemic frame (H2). If so, the lack of support for H2 may be a product of noise in observation. Second, because the experience of the pandemic is recent and personally salient, the pandemic frame in fact may have had a greater effect than the harm-and-threats frame. If so, then the question is how long the experience of the pandemic will last in our minds to the extent that the pademic frame is more effective than the conventional conservation frame. We are still in the midst of the pandemic, but the lasting effect of the pandemic on conservation advocacy is worth exploring further.

There is also a normative element to consider in the pandemic frame. While some conservation NGOs have already adopted this frame (Appendix C), there have been mischaracterization of the local practices in Asia, such as the nature of "wet markets." Although pictures of exotic animals in Asian "wet markets" were circulated after the pandemic, these are not the only commodity traded in wet markets. Customers come to the market for fresh produce, such as vegetables and fish, but some markets also sell exotic species.<sup>5</sup> The critical studies of conservation has already noted the othering and stereotyping of non-white populations in conservation projects (Margulies, Wong and Duffy, 2019; Neumann, 2004), and the pandemic frame has a potential to exacerbate such prejudice.

The results offer suggestive evidence for H5 about the effect of sustainability frame on appropriators, but the negative effect of the harm-and-threats frame (H4) on the same group of people was rejected. This is a good news for conservation NGOs already working in the Global South, which rely predominantly on this frame. Even if the harm-and-threats frame is less effective than the other two frames, it is unlikely to automatically induce backlash from local populations and indeed helps to improve conservation attitudes.

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<sup>5</sup><https://www.cnn.com/2020/04/14/asia/china-wet-market-coronavirus-intl-hnk/index.html> (Accessed: June 1, 2021).

The question is then under what conditions environmental advocacy induces backlash from local populations. The examples of local backlash is not uncommon in environmental advocacy in both developing and developed countries (Blok, 2008; Fuentes-George, 2016). Given that this survey provided an advocacy message only from conservation NGOs, for local backlash to occur, active advocacy and mobilization effort by the other side of the debate may be necessary. For example, Bob (2011) finds that Northern right-wing NGOs and religious groups mobilize local populations in order to stop progressive policy being introduced to developing countries. In pangolin conservation, such explicit counter-mobilization has been minimal with the Chinese government being generally cooperative to international regulatory efforts. However, once pro-traditional medicine or anti-conservation groups start advocating for de-regulations, local populations may take cues from those groups, which would create a quite different political landscape for local conservation projects.

## 6 Conclusion

Civil society advocacy for threatened species plays an important role in local conservation projects, in which local populations may not be aware of the threats facing the wildlife they consume. Focusing on the interest heterogeneity of the local public, I experimentally tested differential effects of an advocacy message about pangolin conservation in Vietnam. Surprisingly, the effect of advocacy was the largest among appropriators who regularly consume traditional medicine, followed by preservationists who value nature and wildlife for moral or ecological reasons. No significant effect was observed among the inattentive, mass public. The heterogeneous effects documented in my analysis shed new light on how NGOs can deploy effective advocacy campaigns in local environmental projects.

First, the literature on transnational advocacy organizations has repeatedly emphasized the importance of accountability mechanisms for NGOs to improve the quality of civil society participation in local and global governance (Balboa, 2014; Cooley and Ron, 2002; Gent et al., 2015; Prakash and Gugerty, 2010; Scholte, 2004). However, the presence of heterogeneous effects of advocacy raises a question of whether the failure of NGOs in local projects is indeed caused by agency slack, in which accountability mechanisms are deemed as the only direct solution. If NGO failures are driven by the inability to identify key audiences of advocacy, accountability mechanisms, such as financial transparency and program evaluations, would not directly improve how NGOs operate in local governance. Instead, additional accountability requirements impose administrative costs that most small NGOs cannot afford (Stroup and Wong, 2017), potentially hindering the entrepreneurship of civil society as a whole.

Second, and more practically, NGOs may benefit from evaluating the effect of their advocacy campaigns on different subsets of the public. Recently, an increasing number of NGOs have adopted “A/B testing” (*i.e.* a randomized experiment) to evaluate the effect of communications with their members (Hall, Schmitz and Dedmon, 2020), but it is used primarily for donor marketing and gauging members’ involvement with their own programs. NGOs lack incentives to conduct population-based tests of their programs because they can use simple measures like the view count of campaign ads as evidence of “good” work to their donors and supporters. This is a problem of organizational culture among NGOs, in which any extra money is spent on their programs and activities in an attempt to maximize their impact. Again, accountability mecha-

nisms would not be helpful here because using extra money on programs instead of evaluation is completely justifiable from the perspective of finance and accounting ([Coupet and Berrett, 2019](#)).

Finally, the interest heterogeneity of the local public has broader implications for environmental governance beyond pangolin and wildlife conservation. From fossil fuel to lumber to ducks, ideological disagreements between resource appropriators and nature preservationists have developed political cleavage that is extremely difficult to reconcile. Despite such divisiveness, the study of environmental advocacy has not explicitly considered the interest heterogeneity of the public with the exception of partisanship, which is a proximal measure of such heterogeneity at best ([Greenhill, 2020](#); [Guisinger and Saunders, 2017](#); [Moyer-Gusé, Tchernev and Walther-Martin, 2019](#)). However, not all environmental issues are politically salient enough to have partisan effects—they may be new issues for which parties have little guidance to voters. My analysis has shown the possibility that a compromise *might be* possible between the groups of different interests. Future research may want to explore this possibility in different issues and countries to evaluate how far interest heterogeneity matters in environmental advocacy relative to other factors such as partisanship and political institutions.

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## A Power analysis

There is no existing data I can leverage for the power analysis of this survey; instead, this power analysis was based on assumptions. Assuming that the standard variation of the dependent variable will be 1 ( $\sigma=1$ ) and the effect size will be 0.4 ( $\beta=0.4$ ), roughly 200 individuals as the total number of observations ( $N=200$ ) would allow me detect the effect with 95% confidence (Figure A).<sup>6</sup> In other words, if there are 200 individuals for each of the preservationist and appropriator groups, the effect will be detected with significance. The mass public, which I expect to be 1000+ individuals, will easily pass the statistical test if the effect is indeed present. Future research will be able to use my study to conduct power analysis and reliably estimate an appropriate sample size to block subgroups (preservationists and appropriators) in experimental designs.

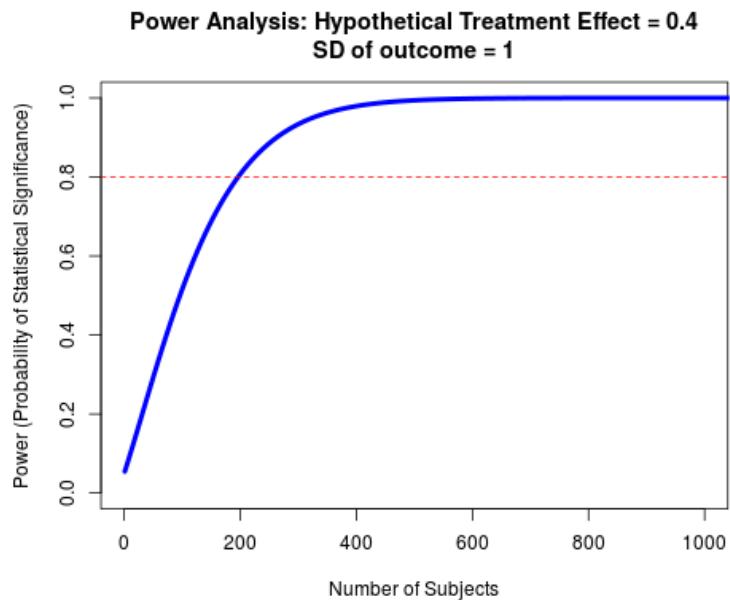


Figure 4: Power analysis

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<sup>6</sup>When the subgroup is divided into two groups, i.e. treatment and control groups.

## B WWF's save the pangolins campaign



Figure 5: Screenshots of WWF's campaign ad

## C Wildlife Conservation Society's anti-wildlife trade campaign

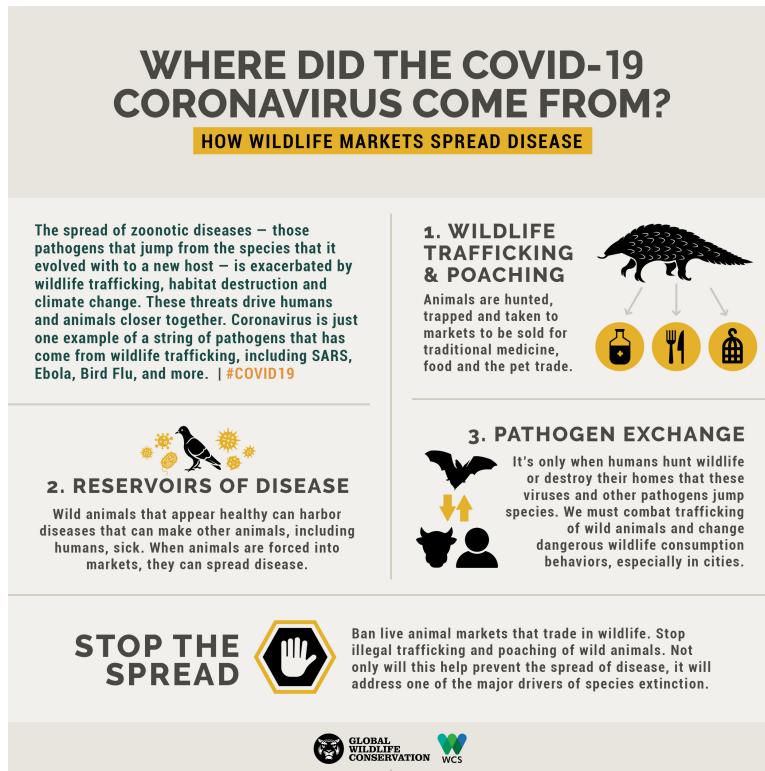
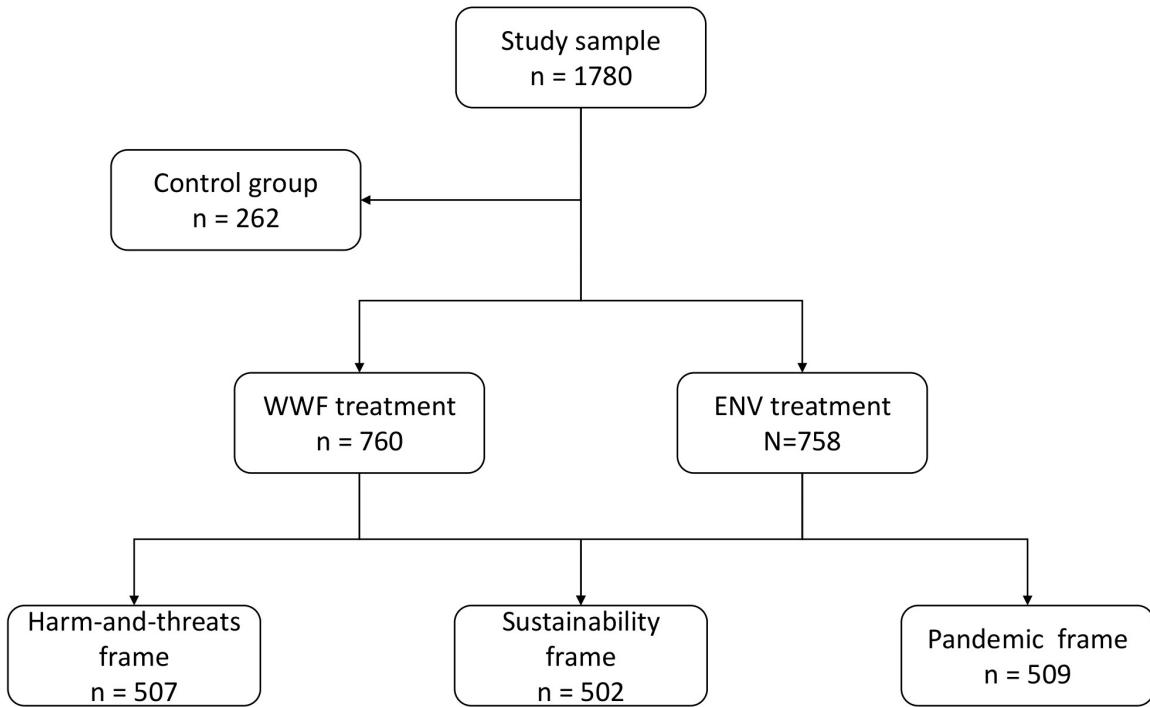


Figure 6: Wildlife Conservation Society's campaign ad on March 10, 2020

## D Randomization design



## E Comparison of baseline by subgroups

	Mean (NGO, frame)	Mass Public	Preservationists	Appropriators
Mass Public	5.56, 5.57	N/A	0.1836	0.05029
Preservationists	5.80, 5.71	0.1836	N/A	0.996
Appropriators	5.71, 5.80	0.05029	0.996	N/A

Table 3: Reported p-values in Wilcoxon rank sum tests