Institutional Design and Elite Support for Climate Policies: Evidence from Latin American Countries*

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Abstract

Which institutional features do Latin American elites favor for climate change policies? Climate change mitigation requires global scale governance, but it remains unclear which institutional arrangements maximize the support for environmental agreements. In this paper, we run a conjoint experiment with elite members of 10 Latin American countries and ask respondents to evaluate institutional designs drawn from a pool of 5,500 possible climate change treaties. We find that Latin American elites prefer international organizations to formulate climate policies, support imposing increasing fines on violators, and favor renewing agreements every five years. We also find that elites support both international institutions and local courts to mediate conflicts, but they distrust non-governmental organizations and reject informal norms as an means of conflict resolution. Our results identify possible challenges in crafting climate mitigation policies and offer new insights about how to integrate local and international levels in environmental agreements.

Keywords: climate change, institutional design, elites, Latin America, regime complex

Word count: 3839

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1 Introduction

Despite the emerging consensus about the causes and consequences of global warming, international climate summits have often fallen short of expectations (Rogelj et al. 2010; Rosen 2015; Victor et al. 2017). Multilateral negotiations have progressed slowly under the guidelines of the United Nations Framework Convention on Climate Change (UNFCCC), and there is widespread skepticism that international talks will advance more quickly in the coming years (Cole 2015; Hjerpe and Nasiritousi 2015). As carbon dioxide emissions continue to increase, scientists believe current efforts may not be sufficient to meet the target of 2°C temperature rise above pre-industrial levels (Jordan et al. 2015).

These concerns have motivated a growing debate about which institutional characteristics lead to successful climate agreements (e.g., Bechtel and Scheve 2013; Bechtel et al. 2017; Keohane and Victor 2011; Mitchell 2006; Ostrom 2014). Climate treaties are incomplete contracts, in which members purposefully design flexible provisions that take domestic circumstances into account (Bräuninger and König 2000, 607). For instance, the Paris Agreement relies on Nationally Determined Contributions (NDCs), a set of greenhouse gas reduction targets each member state voluntarily pledges to achieve (Winning et al. 2019). This decentralization increases the importance of national stakeholders in climate negotiations, and studies have shown that the behavior of elite groups – specially that of advocacy coalitions and political networks – largely explain countries' climate policy performance (Jahn 2016; Karapin 2012). Elites can advance or constrain climate agreements using 'societal steering' strategies such as capacity building and rule setting, thus acting as *de facto* veto players in local environmental policies (Andonova et al. 2009; Bulkeley et al. 2014).

Although research on public opinion and climate agreements has increased significantly in the last years (e.g., Aklin et al. 2013; Bechtel and Scheve 2013; Bechtel et al. 2017; Mildenberger and Tingley 2017), elite preferences are not well documented in the literature. This is a significant omission considering that recent work has stressed the impact of elite coalitions in areas such as global finance and international banking regulation (e.g, Chalmers 2017; Pagliari and Young 2014). Elites in developing countries are specially understudied, despite the fact that emerging economies account for 63% of the world's carbon emissions (Busch 2015). It is unclear which climate strategies face lower internal resistance from these groups, or whether their environmental preferences are fundamentally different from those of their developed countries counterparts (Aklin et al. 2013, 28).

We help remedy this gap by assessing which climate change governance systems Latin American elites are willing to support. In our survey experiment, we asked 654 respondents – academics, members of the executive power, legislators, businesspeople and members of non-governmental organizations – to select their preferred agreement among 7 repetitions of binary choices. We vary the agreements across six dimensions commonly debated in the climate change and institutional design literatures: rule-making capabilities (Dubash et al. 2013; Massey et al. 2014); conflict resolution mechanisms (Huntjens et al. 2012; Ostrom 2014); enforcement methods (Barrett 2008); punishment for repeated violators (Ostrom 1990); cost sharing (Bechtel and Scheve 2013); and agreement duration (Copelovitch and Putnam 2014; Marcoux 2009). Variations in any of those features can substantially change the outcomes of climate institutions (Bodin 2017; Ostrom 2014).

We find that interviewees prefer international organizations to design climate policies and are favorable to imposing increasing fines on violators and renewing agreements every five years. Survey participants also want both international institutions and local courts to mediate conflicts, but they are skeptical about non-governmental organizations and consistently reject informal norms as an instrument to solve disputes. The results lend support to theories that define climate governance as a 'regime complex' (Colgan et al. 2012; Keohane and Victor 2011), that is, 'an array of partially overlapping and non-hierarchical institutions govern a particular issue area' (Raustiala and Victor 2004, 279). Our findings suggest that Latin American elites embrace the complexity of climate policy and believe mitigation policies should incorporate several layers of governance simultaneously.

This article contributes to three strands of the literature. First, we add experimental evidence to studies on institutional design. Our results confirm previous research that stresses the importance of institutional features on support for climate change policies (Aklin et al. 2013; Bechtel and Scheve 2013; Bechtel et al. 2017). We show that institutional support varies markedly according to elite type and country of origin, and that this heterogeneity has an important impact on collective choice and preference aggregation. In particular, we find that climate negotiations may not have a clear Condorcet winner.

Second, we contribute to classical theories on international regimes. Abbott and Snidal (2000) introduce the idea of hard versus soft international law to explain why actors pursue a variety of legal agreements to foster their interests in the international realm. Mildenberger and Tingley (2017) and Rosendorff and Milner (2001) posit that when compliance is hard to observe, incomplete contracts

are superior as they avoid unnecessary punishments and improve long-run cooperation stability. Keohane and Victor (2011), in turn, argue that non-hierarchical international rulings help states to avoid gridlocks by reducing contracting costs and embracing 'problem diversity', in which each particular climate problem requires a specific solution. Our results confirm that flexible regime designs are decisive to foster international cooperation.

Finally, we also present novel information on Latin American elite behavior regarding climate institutions. Our findings indicate that elites in Latin America favor agreements that do not fit into the broad categories of 'centralization' or 'polycentrism'; instead, they prefer a combination of the two. The results are consistent with the Latin American tradition of heavier reliance on the state than on self-governed solutions, but local elites also believe that both international and local-level institutions should engage in climate policy design. The data provide new insights on how Latin American policy-makers can form domestic coalitions and which climate mitigation agreement faces lower resistance from potential veto players (Beiser-McGrath and Bernauer 2019; Hovi et al. 2019).

2 Data and Methods

We use conjoint experiments to estimate the effect of institutional features on climate mitigation agreements. A conjoint experiment is a statistical technique that allows individuals to express their preferences on multiple attributes of a single topic (Bansak et al. 2016; Hainmueller et al. 2014). Individuals are presented with two hypothetical scenarios, each containing a randomly assigned series of characteristics a researcher wants to evaluate. The individual selects one of them. As the attributes are randomized, we can estimate how individuals value each of the conjoined elements.

We focus on Latin American elites for three reasons. First, elites have an important impact on public decisions, as they are often closer to the policy-making process. Second, Latin American countries are in a region where extreme weather events are likely to produce substantial damages. According to Eckstein et al. (2017), Central America alone has four countries in the top ten most affected by extreme weather events. Lastly, Latin America is the most biodiverse region in the world and plays a major role in global climate mitigation projects. For instance, the Amazon basin contains about half of the world's carbon stock, so local elites are essential for the success of emissions trading markets (Benítez and Obersteiner 2006; Yang et al. 2018).

We use a dataset compiled specifically for this study. From October 1 to December 5, 2018, we ran an elite survey with respondents from Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Panama and Peru. We started by gathering information on potential interviewees. For each country, we collected the profiles of 100 members of the Executive, 100 members of the Legislative, 150 academics in the energy sector and 150 members of the civil society. We then sampled these profiles until we achieved a minimum of 10% of responses within each group. We ran our survey both online and by telephone, collecting information on the climate change agreements and other related questions in a non-intrusive manner (Loewen et al. 2010). We had two teams of enumerators, one based in São Paulo and another based in Rio de Janeiro, Brazil, comprised of Portuguese and Spanish native speakers. Please refer to the Supplementary Material for more information about the sampling process and descriptive statistics.

The hypothetical climate change agreements include six attributes: 1) which organizations defines the rules; 2) how would conflicts be resolved; 3) what punishment should be applied to rule-breakers; 4) how should repeated violations be sanctioned; 5) which countries should bear the costs of the agreement; 6) how often should the agreement be renegotiated. Table 1 describes the values we included in each treaty attribute.

Table 1: **Attributes and values for climate change mitigation conjoint experiments**

Attribute	**Values**
Who makes the rules?	International organizations; federal government; local government; local community members; non-governmental organizations
Conflict resolution mechanism	United Nations; government bureaucracy; local courts; private arbitration; informal norms
Punishment	Imprisonment; fines; blacklist; none
Punishment for repeated violations	More penalty; same; less penalty
Agreement costs	Rich countries pay more than poor countries; proportional to history of emissions; proportional to current emissions; only rich countries pay
Renegotiation	Never; fifty years; twenty years; five years; one year

We give no prior indication of whether a certain value is more prevalent in actual agreements to elicit truthful responses from the interviewees. We also randomize the values to ensure that they all

have the same probability of being selected. In total, there are 5,500 possible value combinations. Figure 1 illustrates how a typical conjoint element appeared in the respondents' screen.

Figure 1: **Example of conjoint table presented to respondents**

We estimate our models with the `cregg` package (Leeper 2018) for the `R` statistical language (R Core Team 2018). Here we report marginal means instead of average marginal conditional effects (AMCE) of climate agreement attributes. Leeper et al. (2018) show that AMCEs can be misleading in subgroup analysis as model results are sensitive to the choice of reference categories in interactions. In contrast, marginal means provide a clear description of quantities of interest, in our case preferences towards agreement attributes, while allowing for easy comparisons between groups of respondents. Their interpretation is also straightforward: a 50% marginal means estimate represents that respondents are indifferent when this attribute appears vis-à-vis other attributes. When the coefficient is lower than 50%, respondents dislike packages with this attribute. Conversely, when the point estimate is higher than 50%, respondents prefer packages containing a given attribute. Readers can refer to the Supplementary Material for AMCE estimates.

3 Results

Figure 2 shows our main results. The graph illustrates the preference associated with each attribute of hypothetical climate mitigation agreements. Dots with horizontal bars represent point estimates

and 95% confidence intervals from linear regressions with robust standard errors clustered at the respondent level.

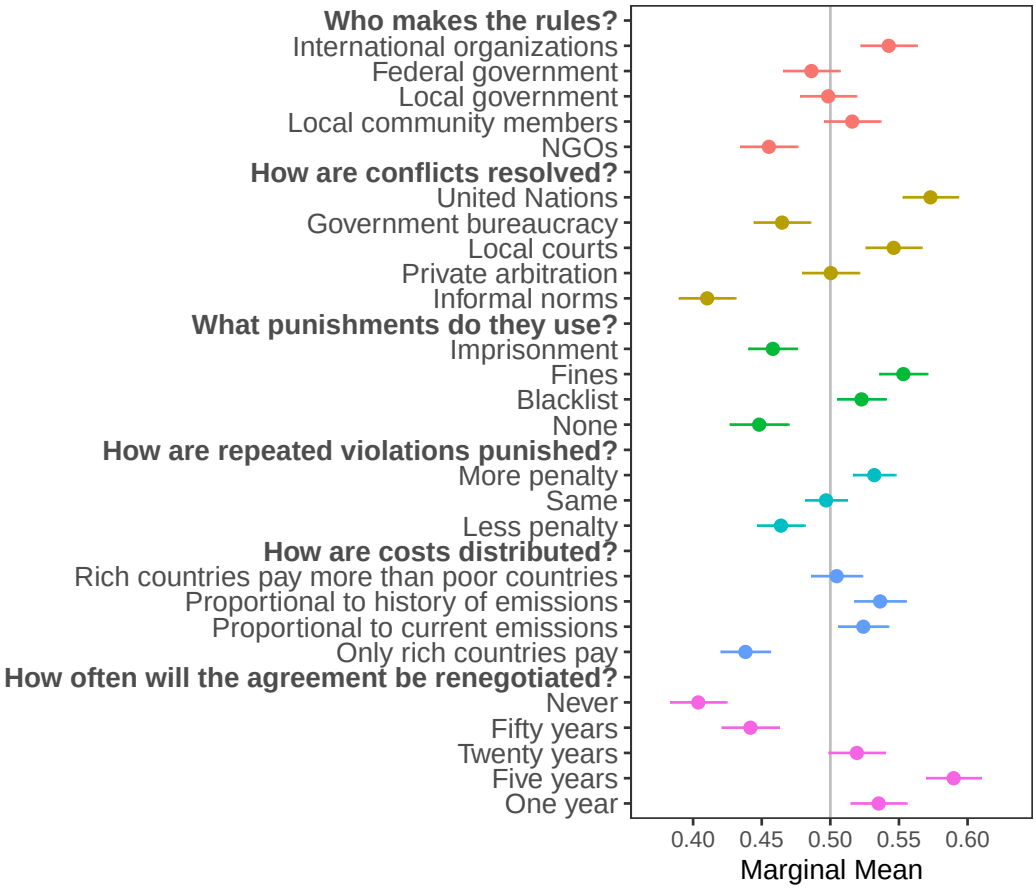

Figure 2: **Effect of institutional attributes on the probability of support for climate change agreements in 10 Latin American countries (pooled data)**

Respondents prefer international organizations to establish climate mitigation rules (54%, SE = 1.2), but they also hold favorable views of local communities (51.6%, SE = 1.25). We note that Latin American elites support multiple governance levels simultaneously, which suggests that they are willing to include separate political spheres into a single climate policy design. Local governments (49.8%, SE = 1.2) and federal governments (48.6%, SE = 1.3) receive slightly more support than the other alternatives, yet the difference between them is not statistically significant. Non-governmental organizations are the least preferred option for climate change rule-making with 45.5% (SE = 1.3).

We see a similar pattern with respect to conflict resolution. Respondents affirm disputes should be addressed mainly by the United Nations and local courts. These two choices have 57.3% (SE = 1.2) and 54.6% (SE = 1.2) approval, respectively. Private arbitration comes next with 50% (SE = 1.3).

Government bureaucracy and informal norms lower the chance of selecting a climate agreement, with 46.4% (SE = 1.3) and 41% (SE = 1.3) of support.

Participants agree with graduated sanctions to repeated offenders (53.2%, SE = 0.9) and they believe agreement costs should be allocated according to the country's history of emissions (53.6%, SE = 1.1). Moreover, related to the same idea of proportionality, respondents indicate that lawbreakers should be punished with fines (55.3%, SE = 1.1), which can be increased if necessary. This is in line with the literature arguing that climate change agreements present a middle ground between rigidity and flexibility to accommodate domestic demands and increase national compliance (Von Stein 2008).

Elites believe that Latin American countries should contribute to the provision of global public goods. We find no evidence that respondents intend to free ride on climate agreements, as they position themselves against the idea that rich nations should bear the costs of climate protection. This is conductive to long-term cooperation as placing the burden exclusively on rich countries is likely to be off the equilibrium path and would, presumably, not lead to a stable arrangement.

Regarding agreement duration, respondents are interested in a balance between stability and flexibility. Interviewees reject agreements that either cannot be modified or that last for 50 years. Their preference lies in agreements that can be renegotiated every five years (59%, SE = 1.2). This is consistent with a concern that agreements should be durable enough to provide long-term incentives to the parties, yet remain adaptable to unforeseen demands.

Overall, the results do not conform to strictly top-down or bottom-up approaches, but to a combination of these attributes. While elites favor solutions provided at the macro level, they are also open to input from other government actors and local groups. Further, the rejection on non-governmental organizations points to a discredit of self-governing arrangements as a means to deal with global warming. This result is in line with Latin America's long reliance on the state to design and implement policies.

We also examine how our results vary across countries and types of elites. Figure 3 displays the preferred climate change agreement characteristics for each of the 10 countries in our sample. The disaggregated data confirm that elites have a generalized preference for international agencies to solve conflicts, and they dislike informal norms. In addition, the cross-country results show a preference for a positive role by federal and local governments, and that local community members should also participate in the deliberation process.

Figure 3: **Effect of institutional attributes on the probability of support for climate change agreement by country**

However, some of the regional preferences are a by-product of sample aggregation. Latin American elites do not have a consensus on which organizations should provide the rules. For example, elites in Costa Rica prefer local to global rule-making; in Mexico, they prefer global and dislike local, similar to Peru, Argentina and Brazil; in Colombia, elites favor global and local rule-making simultaneously; and

in Bolivia, respondents prefer local organizations to design climate treaties. This is an important point and might have far-reaching consequences for environmental policy design. The lack of coordination on rule-making responsibilities can give rise to decision cycles, lowering the chance of a Condorcet winner. Nevertheless, these dissensions might be resolved by decentralization, boosting the idea that flexible regime complexes, such as polycentric governance schemes, might provide a solution to gridlocks.

Figure 4 shows the results disaggregated by elite type. Academics, members of the civil society and representatives in the executive and legislative branches hold similar views about how conflicts should be resolved, what punishment to apply to lawbreakers (fines and blacklisting) and the duration of the agreements.

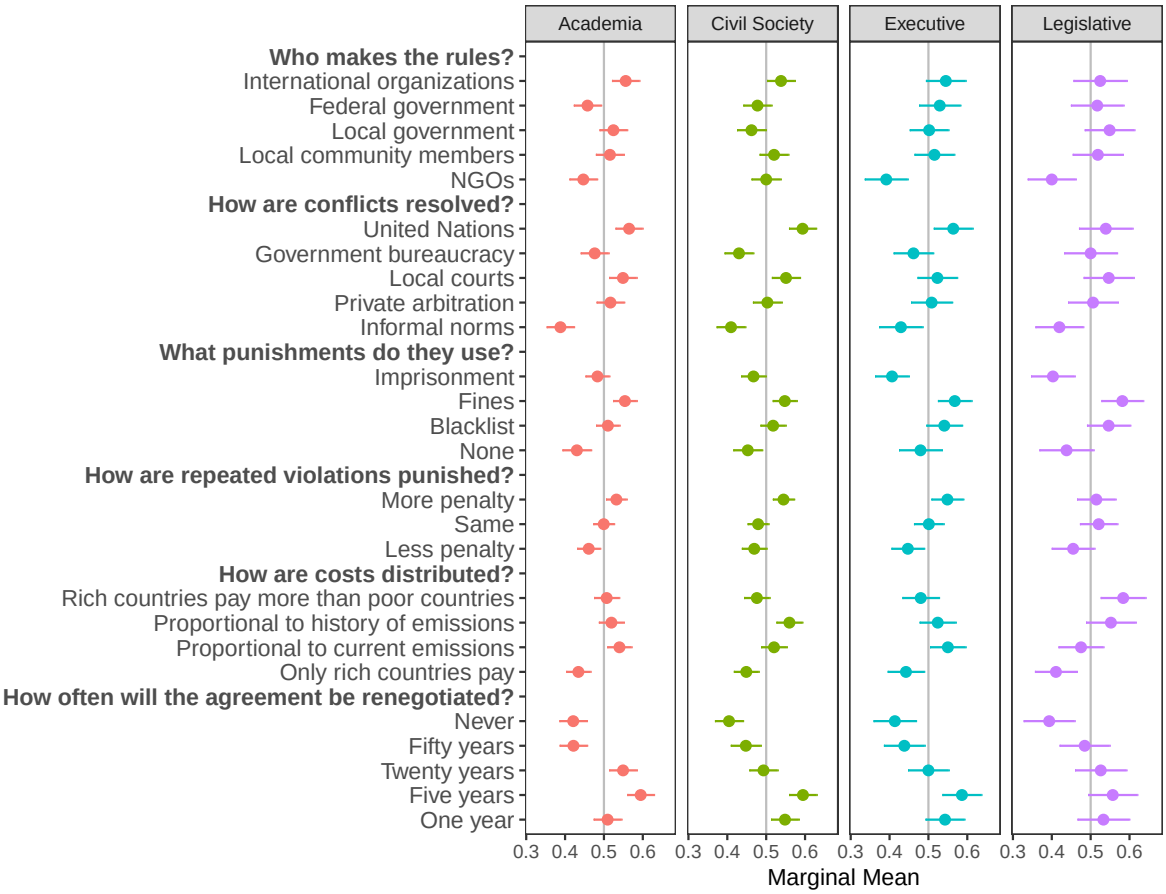

Figure 4: **Effect of institutional attributes on the probability of support for climate change agreement by elite type**

Differences emerge in two of the six attributes. Academics and members of the civil society are skeptical about the role of federal government in climate policy-making, while members of the executive and legislative — part of the government themselves — have a more positive view of national institutions. The differences, however, are not large. Second, members of the legislative prefer rich

countries to bear the larger part of agreement costs (58.4%, SE = 3.5). This provides evidence for the idea of historical responsibility for climate protection, an argument which developing countries have recently brought to climate negotiations (Müller et al. 2009; Friman and Hjerpe 2015).

4 Discussion

In this article, we examine which attributes of climate change mitigation treaties Latin American elites support. We find that interviewees prefer international organizations to resolve conflicts, are favorable to imposing increasing fines on violators and renewing agreements every five years. Survey participants also signal their distrust of non-governmental organizations and informal norms. Taken together, our evidence suggests that Latin American elites oppose non-governmental organizations as rule-makers and want legal punishment to agreement violators.

While our results confirm that Latin Americans prefer the state to conduct public policy, they do not match the typical dichotomy of hierarchical versus decentralized climate change regimes. After disaggregating the data by country and elite type, we confirm that elites prefer international organizations to resolve disputes and that federal and local sources of governance should have a say in climate agreements. However, we find large heterogeneity in the responses, with groups holding different opinions on how competences should be divided.

Our results have several theoretical and practical implications. The findings we present here suggest there is considerable scope for new studies on global governance, specially in underrepresented regions. Our analysis can be extended to examine if the Latin American public has the same opinion on multilevel arrangements as do the elites; and if not, it would be important to know what explains the mismatch between groups (Luna and Zechmeister 2005). Moreover, future work may address whether elites in other regions also understand climate policy as a regime complex, in which different actors play a constructive yet decentralised role in policy-making.

With regards to environmental policies, we identify that Latin American elites are interested in incorporating different political actors and in strengthening the role of international organizations in climate governance. Building on these insights, our study provides novel information to policy-makers, as it evaluates which climate agreements are politically acceptable to Latin American elites. Future climate negotiations can achieve better results if they take those preferences into account.

Supplementary Material

For supplementary material for this article, please visit http://github.com/danilofreire/climate-governance.

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