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

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14 July 2019

Abstract

Climate change mitigation requires global scale governance. In contrast, it remains unclear which institutional arrangements maximise the support for collective environmental policies. In this paper, we run a conjoint experiment with elite members of 10 Latin American countries and ask respondents to evaluate institutional designs randomly drawn from a pool of 6,000 possible climate change agreements. We find that institutional features have a substantial effect on support for climate change mitigation treaties. In general, Latin American elites prefer multilevel solutions with flexible punishment schemes to tackle global warming, but there is considerable heterogeneity across countries and elite types. Our results identify possible challenges in crafting regional climate mitigation policies and offer new insights about how to integrate interventions at the local and international levels.

Keywords: climate change, institutional design, elites, Latin America, conjoint experiment

Word count: XXXX

*We thank Nigel Ashford, Fábio Barros, Daniel D'Amico, Malte Hendricks, Christian Hübner, Karina Marzano, Emily Skarbek, and Matias Spektor for helpful and engaging feedback. This research received IRB approval from Brown University (protocol 2195/2018) and Fundação Getúlio Vargas (protocol 83/2018). The authors acknowledge financial support from the Konrad Adenauer Stiftung Latin American Regional Programme for Energy Security and Climate (EKLA-KAS). The authors declare there are no conflicts of interest. The data, code, and any additional materials required to replicate all analyses in this article are available at http://github.com/danilofreire/climate-governance.

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1 Introduction

Over the last years, we have seen an emerging consensus about the causes and consequences of anthropogenic climate change. Despite some variation in climate risk beliefs, mostly due to cultural worldviews and political orientation (Hornsey et al. 2016), recent surveys show that the public is increasingly aware of the dangers of greenhouse gas emissions. For example, 59% of Americans are sure the Earth's temperature is increasing (De Witte 2018); 74% of European Union citizens consider global warming a 'very serious problem' (European Commission 2018); and 90% of Brazilians believe climate change is already harming people around the world (Wike 2018).

Yet this consensus does not automatically translate itself into effective political action. Global climate negotiations have progressed slowly under the guidelines of the United Nations Framework Convention on Climate Change (UNFCCC), and there is wide scepticism that multilateral talks will move faster in the next years (Cole 2015; Hjerpe and Nasiritousi 2015). As carbon dioxide emissions continue to increase, current efforts may not be sufficient to meet the target of 2°C temperature rise above pre-industrial levels (Jordan et al. 2015).

In this scenario, there has been a growing discussion about the desirable features for successful climate change agreements (Bechtel and Scheve 2013; Bechtel et al. 2017; Keohane and Victor 2011). 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 voluntary pledge to achieve. This decentralisation of competences increases the weight of national stakeholders in climate negotiations, and it largely explains countries' climate policy performance (Bernauer and Böhmelt 2013). Although there is extensive research on the public opinion on global warming in developed economies (Bechtel and Scheve 2013; Bechtel et al. 2017; Beiser-McGrath and Bernauer 2019; Buntaine and Prather 2018; Mildenberger and Tingley 2017), less is known about other key players in climate policy-making: elites in developing countries.

Here we 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 organisations – 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 potential outcomes of climate institutions (Bodin 2017; Ostrom 2014).

We find that interviewees prefer international organisations to resolve conflicts, are favourable to imposing increasing fines on violators and renewing agreements every five years. Survey participants are sceptical about non-governmental organisations and consistently reject informal norms as an instrument to solve disputes. The results lend support to theories that define climate governance as a loose 'regime complex' instead of a cohesive, integrated institution (Abbott 2012; Colgan et al. 2012; De Búrca et al. 2014; Keohane and Victor 2011). A regime complex is one characterised by 'an array of partially overlapping and non-hierarchical institutions governing a particular issue area' (Raustiala and Victor 2004, 279). Our findings suggest that Latin American elites embrace the complexity of climate policy and believe that regime should incorporate several layers of governance simultaneously.

This article contributes to three strands of the literature. First, we add experimental evidence to the literature on institutional design. Our results confirm previous studies that stress the importance of institutional features on support for climate change policies 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.

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) add to this view by positing that the superiority of soft, incomplete contracts is due to observability issues: when compliance is hard to observe, incompleteness is superior than rigid contracts as it avoids unnecessary punishments and improve the 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. In this sense, institutional features should be adapted to the issue at hand, and flexible regime designs are decisive to foster international cooperation.

Finally, we also present novel information on Latin American elite behaviour regarding climate institutions. Our findings indicate that elites in Latin America favour institutions that do not fit into the broad categories of 'centralised' or 'polycentric' arrangements, but they rather opt for a balance between the two. Our results are consistent with the Latin American tradition of heavier reliance on the state than on self-governed solutions, but we identify that 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. 2017).

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 (Hainmueller et al. 2014; Bansak et al. 2016). Individuals are presented with 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 randomised and individuals choose between different pairs of hypothetical scenarios, we can estimate how individuals value each of the conjoined elements.

We focus on Latin American Elites for three reasons. First, elites have a decisive impact on public decisions, as they are 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 1st of October to 5th of December 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 Latin American elites. 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. 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 organisation 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 organisations; federal government; local government; local community members; non-governmental organisations
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 randomise the values to ensure that they all have the same probability of being selected. In total, there are 6,000 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 appear 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.

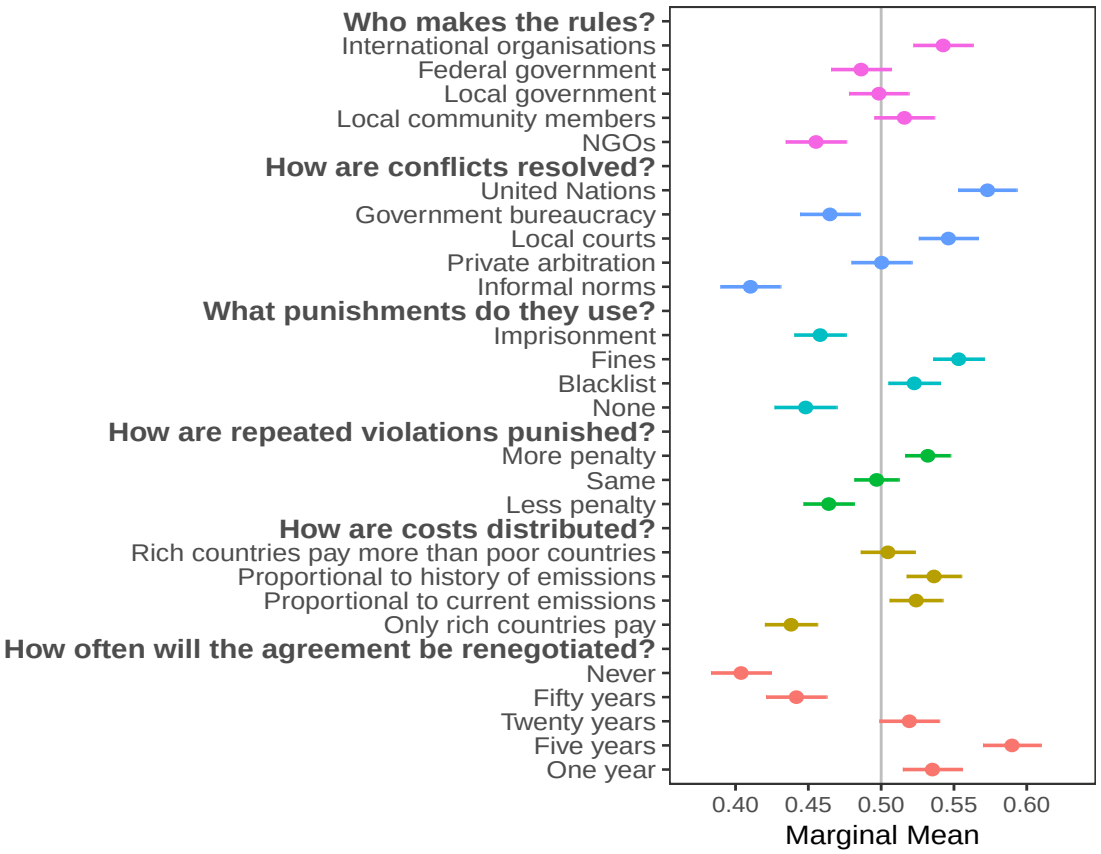

Figure 2: **Effect of institutional attributes on the probability of support for climate change agreements in 10 Latin American countries (pooled data)**

Respondents prefer international organisations to establish climate mitigation rules (54%, SE = 1.2), but they also hold favourable 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 state 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 organisations 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, respectively.

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 easily 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 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 favour 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 organisations points to a discredit of self-governing arrangements as a means to deal with global warming. This last result is consistent with the Latin American tradition of heavier reliance on the state than on voluntary organisations.

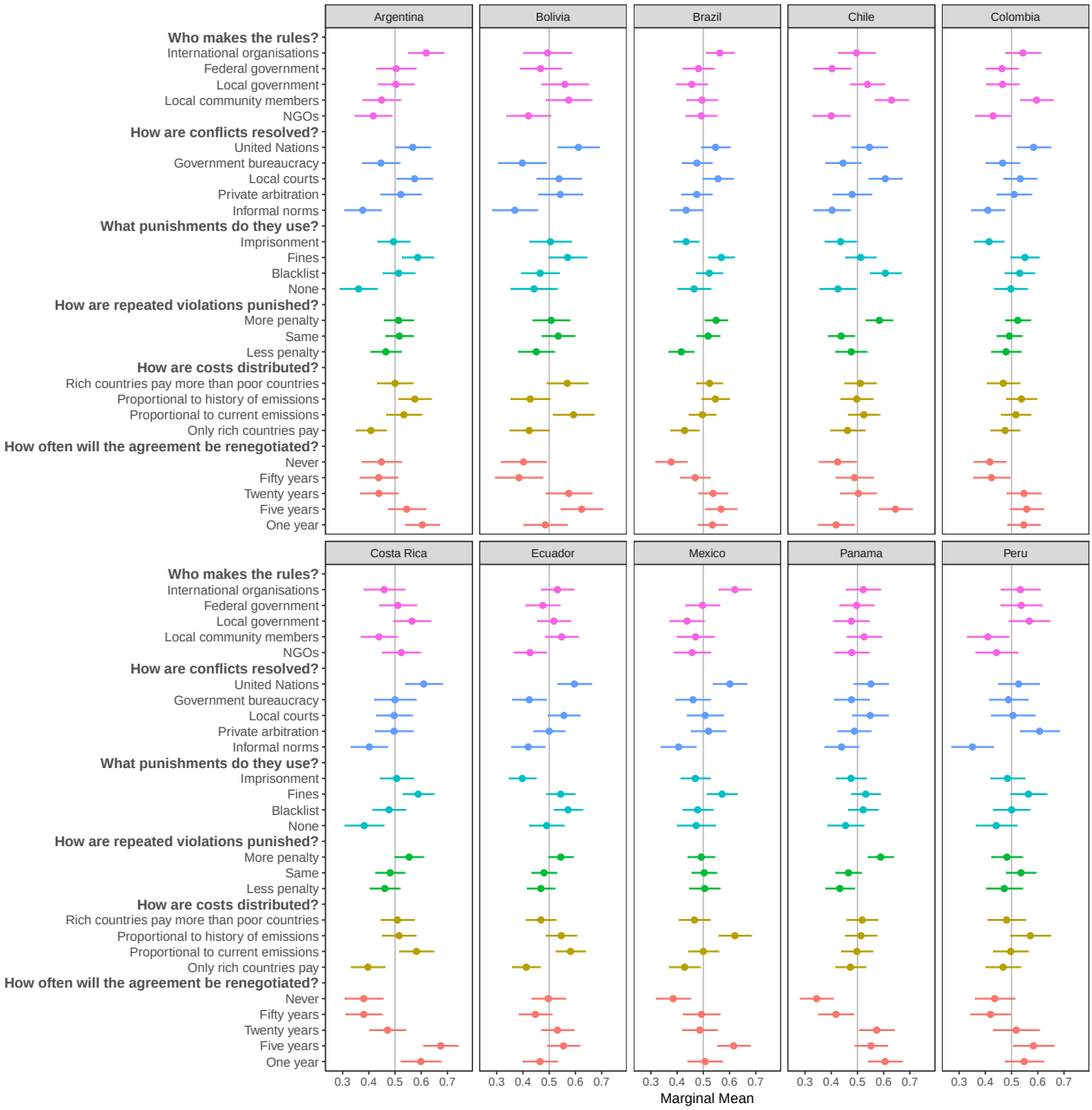

Figure 3: **Effect of institutional attributes on the probability of support for climate change agreement by country**

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 generalised 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.

However, some of the regional preferences are a by-product of sample aggregation. Latin American elites do not have a consensus on which organisations 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 favour global and local rule-making simultaneously; and in Bolivia, respondents prefer local organisations to design climate treaties. This is an important point and has far-reaching consequences for policy design in the region. The lack of coordination on rule-making responsibilities can make decisions to cycle, lowering the chance of a Condorcet-winner agreement. Nevertheless, these dissensions can be resolved by decentralisation, boosting the idea that flexible regime complexes, such as polycentric governance schemes, may provide a solution to potential 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.

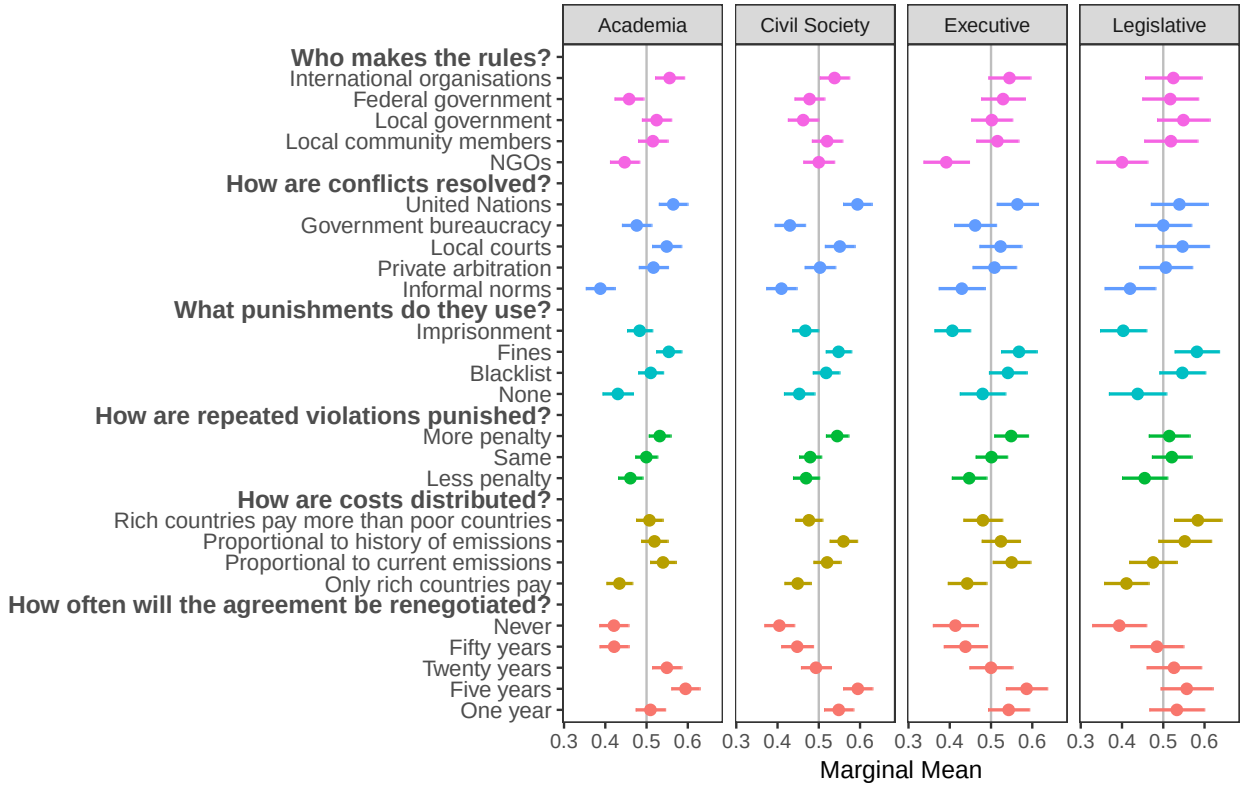

Figure 4: **Effect of institutional attributes on the probability of support for climate change agreement by elite type**

Significant differences emerge in two of the six attributes of interest.

4 Discussion

In this article, we examine which attributes of climate change mitigation treaties Latin American elites support. We find that interviewees prefer international organisations to resolve conflicts, are favourable to imposing increasing fines on violators and renewing agreements every five years. Survey participants are sceptical about non-governmental organisations and consistently reject informal norms as an instrument to solve disputes. Taken together, our evidence suggests that Latin American elites oppose non-governmental organisations 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 cases of centralised or polycentric climate change regimes suggested in the literature. After disaggregating the data by country and elite type, we confirm that elites prefer international organisations 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 important 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 other areas of scholarship which assume international-level coordination could benefit from multilevel arrangements, either state-based or not.

With regards to environmental policies, we provide experimental evidence that respondents have preferences that are not fully represented in current climate mitigation agreements. We identify that Latin American elites are interested in incorporating different political actors and in strengthening the role international organisations play in climate governance. Future climate negotiations can achieve better results if they take those preferences into account.

Supplementary Material

The data, code and any additional materials required to replicate all analyses in this article are available at http://github.com/danilofreire/climate-governance.

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