# Appendix A  Survey Questions and Sampling Frame

Following directly from Martin Horak's framework, our survey was divided into three major parts: policy development, resource provision, and policy implementation. In each part, we provided a very brief preface and a clear and easily visible definition of the relevant policy phase. These three prefaces were as follows:

- Part One: Public Policy Development. Academic researchers often divide public policy responsibility in Canada into three phases: (1) Policy development, (2) Resource provision, (3) Policy implementation. Public policy development is defined as **the process of deciding on a course of action in a policy area**.

- Part Two: Resource Provision. Academic researchers often divide public policy responsibility in Canada into three phases: (1) Policy development, (2) Resource provision, (3) Policy implementation. Resource provision is defined as **providing resources for a particular policy area, such as funding, land and other assets, and policy expertise**.

- Part Three: Policy implementation. Academic researchers often divide public policy responsibility in Canada into three phases: (1) Policy development, (2) Resource provision, (3) Policy implementation. Policy implementation is defined as **responsibility for actual execution or implementation in a public policy area**.

For each part, we then asked a series of questions by actor for each of the nine randomly assigned domains, as follows:

- How involved is your MUNICIPAL GOVERNMENT in (policy phase) in each of these policy areas? ((1) Not involved at all (2) Slightly involved (3) Moderately involved (4) Very involved (5) Extremely involved (9) Don't know)

- How involved is your REGIONAL/COUNTY GOVERNMENT in (policy phase) in each of these policy areas? ((1) Not involved at all (2) Slightly involved (3) Moderately involved (4) Very involved (5) Extremely involved (9) Don't know) (Please skip if inapplicable)

- How involved is your PROVINCIAL GOVERNMENT in (policy phase) in each of these policy areas? ((1) Not involved at all (2) Slightly involved (3) Moderately involved (4) Very involved (5) Extremely involved (9) Don't know)

- How involved is the FEDERAL GOVERNMENT in (policy phase) in each of these policy areas? ((1) Not involved at all (2) Slightly involved (3) Moderately involved (4) Very involved (5) Extremely involved (9) Don't know)

- How involved are PRIVATE BUSINESSES AND CORPORATIONS in (policy phase) in each of these policy areas? ((1) Not involved at all (2) Slightly involved (3) Moderately involved (4) Very involved (5) Extremely involved (9) Don't know)

- How involved are NON-GOVERNMENTAL ACTORS (e.g. community associations, charities, religious organizations) in (policy phase) in each of these policy areas? ((1) Not involved at all (2) Slightly involved (3) Moderately involved (4) Very involved (5) Extremely involved (9) Don't know)

Please see online replication materials (link removed for review) for a complete codebook as well as full replication data.

## A.1    Census Subdivisions and Sampling Frame

To develop our list of eligible municipalities for the survey, we began by downloading a full list of Canadian census subdivisions by 2016 population from Statistics Canada (Table T301EN).[14] 713 census subdivisions in this table are listed as having a population above 5,000. We initially excluded three census subdivision types from our email collection process due to the absence of elected municipal officials in those types: Indian Reserves (1 in dataset), New Brunswick Parishes (5 in dataset), and Unorganized areas (3 in dataset). Unfortunately, we discovered after the data collection process was complete that we had also excluded electoral areas in British Columbia from data collection; these emails were not available on the BC municipal directory and we only later discovered that they were available on the websites of the relevant regional districts.

Table 5: **Census Subdivision Types and Emails Collected**

|  | Total | Collected | Percentage |
|---|---|---|---|
| Canton / Canton Unis | 2 | 2 | 100.0% |
| City / Ville | 297 | 257 | 86.5% |
| District Municipality | 24 | 23 | 95.8% |
| Indian Reserve |  | N/A |  |
| Municipal District | 43 | 43 | 100.0% |
| Municipality | 76 | 56 | 73.7% |
| Parish |  | N/A |  |
| Regional District Electoral Area | 20 | 0 | 0.0% |
| Regional Municipality | 4 | 3 | 75.0% |
| Rural Community | 1 | 1 | 100.0% |
| Specialized Municipality | 4 | 4 | 100.0% |
| Subdivision of County Municipality | 4 | 4 | 100.0% |
| Town | 137 | 117 | 85.4% |
| Township | 69 | 44 | 63.8% |
| Unorganized |  | N/A |  |
|  |  |  |  |
| **Total Overall** | 681 | 554 | 81.4% |
| **Total Excluding Electoral Areas** | 661 | 554 | 83.8% |

Statistics Canada's Census Subdivisions table contains more than 5,000 distinct CSDs; after eliminating the three CSD types listed above from the table, nearly 4,000 CSDs remain. Thus our sampling frame captures only a small proportion (about 16 percent) of all census subdivisions in Canada. From a population perspective, however, our sampling frame includes 31,059,089 individuals, more than 88 percent of Canada's total 2016 population (35,151,728). While we acknowledge that the 5,000 population threshold is arbitrary,

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14. This table is available here: `https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/hlt-fst/pd-pl/comprehensive.cfm`.

we felt that it struck a good balance between capturing a wide range of urban, suburban, and rural municipalities across Canada while also avoiding the immense practical challenges involved in collecting email addresses for very small municipalities.

Table 5 provides an overview of the total number of census subdivision types in our database, and the number of municipalities in each type for which we were able to successfully locate email contact information, either from online sources or from city clerk requests. Given that the missing municipalities are overwhelmingly very small rural councils, we estimate that we collected email addresses for more than 95 percent of the local elected councillors and mayors in Canadian municipalities above 5,000 population.

# Appendix B   MPII Calculation

This appendix explains the "Multilevel Policy Involvement Index" (MPII) used in the main text of the paper.

We begin by describing the overall logic of the MPII. As we discuss in the main text, we envision a measure of multilevel policy involvement as an attempt to capture the extent to which multiple players are involved in a particular phase of the policy process and/or the involvement of multiple players across all phases of the process within a particular domain. If respondents indicate that many actors are involved in a policy domain, this should produce a higher MPII score than if respondents indicate that only one actor is involved.

Intuitively, then, low MPII domains involve a "concentration" of involvement in one actor while high MPII domains involve a "fragmentation" of authority in multiple actors. We therefore use a widely adopted measure of market concentration, the Herfindahl-Hirschman index (HHI), to capture the concentration or fragmentation of a particular policy area. Since the HHI captures the *concentration* of a market, we take the complement of the HHI as our measure of multilevel policy involvement.

The Herfindahl-Hirschman Index is calculated as:

$$HHI = \sum_{i=1}^{N} s_i^2$$

where $s_i$ is typically the market share of a firm and $N$ is the number of firms. In our case, $s_i$ represents the share of "involvement points" belonging to a particular actor in a particular policy domain (such as municipal government in the area of culture and the arts) and $N$ represents the sum of the squared shares of all five actors in that policy area for each phase (such as municipal, regional, provincial, federal, private, and NGO actors in the policy development phase of culture and the arts). For each policy area and phase, we then calculate the Multilevel Policy Involvement Index as the complement of the *HHI*:

$$MPII = 1 - HHI$$

The range of the *HHI* is from 1/N to one; in our case, the range is from 0.167 to 1. The range of the MLG index is therefore from zero to 0.83.

To calculate the MPII requires four steps. First, we calculated the sum of "involvement

scores" by survey respondent for each policy domain in each phase. In parks and recreation, for instance, we calculated the sum of involvement scores of each actor in policy development, resource provision, and policy implementation. Second, we calculated the *proportion* of the summed involvement scores for each actor, domain, and phase. Third, we squared these scores and summed them, to generate a Herfindahl-Hirschman Index score for each policy area in each phase. Fourth, we took the complement of the HHI scores to generate the MPII score.

# Appendix C   Regression Details

In this appendix we provide the full regression table for the analysis in the main text above, along with two alternative specifications. These three models are visualized in figure 4 below, and then summarized in table 6. Model B is the analysis reported in the main text. This model is OLS with standard errors clustered by respondent.

Model A reports a basic OLS regression with ordinary standard errors. As is visible in the figure, the signs and sizes of the coefficients are very similar to those in Model B. The additional precision provided by the non-clustered standard errors makes the population and some of the region variables statistically significant. We believe that clustered standard errors are a more conservative approach in this case, but we do note in the main text above that the statistical significance of the population and region findings does depend on this decision.

Model C takes a different approach to the challenge of having multiple judgments from each respondent, reporting an OLS regression with respondent fixed effects. Due to perfect collinearity issues, this approach prevents us from including population and region in the analysis (preliminary tests indicated that a random effects model would be inappropriate here), but the the domain coefficients as well as the policy phase coefficients are similar in size and overall pattern. This third analysis, which effectively captures average "within-respondent" variation, gives us additional confidence in the findings reported in the main text above.

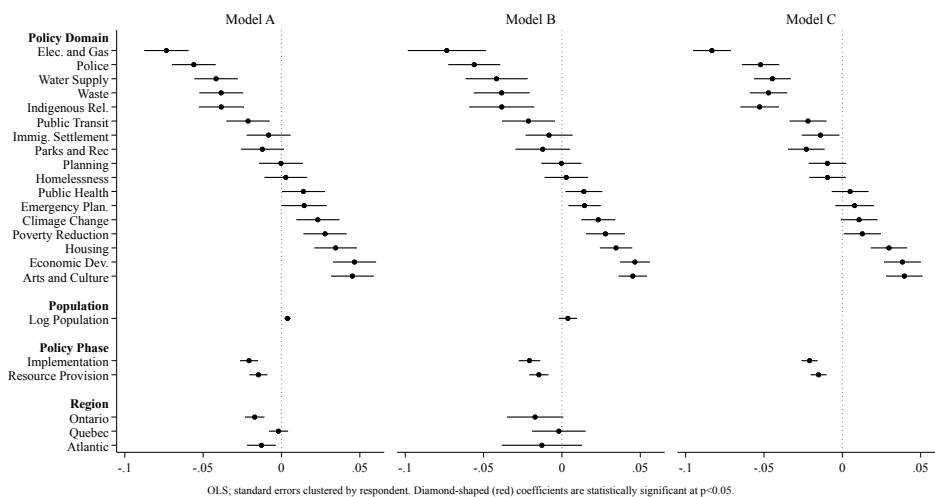Figure 4: **Regression Analysis: Three Approaches**



OLS; standard errors clustered by respondent. Diamond-shaped (red) coefficients are statistically significant at p<0.05.

Table 6: Detailed Regression Results

| | (1) Model A | | (2) Model B | | (3) Model C | |
|---|---|---|---|---|---|---|
| **Domain** | | | | | | |
| Elec. and Gas | -0.0735*** | (-10.17) | -0.0735*** | (-5.78) | -0.0832*** | (-13.47) |
| Police | -0.0560*** | (-7.84) | -0.0560*** | (-6.61) | -0.0522*** | (-8.56) |
| Water Supply | -0.0417*** | (-5.91) | -0.0417*** | (-4.15) | -0.0447*** | (-7.41) |
| Waste | -0.0385*** | (-5.38) | -0.0385*** | (-4.24) | -0.0471*** | (-7.74) |
| Indigenous Rel. | -0.0384*** | (-5.23) | -0.0384*** | (-3.63) | -0.0528*** | (-8.40) |
| Public Transit | -0.0214** | (-3.02) | -0.0214* | (-2.48) | -0.0219*** | (-3.63) |
| Immig. Settlement | -0.00821 | (-1.14) | -0.00821 | (-1.07) | -0.0139* | (-2.27) |
| Parks and Rec | -0.0122 | (-1.75) | -0.0122 | (-1.38) | -0.0230*** | (-3.85) |
| Planning | -0.000330 | (-0.05) | -0.000330 | (-0.05) | -0.00950 | (-1.55) |
| Homelessness | 0.00276 | (0.40) | 0.00276 | (0.39) | -0.00944 | (-1.58) |
| Public Health | 0.0140* | (1.99) | 0.0140* | (2.33) | 0.00496 | (0.83) |
| Emergency Plan. | 0.0145* | (1.97) | 0.0145** | (2.75) | 0.00783 | (1.24) |
| Climage Change | 0.0232*** | (3.30) | 0.0232*** | (4.20) | 0.0107 | (1.78) |
| Poverty Reduction | 0.0278*** | (3.93) | 0.0278*** | (4.40) | 0.0128* | (2.11) |
| Housing | 0.0345*** | (4.97) | 0.0345*** | (6.57) | 0.0298*** | (5.02) |
| Economic Dev. | 0.0466*** | (6.63) | 0.0466*** | (9.56) | 0.0384*** | (6.38) |
| Arts and Culture | 0.0453*** | (6.51) | 0.0453*** | (9.76) | 0.0396*** | (6.65) |
| | | | | | | |
| **Phase** | | | | | | |
| Implementation | -0.0207*** | (-7.04) | -0.0207*** | (-5.92) | -0.0209*** | (-7.98) |
| Resource Provision | -0.0147*** | (-5.03) | -0.0147*** | (-4.67) | -0.0152*** | (-5.84) |
| | | | | | | |
| **Population** | | | | | | |
| Log Population | 0.00381*** | (3.59) | 0.00381 | (1.28) | | |
| | | | | | | |
| **Region** | | | | | | |
| Ontario | -0.0171*** | (-5.39) | -0.0171 | (-1.87) | | |
| Quebec | -0.00194 | (-0.62) | -0.00194 | (-0.22) | | |
| Atlantic | -0.0128** | (-2.72) | -0.0128 | (-0.98) | | |
| | | | | | | |
| Constant | 0.724*** | (62.49) | 0.724*** | (24.20) | 0.763*** | (174.75) |
| Clustered SEs | No | | Yes | | No | |
| Respondent FEs | No | | No | | Yes | |
| Observations | 9478 | | 9478 | | 9478 | |
| Adjusted $R^2$ | 0.082 | | 0.082 | | 0.373 | |

$t$ statistics in parentheses.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

# Appendix D    Overall Breakdown

Figure 5 below provides detailed mean estimates for every actor, policy domain, and phase in our dataset. For additional details and data, see the online replication files and dataset, available at (LINK REMOVED FOR REVIEW). Note that the detail in each image will be visible by zooming in on the page in your PDF viewing software.

Figure 5: **Mean Involvement Scores by Phase, Domain, and Actor**
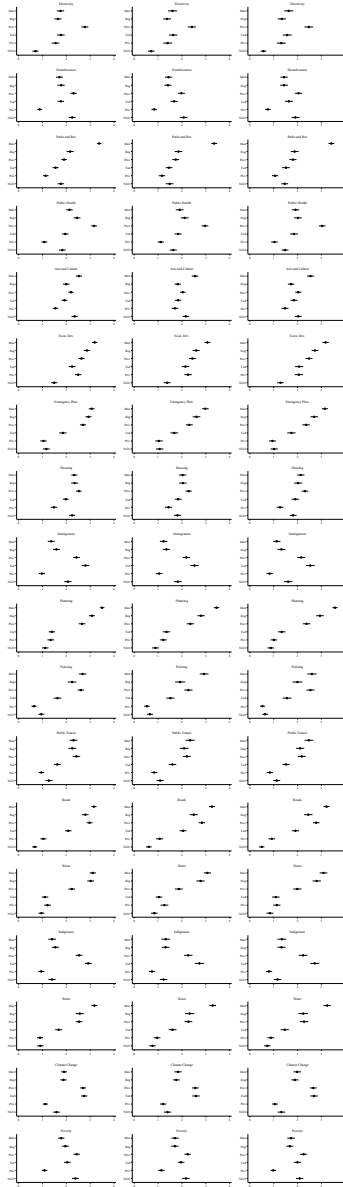
# Appendix E  Patterns of Uncertainty

Our analysis in the main text excludes "don't know" responses. But these responses may actually be informative: if patterns of "don't know" responses are distributed non-randomly, we may be able to use this information to better understand how local actors perceive policy involvement. Put another way, if more respondents indicate that they do not know if an actor is involved in a particular policy domain, we have good reason to believe that those actors are in fact actually less likely to be involved in that domain.

Figure 6 provides a breakdown of the proportion of don't know responses for each domain and actor. The overall average is just under ten percent. However, as the figure shows, this average varies in quite systematic ways across the data. In nearly every policy domain, for instance, local politicians are most unsure about the involvement of private businesses in the policy process. This lends additional support to our contention in the main text that private businesses and corporations are not seen to be deeply involved in most of the policy domains in our dataset.

The figure also illustrates the need for additional research in which we survey other actors and levels of government. Don't know responses are noticeably uncommon for the municipal level of government – which is entirely unsurprising, given that this is the level of government which our respondents know best. Thus as we note in the paper, adding responses from other actors (provincial, federal, private, ngo) would be a valuable next step for these data.
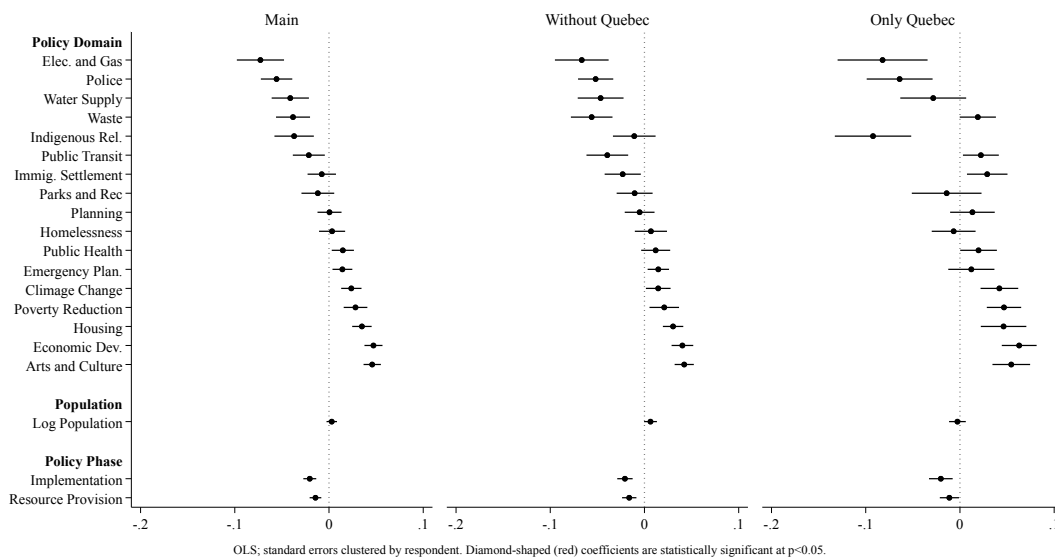
Figure 6: **Proportion of Don't Know Responses**
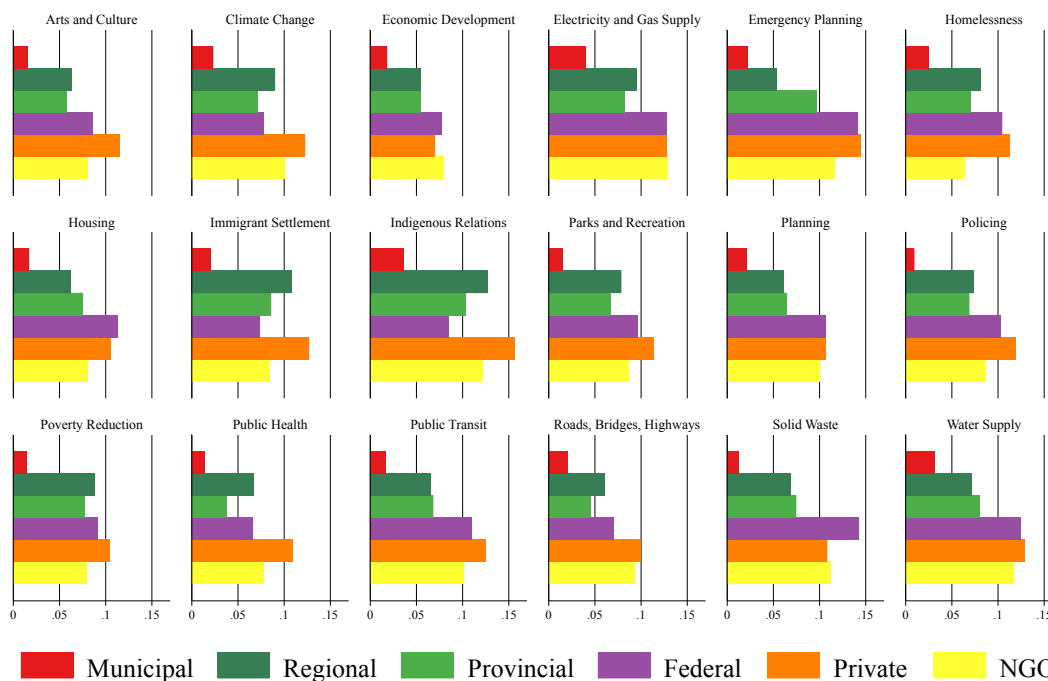
# Appendix F    Regional Robustness

In the main text, we note that our response rate is somewhat unbalanced by region: Quebec respondents represented a higher proportion of our pool of respondents than they represent as a proportion of the total municipal population in Canada. In the figure below, we run the same regression as in the main text (OLS, clustered SEs) with and without the Quebec respondents.

Figure 7: **Regression Analysis: Regional Robustness**



OLS; standard errors clustered by respondent. Diamond-shaped (red) coefficients are statistically significant at p<0.05.

The results in the figure above do not affect any of the major findings or claims in the main text; excluding Quebec from the analysis produces results that are nearly identical to those in the overall analysis. Nevertheless, the figure does reveal some interesting features of the Quebec responses. Compared to local politicians in other regions, Quebec's municipal politicians see Indigenous relations as distinctly *lacking* multilevel policy involvement, largely because the federal government is seen to be much more prominent in this area. Similarly, multilevel policy involvement is seen to be higher in waste, public transit, and immigrant settlement in Quebec (relative to roads and bridges, the base category) than we find in other regions, presumably because of the increased role of the provincial government in these areas in the Quebec context.

# Appendix G    Comparing Politicians to Staff in B.C.

Throughout the main text above, we have emphasized that our data reflect *perceptions* of multilevel policy involvement from the perspective of local elected politicians. One concern with this approach is that these perceptions may be idiosyncratic; while the findings may be useful as a presentation of the way local politicians tend to think about multilevel policy issues, they may be much less useful as a reflection of the way other local actors might think about the same issues.

One way to investigate this possibility is to compare the perceptions of local elected politicians with those of senior municipal staff. While we were not able to build lists of municipal staff across Canada, we *did* distribute our survey to senior municipal officials in the Province of British Columbia, where a single reliable directory of municipal officials is available for all municipalities in the province (this information is available through CivicInfoBC). We distributed the survey to any municipal officials with the name "manager" or "director" or "chief" in their job title, along with all City Clerks, Deputy City Clerks, City Managers, and Deputy City Managers. We received 208 complete responses from senior municipal officials in British Columbia.

Figure 8 provides a summary of a regression analysis in which we compute multilevel policy involvement scores for each BC respondent in our dataset (208 non-elected officials and 83 elected officials) and then regress these scores on our population variable and elected / non-elected status. The figure then reports predicted MPII scores for each policy domain for non-elected and elected officials. As is clear in the figure, MPII scores are very similar across the two respondent types: the differences between the two types are not statistically significant in 15 of the 18 policy areas in the dataset. Only in three areas – economic development, emergency planning, and public transit – are MPII scores of non-elected and elected respondents significantly different from one another. In general, these findings suggest that MPII scores are generally *not* distinctive to elected politicians, and are broadly shared by senior municipal staff.

Figure 8: **MPII Comparison of BC Elected and Non-Elected Respondents**
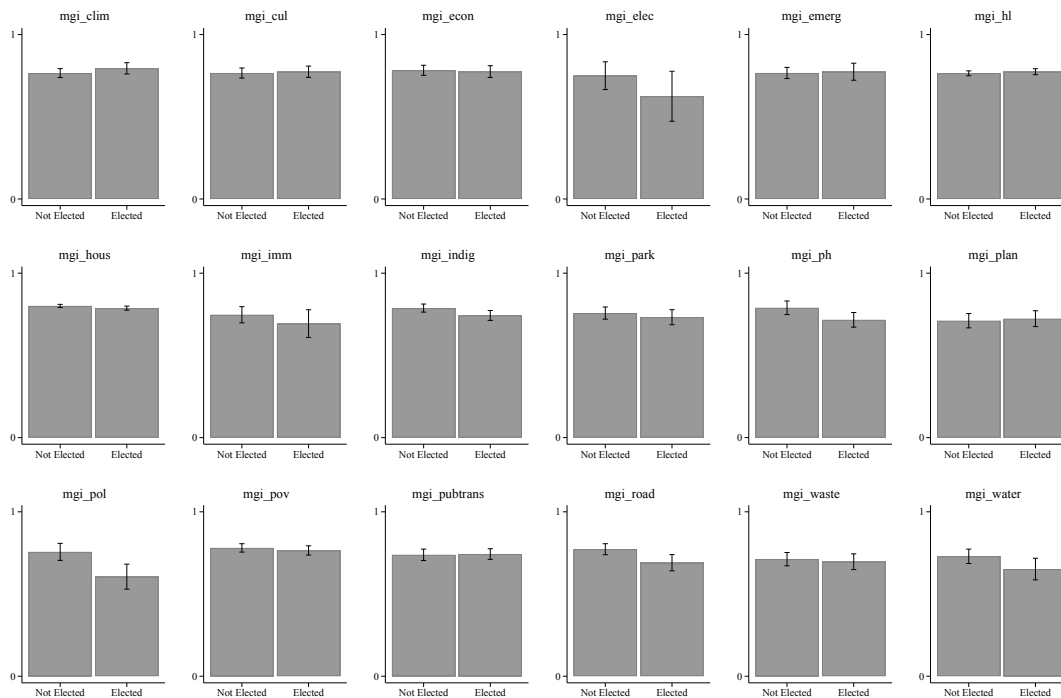


What accounts for the differences in MPII scores in the three cases in which the differences *are* statistically significant? In the case of economic development, the difference

originates in a tendency among elected officials to consider private actors more involved in economic development than do their non-elected counterparts. In the case of public transit, the difference originates in a tendency among elected officials to consider the federal government more involved in public transit than do their non-elected counterparts. In the case of emergency planning, the difference between elected and non-elected officials is more subtle, and no single actor stands out as the main driver of the difference; a slight tendency to consider regional and federal governments more involved than do non-elected officials appears to be the main source of the difference.

In general, then, we do see some differences between elected and non-elected responses in multilevel policy involvement scores. These differences are generally small and occur only in a minority of policy issues. While these findings apply only to the Province of British Columbia, they do give us some additional confidence that our results reflect the views of Canadian municipal actors on multilevel policy involvement beyond the elected respondents who comprise the bulk of our survey and the source of the findings reported in the main paper.