Orçamento e Divisão no Brasil

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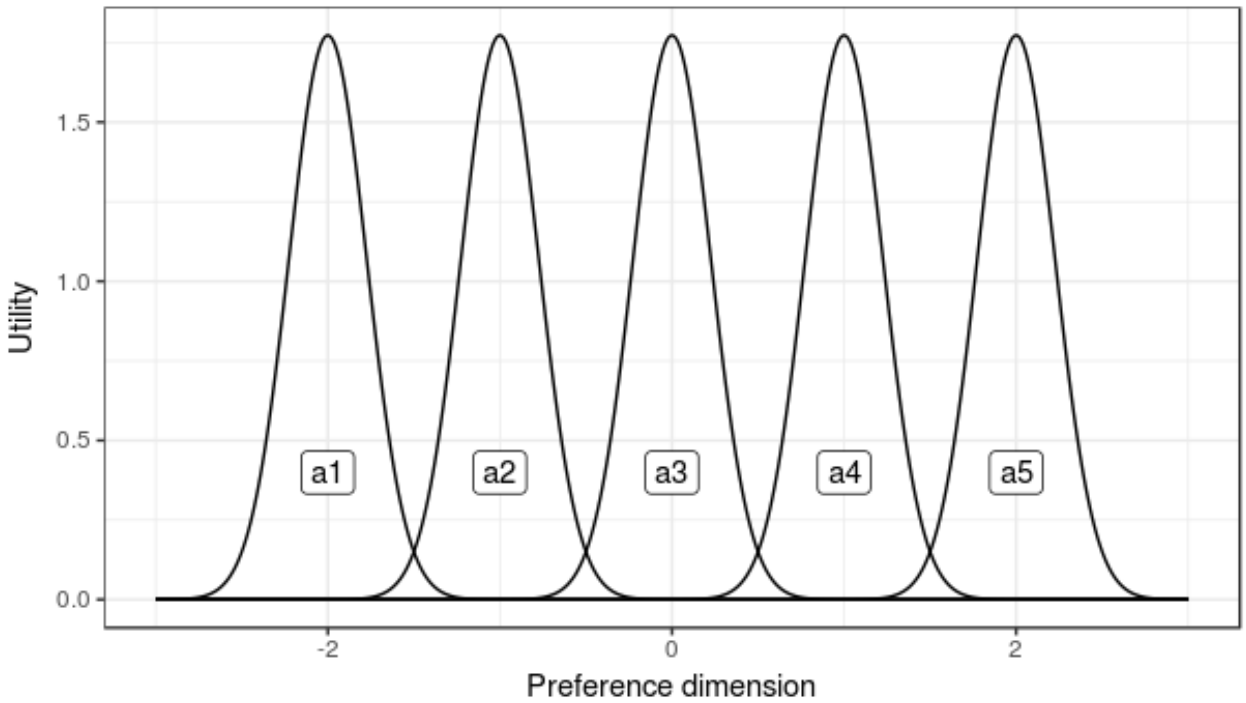
Paper

- Goal: understanding preferences over government spending in Brazil.
- Problem: surveyors usually ask a question about respondents' relative preferences, whether they would like to see spending increased, decreased, or kept about the same. NOT A SCALE!
- However, political preferences can usually be estimated for one, two, or more dimensions.

Paper

Figure: Distribution of single-peaked utility functions across an ideological dimension



Model

- Every person i has a utility function for a roll call j position yea ($U(i, s_j) = -||a_i - s_j||^2$) and nay ($U(i, n_j) = -||a_i - n_j||^2$)
- Clinton, Rivers, Jackman (2001) show that we can estimate a probit model from utility functions such that:

$$P(y_{ij} = 1) = P(U(i, s_j) > U(i, n_j))$$

$$= \Phi(\alpha_j + \beta_j \theta_i)$$

- Identification problems? A Bayesian solution.

Model

- How to model spending preferences?
- Branham-Jessee's model (ordinal regression model):

$$Y_{ij}^* = \beta_j \theta_i + \varepsilon_{ij}$$

$$Y_{ij} = \begin{cases} \text{Aumentar Impostos - Gastar mais} & Y_{ij}^* < k_{1j} \\ \text{Gastar o mesmo que atualmente} & k_{1j} \leq Y_{ij}^* \leq k_{2j} \\ \text{Diminuir Impostos - Gastar menos} & k_{2j} \leq Y_{ij}^* \leq k_{3j} \\ \text{Diminuir Impostos - Não oferecer serviço} & k_{3j} < Y_{ij}^* \end{cases}$$

$$p_j = \frac{k_{1j} + k_{2j} + k_{3j}}{2\beta_j}$$

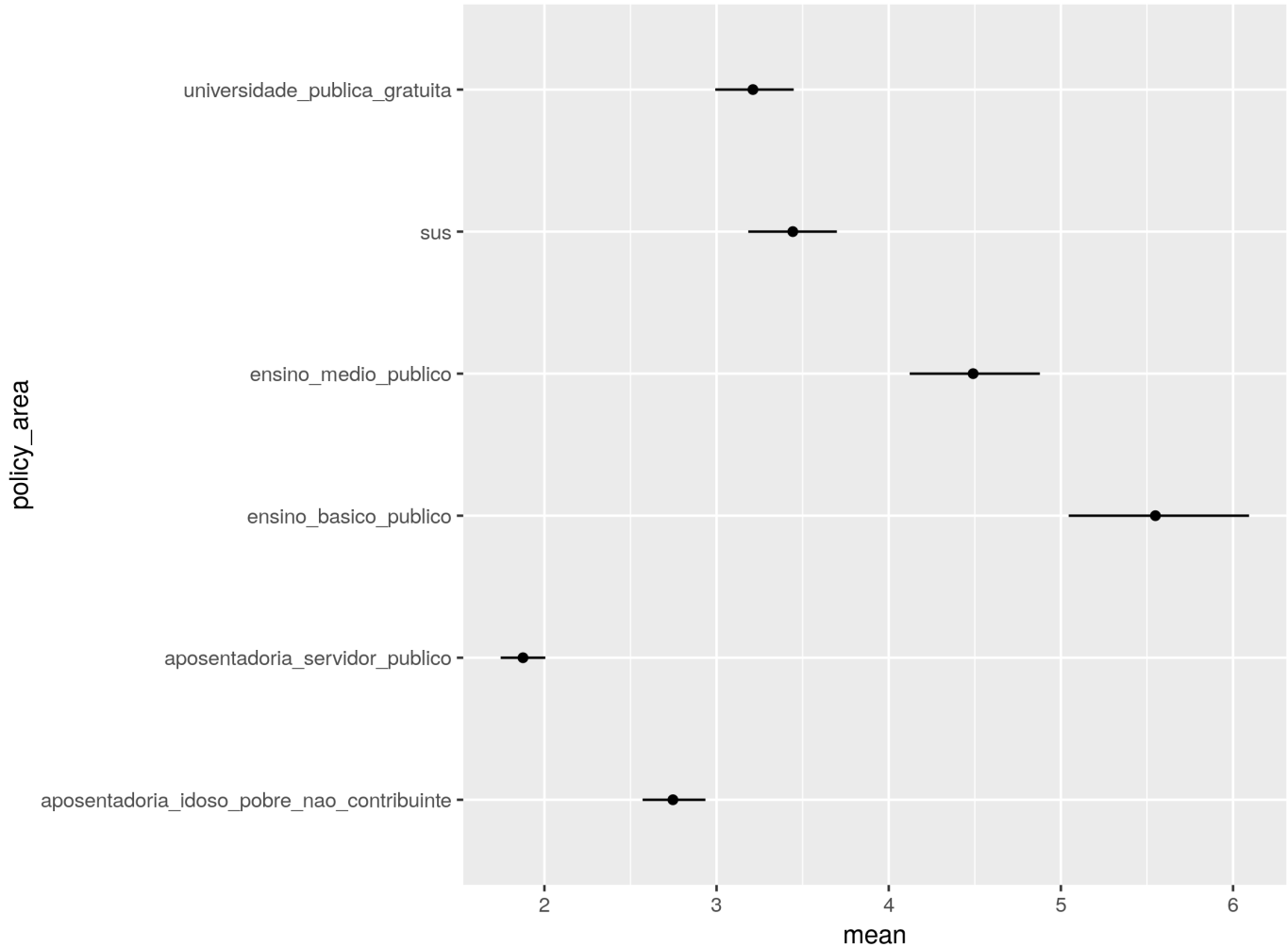
- Priors: $\beta \propto Normal(0, 100), \theta \propto Normal(0, 1), k \propto Normal(0, 100)$

Data

- 2010 LAPOP for Brazil, which was fielded to 2482 respondents in 17 states.
- Latin America Public Opinion Project (LAPOP) is a survey created and regularly collected for Latin American countries since 2004.
- 6 spending questions across a diverse set of spending areas: Education, Health care (SUS), Pensions, etc.
- Questions connect spending to taxation, clearly showing a trade-off for respondents.

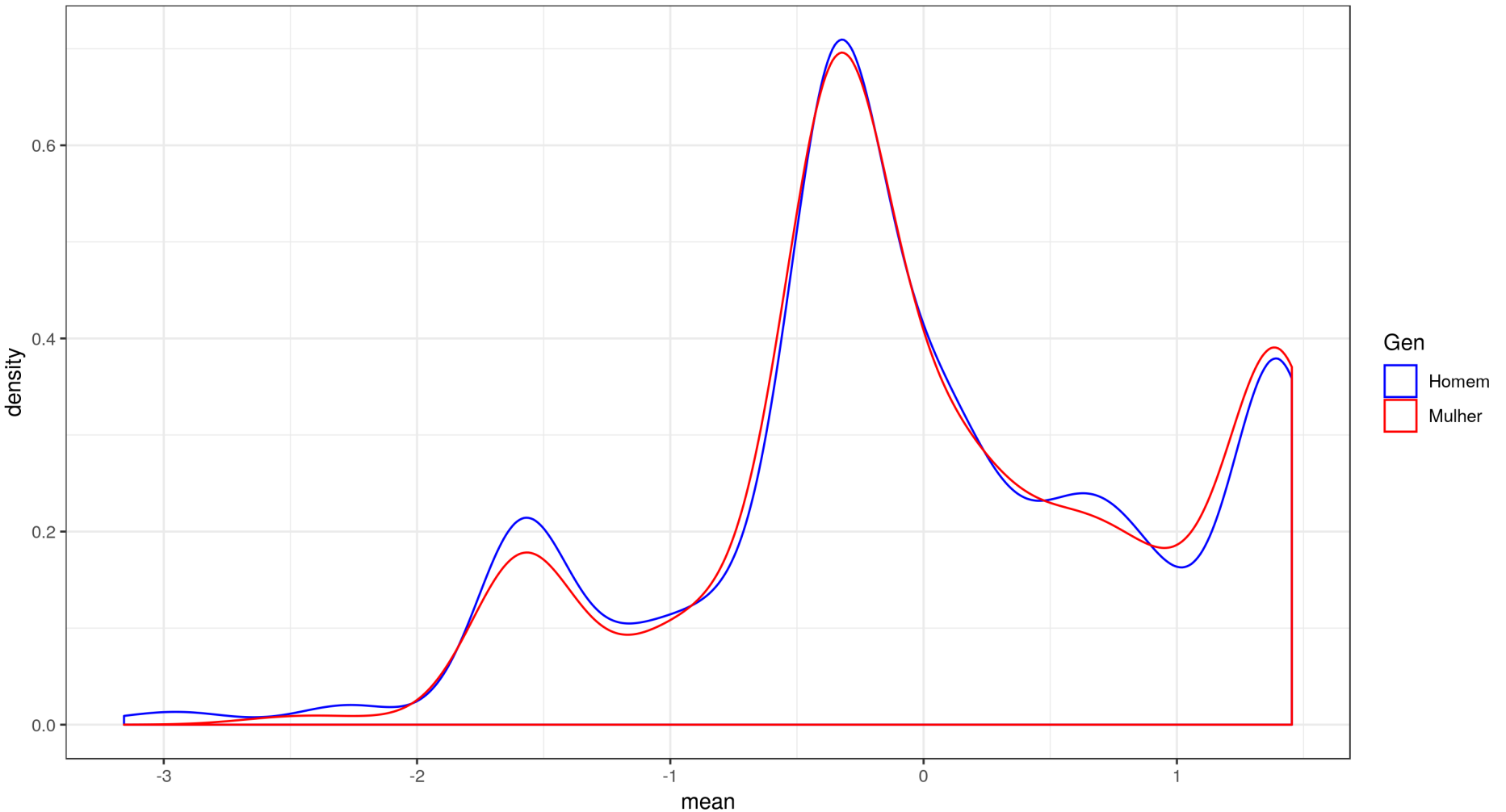
Results

Figure: Betas.



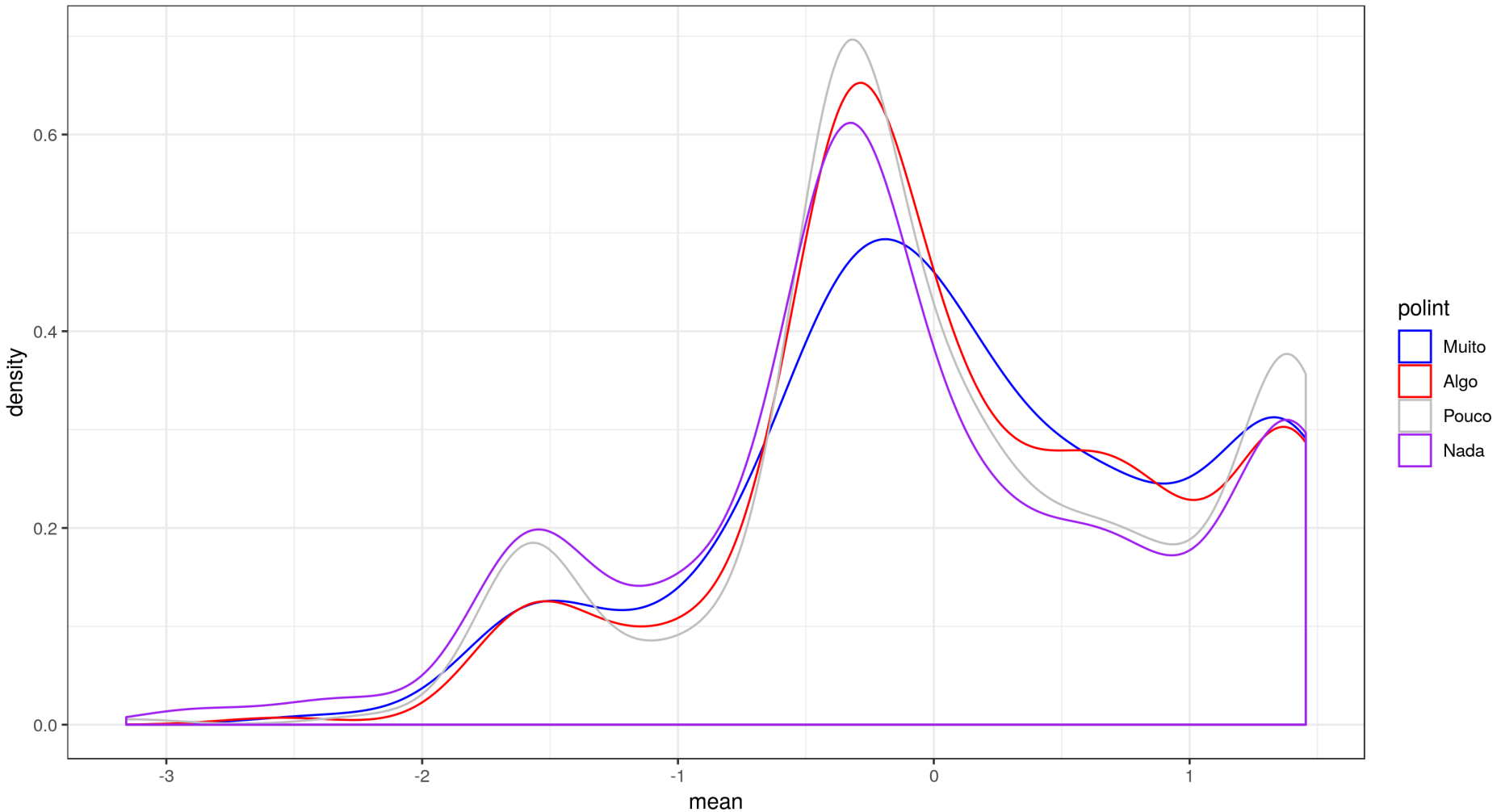
Results

Figure: Estimativas por Gênero



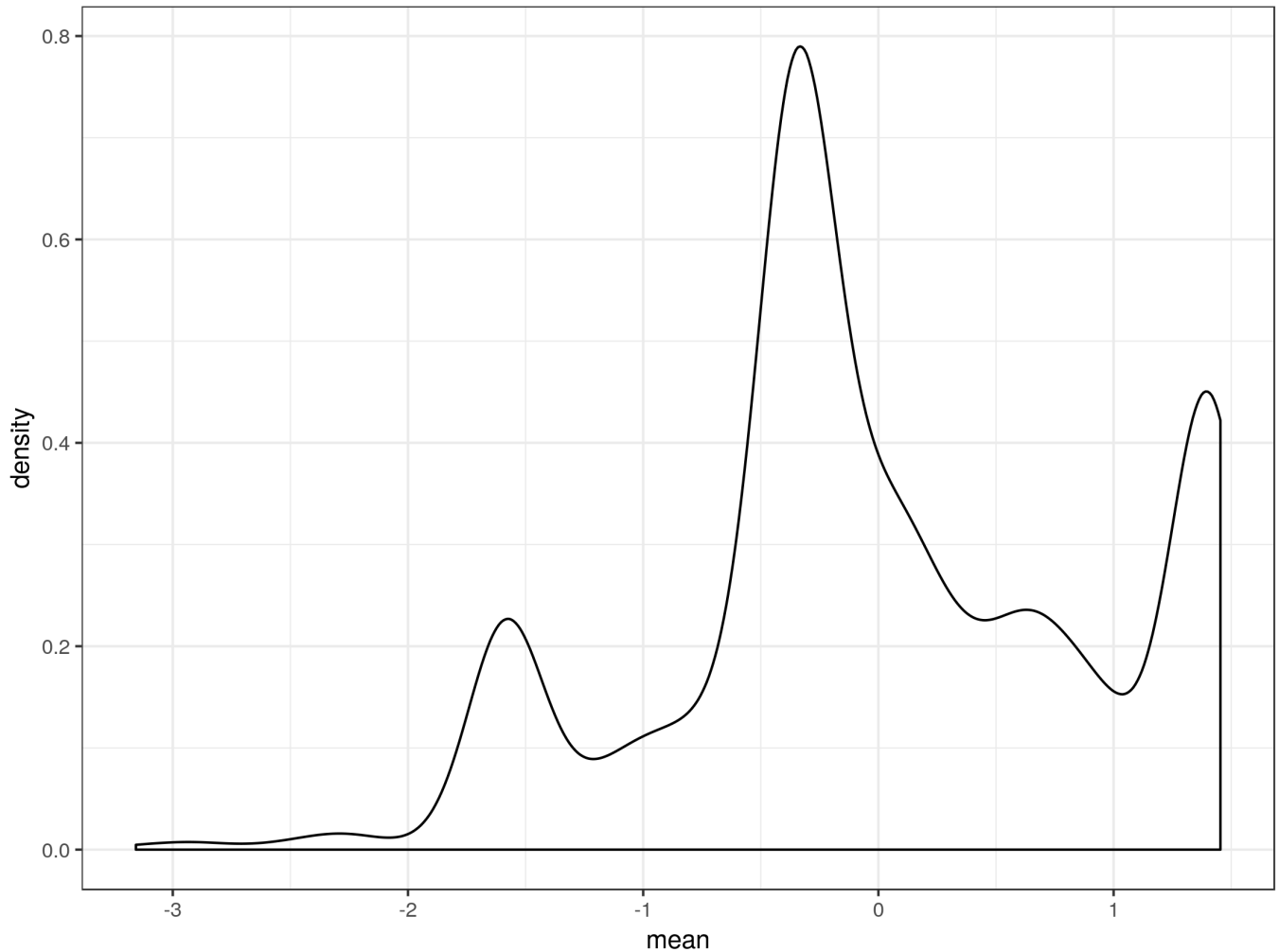
Results

Figure: Estimativas por Identificação Política



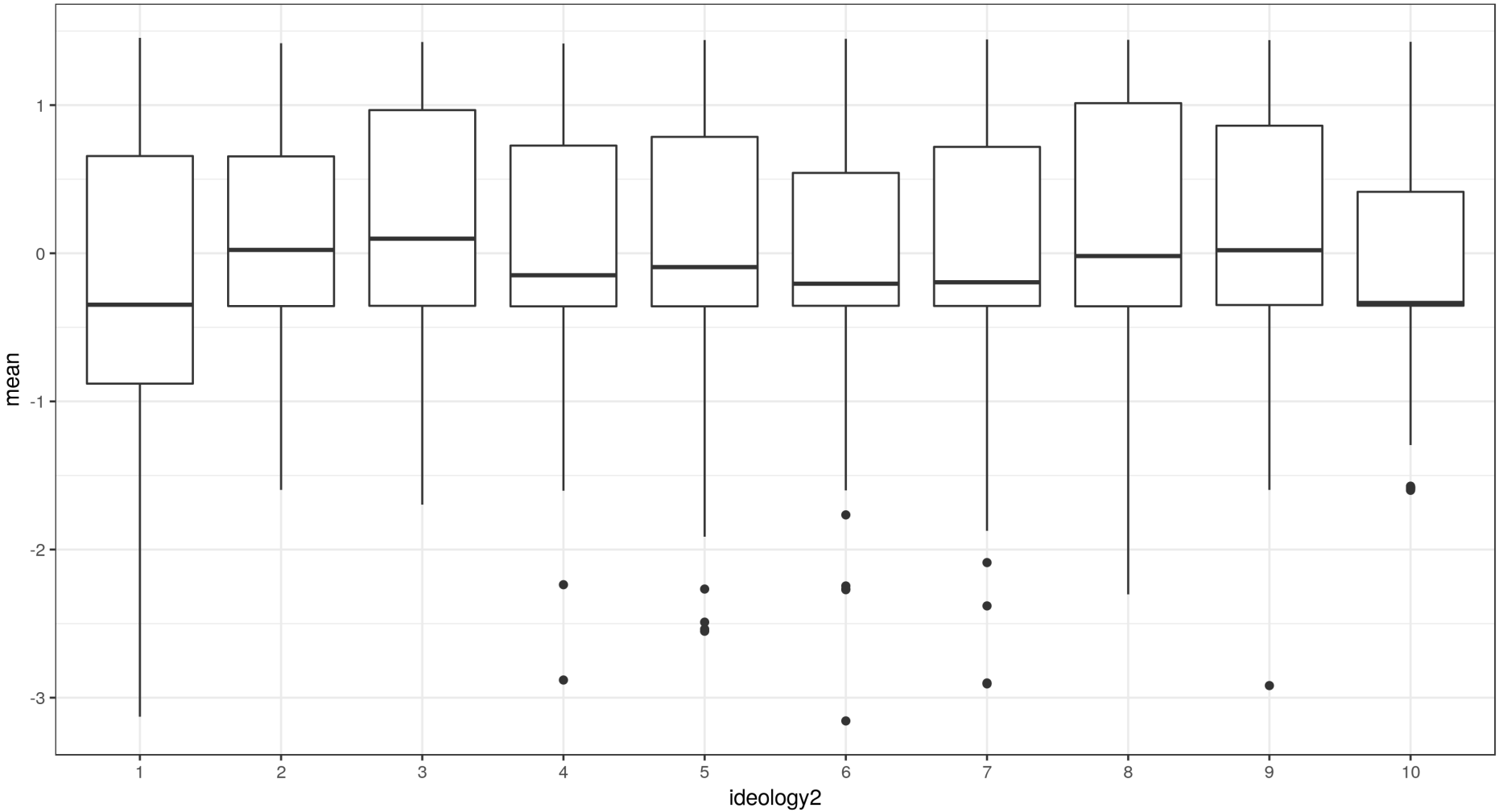
Results

Figure: Spending Preferences



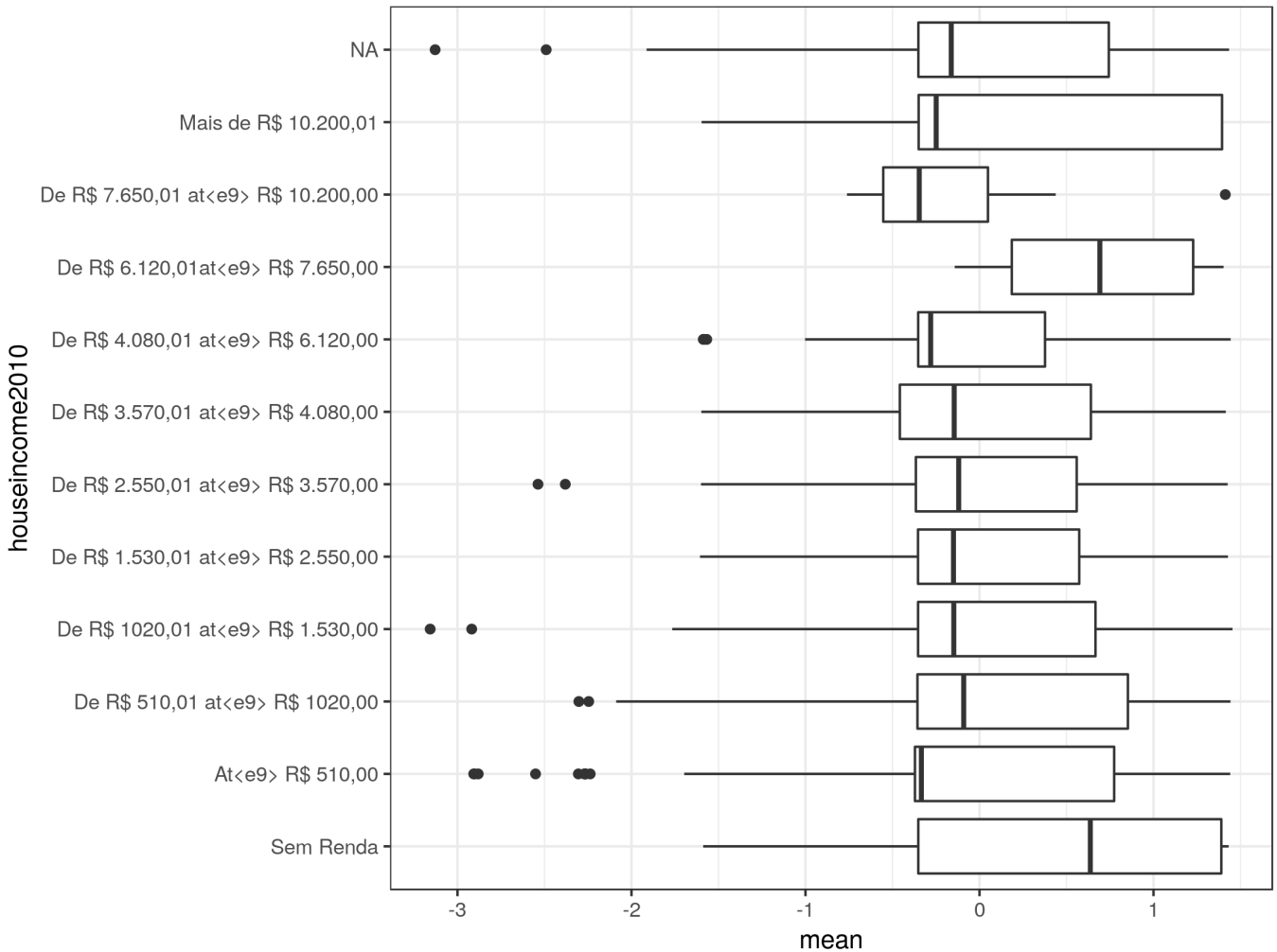
Results

Figure: Spending Preferences By Ideology



Results

Figure: Spending Preferences By House Income



Credible Intervals

- Credible interval is an interval within which an unobserved parameter value falls with a particular subjective probability.
- Not unique.
- Different from confidence intervals. A frequentist 95% confidence interval means that with a large number of repeated samples, 95% of such calculated confidence intervals would include the true value of the parameter.
- Credible intervals can be interpreted as confidence intervals with uniform priors.
- One can compare them directly by estimating the probability using the simulated samples.

Regression - Aposentadoria de Servidores

	Coef
Gen	-0.035
	(0.036)
houseincome2010	0.006
	(0.011)
leftdummy	0.015
	(0.049)
rightdummy	-0.124
	(0.041)**
polint	0.026
	(0.020)
inffreq	-0.010
	(0.019)
govaiddummy	-0.092
	(0.045)*
_cons	2.045
	(0.097)**
R^2	0.01
N	1,928

* $p < 0.05$; ** $p < 0.01$

Regression - Aposentadoria de Não-Contribuintes

	Coef
Gen	-0.064
	(0.035)
houseincome2010	-0.009
	(0.011)
leftdummy	-0.004
	(0.046)
rightdummy	-0.027
	(0.039)
polint	0.016
	(0.019)
inffreq	0.007
	(0.018)
govaiddummy	-0.029
	(0.043)
_cons	1.863
	(0.092)**
R^2	0.00
N	1,948

* $p < 0.05$; ** $p < 0.01$

Regression - Ensino Fundamental

	Coef
Gen	-0.053
	(0.034)
houseincome2010	-0.015
	(0.010)
leftdummy	-0.037
	(0.046)
rightdummy	-0.031
	(0.039)
polint	0.053
	(0.019)**
inffreq	0.012
	(0.018)
govaiddummy	-0.070
	(0.042)
_cons	1.774
	(0.091)**
R^2	0.01
N	1,949

* $p < 0.05$; ** $p < 0.01$

Regression - SUS

	Coef
Gen	-0.016
	(0.035)
houseincome2010	-0.010
	(0.011)
leftdummy	0.035
	(0.047)
rightdummy	-0.034
	(0.040)
polint	0.033
	(0.020)
inffreq	-0.029
	(0.018)
govaiddummy	-0.015
	(0.043)
_cons	1.647
	(0.093)**
R^2	0.00
N	1,973

* $p < 0.05$; ** $p < 0.01$

Regression - Ensino Médio

	Coef
Gen	-0.066
	(0.034)*
houseincome2010	-0.007
	(0.010)
leftdummy	-0.016
	(0.045)
rightdummy	0.005
	(0.038)
polint	0.072
	(0.019)**
inffreq	-0.019
	(0.017)
govaiddummy	-0.046
	(0.042)
_cons	1.758
	(0.090)**
R^2	0.01
N	1,939

* $p < 0.05$; ** $p < 0.01$

Regression - Universidades

	Coef
Gen	-0.094
	(0.034)**
houseincome2010	-0.003
	(0.011)
leftdummy	0.048
	(0.046)
rightdummy	0.017
	(0.039)
polint	0.068
	(0.019)**
inffreq	-0.040
	(0.018)*
govaiddummy	0.009
	(0.043)
_cons	1.828
	(0.092)**
R^2	0.01
N	1,941

* $p < 0.05$; ** $p < 0.01$