

# Does Economic Disadvantage Diminish Social Cohesion?

A study of the relationship between incivilities and income inequality at the  
municipal level in Chile

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## Motivation

"If income gaps are not reduced, the next crisis will happen as surely as autumn follows summer"

*An interview with Michael Kumhof by Mikael Feldbaum,  
<https://www.eurozine.com>, 2012*

# Research Problem

*Income inequality* could have a significant effect on *social cohesion* and instability, spreading its influence like a *disease*

- Potential negative *consequences* of increasing inequality:
  - *Unemployment, indebtedness, political instability and economic growth*(Berg & Ostry,2011).
  - *Health, education, social and economic mobility and trust* (Atkinson, 2015).
- *Secondary role* in the design of economic policy
- How can we capture the effect of income inequality on *social cohesion*?

# What are "Incivilities"?

Incivilities are those visible disorders in the public space that violate respectful social norms and tend not to be treated as crimes by the criminal justice system

There are two types of incivilities:

- **Social incivilities** include antisocial behaviours such as public drinking, noisy neighbours, fighting in public places and street drug sales.
- **Physical incivilities** include, among others, vandalism, graffiti, abandoned cars and garbage on the streets.

## What is the problem?

### Broken Window Theory

Higher rates of incivilities are a signal of social disorganization which result in higher crime rates (Wilson & Kelling, 1982)

# Research so far

The negative impact of incivilities is not merely reflected in its **association with crime rates** (Skogan, 2015)

Incivilities have been associated with:

- **Health problems** (Branas et al., 2011; Cohen et al., 2000; Hill & Angel, 2005; Ross, 2011; Ross & Mirowsky, 2001)
- **Greater victimization and fear of crime** (Brunton-Smith, Jackson, & Sutherland, 2014; Mijanovich & Weitzman, 2003)
- Multiple negative **economic effects**:
  - Reduction in commercial activity, lower investment in real estate and reduction in house prices (Skogan, 2015)
  - Population instability (Hipp, 2010).

# Research so far

## The "Incivilities Thesis"

Incivilities are caused by inequality and the lack of informal mechanisms of social control. **The patterns of incivilities should mirror the patterns of inequality** (Taylor, 1999)

## Chilean evidence:

- Focussed on crime and showing weak and ambiguous results
  - **Indicators of socio-economic disadvantage** would only have significant effects on property crime (Beyer & Vergara, 2006; Nuñez, Rivera, Villavicencio, & Molina, 2003; Rivera, Gutiérrez, & Núñez, 2009).
  - **Crime deterrence variables:** The probability of being caught or the number of police resources (Beyer & Vergara, 2006; Rivera et al., 2009; Vergara, 2012).

# Research Question

Do differences in the rate of incivilities mirror differences in income inequality between counties?

# Research Hypothesis

"Incivilities will be higher in more unequal counties"



# Data and variables

- Data on the number of **incivilities** were obtained from the “**Centre of Studies and Analysis of Crime**” (Chilean government)
- Data on income correspond to six waves of the "Socioeconomic Characterization Survey", CASEN (2006-2009-2011-2013-2015-2017)
- The municipal information corresponds to the "National System of Municipal Information", SINIM.
- Population data from the "National Institute of Statistics", INE
- In total 1944 observations (324 counties in 6 years)



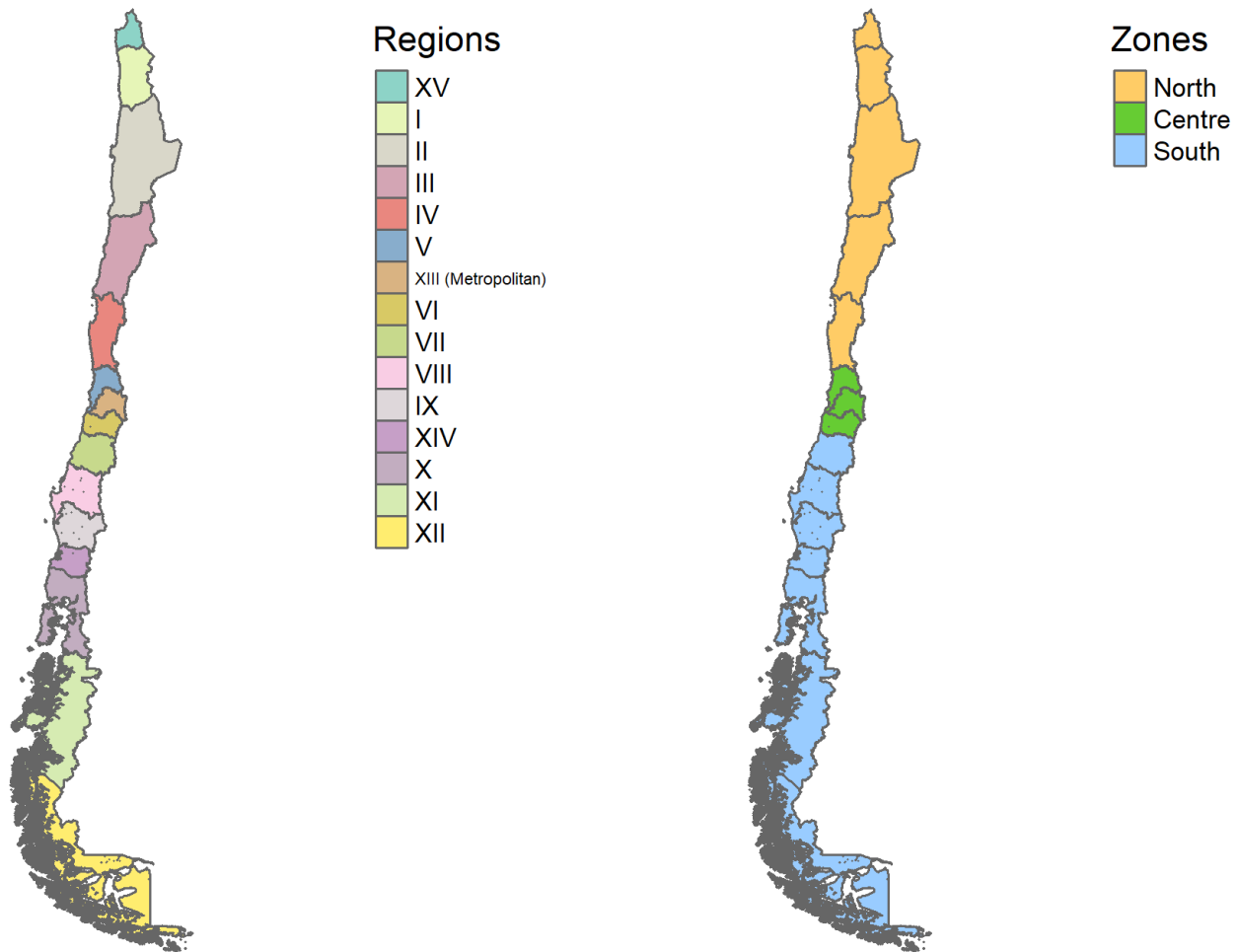
# Data and variables

- Dependent variable:  $inciv\_rate_{it} = \frac{incivilities_{it}}{n_{it}} * 1000$

Where *incivilities* is the number of incivilities, *inciv\_rate* the rate per 1000 inhabitants, *t* is the year, *i* the county and *n* is the county population.

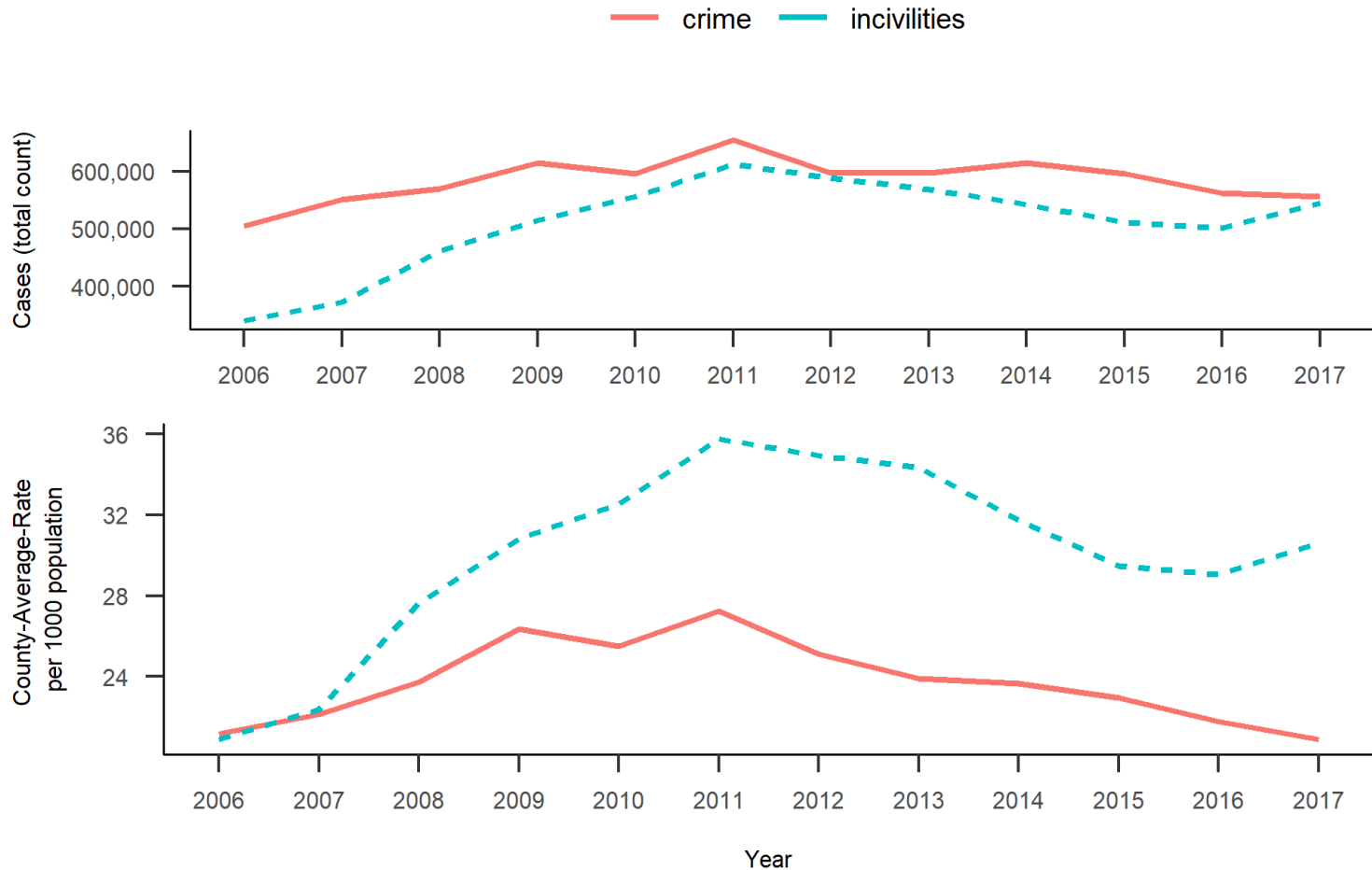
- Main independent variable: The **Gini coefficient** is calculated for each county and included through the variable *gini*.
- Controls:
  - Indicators of "absolute economic disadvantage" (income, unemployment rate, poverty rate)
  - Demographic (percentage of young population, percentage of female population, percentage of foreign population, population density)
  - Social (percentage of household owners, number of community organizations)
  - Deterrence (ratio between the reported number of arrest and the total number of reported incivilities cases)
  - Municipal (autonomy, political support of the mayor)
  - Geographical (Regional dummies)

# How is the country geographically divided?

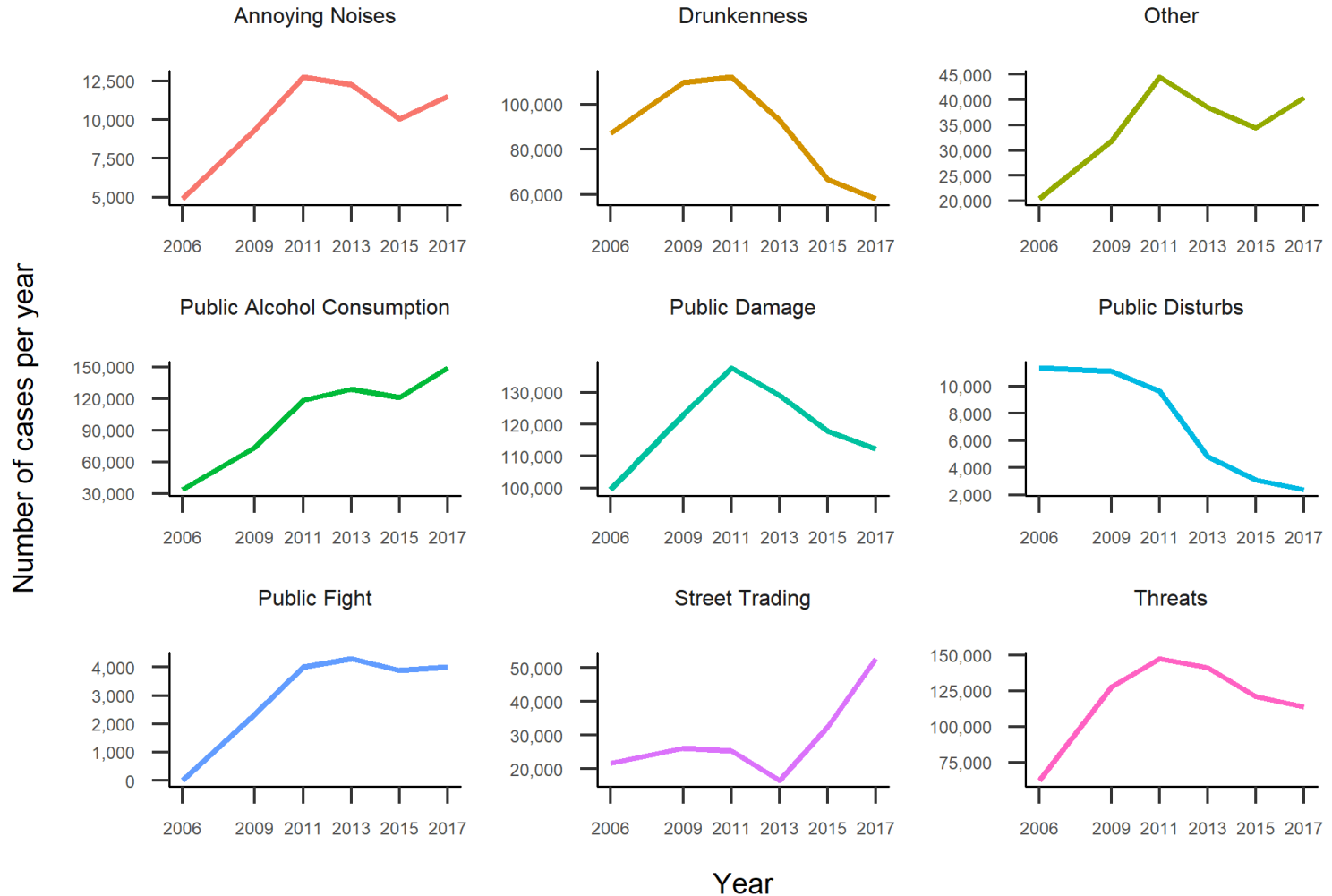


## Spatial distribution of incivilities: Rate per 1000 inhabitants (2006 vs 2017)

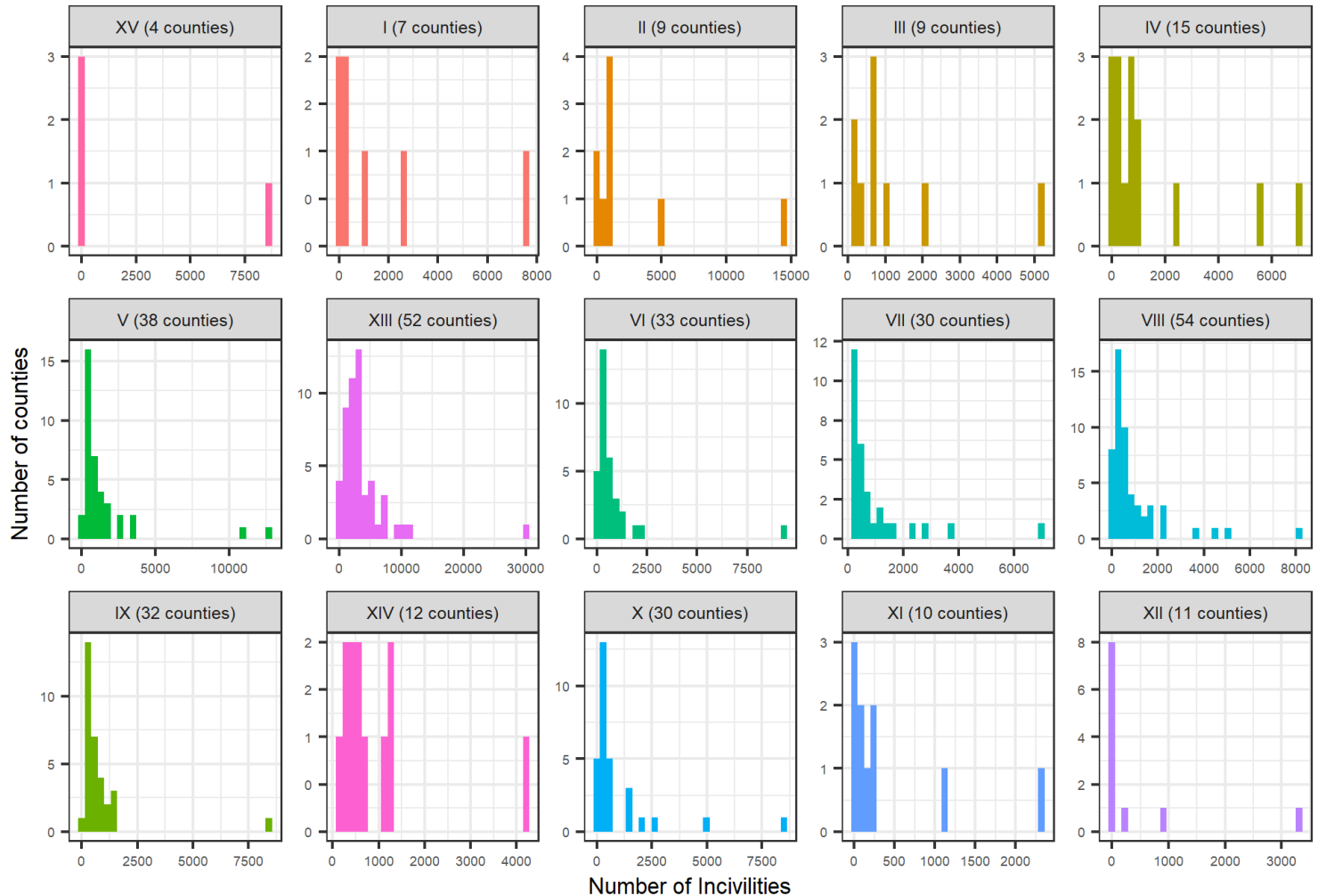
# Evolution Average County Rate of Incivilities per 1000 inhabitants



# Evolution Total Number of Incivilities by Category



# Annual Average Number of Incivilities per County



# Methodology



# Method: Panel Count Data models

- Considering as the response variable the number of incivilities:

$$\lambda_{it} = \exp(\beta_0 + \beta_1 gini_{it} + X\gamma + \alpha_i + \theta_t)$$

- where
  - $\lambda$  is the rate of incivilities,
  - $X$  is our vector of controls,
  - $\alpha'$ s are county-specific constants and
  - $\theta'$ s are time-specific constants.
- To account for differences in county population, we have:

$$\frac{\lambda_{it}}{\left(\frac{population_{it}}{1000}\right)} = \exp(\beta_0 + \beta_1 gini_{it} + X\gamma + \alpha_i + \theta_t)$$

- The model estimated using Maximum Likelihood Estimation (MLE) is:

$$\log(\lambda_{it}) = \beta_0 + \beta_1 gini_{it} + X\gamma + \alpha_i + \theta_t + \log\left(\frac{population_{it}}{1000}\right)$$

# Results

# Results: Poisson Regression

	Dependent variable: Number of Incivilities								
	Pooled			Fixed Effects			Random Effects		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
gini	0.042*** (0.001)	-0.010*** (0.001)	-0.003*** (0.001)	0.039*** (0.002)	0.021*** (0.002)	0.022*** (0.002)	0.039*** (0.001)	0.021*** (0.002)	0.020*** (0.002)
log(income)	0.395*** (0.011)	-0.317*** (0.012)	-0.186*** (0.013)	0.275*** (0.017)	0.100*** (0.018)	0.125*** (0.018)	0.277*** (0.017)	0.101*** (0.018)	0.112*** (0.018)
poverty	-0.0004*** (0.0001)	0.0003** (0.0001)	0.0001 (0.0001)	-0.0003*** (0.0002)	0.003*** (0.0002)	0.001*** (0.0002)	0.003*** (0.0001)	0.003*** (0.0002)	0.001*** (0.0002)
unemployment	-0.006*** (0.0003)	0.003*** (0.0002)	0.005*** (0.0003)	0.006*** (0.0003)	0.007*** (0.0002)	0.008*** (0.0003)	0.006*** (0.0003)	0.007*** (0.0003)	0.008*** (0.0003)
youth		-0.059*** (0.0004)	-0.050*** (0.0004)		-0.032*** (0.003)	-0.002 (0.003)		-0.031*** (0.003)	-0.010*** (0.003)
foreign		0.119*** (0.0004)	0.083*** (0.0005)		0.028*** (0.0006)	0.044*** (0.0007)		0.028*** (0.0006)	0.041*** (0.0007)
autonomy		0.004*** (0.00004)	0.003*** (0.00004)		-0.003*** (0.0001)	-0.001*** (0.0001)		-0.003*** (0.0001)	-0.002*** (0.0001)
housing			-0.010*** (0.0001)			-0.0003 (0.0002)			-0.0002 (0.0001)
log(density)			-0.009*** (0.001)			-0.469*** (0.017)			-0.268*** (0.017)
women			-0.026*** (0.0003)			0.033*** (0.001)			0.033*** (0.001)
community_org			0.002*** (0.0001)			0.002*** (0.0001)			0.002*** (0.0001)
deterrence			0.007*** (0.0001)			0.004*** (0.00007)			0.005*** (0.00007)
capitalYes			0.101*** (0.001)						0.409*** (0.080)
mayorLEFT			0.010*** (0.002)			0.044*** (0.002)			0.041*** (0.002)
mayorRIGHT			0.021*** (0.002)			0.034*** (0.002)			0.031*** (0.002)
gini:log(income)	-0.006*** (0.0002)	0.003*** (0.0002)	0.001*** (0.0003)	-0.007*** (0.0003)	-0.004*** (0.0004)	-0.004*** (0.0004)	-0.007*** (0.0003)	-0.004*** (0.0004)	-0.004*** (0.0003)
Constant	0.380*** (0.062)	5.521*** (0.067)	6.737*** (0.071)				1.409*** (0.105)	3.208*** (0.127)	2.802*** (0.185)
Year Dummies?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Dummies?	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
Observations	1,944	1,944	1,944	1,944	1,944	1,944	1,944	1,944	1,944
Log Likelihood	-285,168.100	-189,792.700	-167,855.800	-73,068.100	-71,772.252	-68,801.188	-75,895.29	-74,599.891	-71,802.581

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

# Main results and discussion

- We found strong evidence of a **significant and positive association between the rate of incivilities and income inequality**.
- Policies aimed at controlling the behaviour of **young people** do not have strong empirical support.
- The significant increase in the **foreign population** seems to be associated with a significant increase in the problem of incivilities.
- Efforts managed from the **municipalities** can be an important complement to those from the central government.
- Mayors explicitly supported by policial parties face greater challenges in terms of incivilities.

# Conclusions and Future Research

- **Increasing income inequality** or persistently high levels might be associated with the **rise of antisocial behaviours** in the form of incivilities.
- Future research should go further on the **role of local authorities** analysing the impact of specific programs in counties with similar characteristics.
- **Program evaluation** could help to elucidate the question of whether local interventions from the local governments have a causal effect on incivilities and crime rates.
- A deeper analysis of the **impact that foreign migration is having on social cohesion in the Chilean society** is an interesting avenue for future studies