

# Social Capital, Voting and Economic Outcomes

## Evidence from Italy

\*\*\*WORK IN PROGRESS\*\*\*

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CWIP Lunchtime Workshop  
5<sup>th</sup> November 2019

# Background

- ▶ Many countries display high variation in performance of sub-national governments, despite common rules and longstanding shared institutions.
- ▶ **Italy** typical example:
  - ▶ local public goods provision differs across municipalities ( ◀ Rubbish )
  - ▶ deep historical/cultural and genetic diversity ( ◀ Dialects )
- ▶ In a seminal work **Putnam (1993)** studies the performance of the twenty regional Italian governments since 1970, and finds that regional governments perform best where there are strong traditions of civic engagement (~ social capital [SK]).

However, until 2013, no official measure of Italian sub-national government performance (*OpenCivitas Performance Indicators*) ...

... plus old issue of social capital measurability.

# Aim of the paper

1. Provide a **micro-funded theoretical framework** to analyse the relationship between local government performances and social capital.
2. Test the theoretical predictions using both administrative and experimental data.

## ▶ **Administrative data :**

- ▶ identify effect of social capital on government performance;
- ▶ investigate the "impact" of social capital on voting decisions and elections of local representative

# Aim of the paper

1. Provide a **micro-funded theoretical framework** to analyse the relationship between local government performances and social capital.
2. Test the theoretical predictions using both administrative and experimental data.

## ⇒ **Experimental data** :

- ▶ disentangle response to different institutions from response to different cultural predisposition
- ▶ investigate ways social capital shapes political behaviour
- ▶ build exogenous social capital indicators

## ▶ **Administrative data** :

- ▶ identify effect of social capital on government performance;
- ▶ investigate the "impact" of social capital on voting decisions and elections of local representative

# Preview of the results 1

## Theory

- ▶ We develop a simple political agency model (Based on Besley and Smart (2007) with social capital for voters (Nannicini, Stella, Tabellini, Troiano )

Our main theoretical predictions are:

- High government performance is (+) correlated with social capital,
- In low social capital municipalities voters dislike paying taxes,
- This behavior is consistent with low trust for the institutions.

# Preview of the results 2

## Experimental Data from an On-line Survey

- ▶ We exploit variation in preferences of voters residing in the same municipality (Italy's largest cities, Rome, Milan and Turin), but **originally** coming from different regions.
- ▶ We let individuals play a **public good game** and a "**lying game**".
- ▶ Since they are exposed to the same political institutions, differences in their preferences should come from their own cultural background.

We find that

- **PG contributions** and **Trust in Institutions** similarly correlated to SK ;
- town of residence and its level of social capital do not matter ...  
... it is the **family's place of origin** (mainly mother side) that does!!!

This provides us with a way of building an **exogenous proxy for individual social capital**: proxy culture by **language** (dialects) and **local traditions** (food)

# Preview of the results 3

## Administrative Data: Italian Municipal Public Finance and Elections

At the municipal/province-level, we build a **social capital composite indicator**, that accounts for the cultural composition of the resident population.

1. Using the **OpenCivitas** data, we find that municipal performance is **highly and positively correlated** with **social capital**.
2. Estimating an incumbent popularity equations allows us to identify the electoral channel of this relationship :
  - **High social capital voters punish bad performance**
  - **Low social Capital voters punish high taxation**

# Outline

- ▶ Part I: A simple political agency model ◀ Part II
- ▶ Part II: Experimental Data: Family Culture, Language and Social Capital
- ▶ Part III: Municipality' Performance, Social Capital and Voting

1.  
A simple political agency model

# Theory

Based on Besley and Smart (2007) with social capital for voters (Nannicini, Stella, Tabellini, Troiano (2013)

- ▶ There are periods  $t = 1, 2, 3$  and public goods  $i = 1, 2, 3$ .
- ▶ In each of the first two periods, one of these goods is exogenously selected with equal probability to be provided (like a new school, hospital, or some other salient kind of public goods)
- ▶ If good  $i$  is selected to be provided in period  $t$ , the incumbent politician can choose the quality of public good  $q_t^i$ . (The scale of the public good is fixed at unity.)

# Theory

## The Government Budget Constraint

- ▶ In each period  $t$ , cost of producing a unit of quality of the public good,  $c_t = \{c_L, c_H\}$ . In each period, the probability of high cost is  $q \geq 0.5$ .
- ▶ If good  $i$  is provided, the government budget constraint is

$$q_t^i c_t + r_t = T_t, \quad c_t = \{c_L, c_H\} \quad (1)$$

- ▶ Here,  $T_t \in [0, X]$  is a property tax imposed on all voters, and  $r_t$  is the amount of rent diverted by the politician.

# Theory

## Politicians and Elections

- ▶ There are two types of politician  $i \in \{g, b\}$ . The probability that the incumbent is good is  $\pi$ .
- ▶ At the end of period 1, the incumbent faces an election against a challenger drawn from the same pool.
- ▶ A good politician maximizes social welfare. A bad politician just wants to maximize  $r_t$  and so will generally behave strategically. Politicians have a discount factor  $\delta < 1$ .

# Theory

## Voters.

- ▶ There are three groups of voters,  $i = 1, \dots, 3$ .
- ▶ Voters in group  $i$  only value public good  $i$  directly (e.g. only households with school-age children consume the services of schools etc.).
- ▶ Voters may have high social capital (HSC) or low social capital (LSC).
- ▶ Low social capital voters in group  $i$  only care about the public good that they directly consume.
- ▶ High social capital voters in group  $i$  care about all public goods.
- ▶ Finally, the good politician cares about social welfare.

# Theory

## Equilibrium; high social capital

- ▶ **Proposition 1.** If  $A \left(1 - \frac{c_L}{c_H}\right) \geq (1 - \delta)X$ , there is a pooling equilibrium in the first period where (a) if the cost is  $c_H$ , the bad politician sets  $(q_H, A)$  and is re-elected ; (ii) if the cost is  $c_L$ , the bad politician sets  $(0, X)$  and is not re-elected; the voters re-elect the incumbent iff  $(q, T) = (q_k, A)$ ,  $k = H, L$ .
- ▶ If  $A \left(1 - \frac{c_L}{c_H}\right) \leq (1 - \delta)X$ , there is a separating equilibrium in the first period where whatever the cost, the bad politician sets  $(0, X)$  and is not re-elected; all voters re-elect the incumbent iff  $(q, T) = (q_k, A)$ .

# Theory

## Equilibrium; low social capital

- ▶ **Proposition 2.** Suppose public good  $i$  is selected for provision in period 1.
- ▶ If  $A \geq (1 - \delta)X$ , there is a pooling equilibrium in the first period where whatever the cost, the bad politician sets  $(0, A)$  and is re-elected;
- ▶ (i) voters in group  $j \neq i$  re-elect the incumbent iff  $T = A, k = H, L$ ;
- ▶ (ii) voters in group  $i$  re-elect the incumbent iff  $(q, T) = (q_k, A)$ .

# Theory

## Empirical predictions

- ▶ **Prediction 1.** *With LSC, the majority of voters condition their decision to vote for the incumbent only on the tax that is set. With HSC, the voters condition their decision to vote for the incumbent both on the quality of the public good and on the tax.*

Define *performance* of the incumbent to be the value of output minus expenditure i.e. minus rent  $-r_t = c_t q_t - T_t$ .

- ▶ **Prediction 2.** *The ex ante average value of performance over two periods,  $P = -E(r_1 + r_2)$  is at least as great with HSC, and strictly greater for some values of  $A$ , as long as  $\pi > \delta$ .*

2.

Experimental Data:

Family Culture, Language and Social Capital

## What is Social Capital?

The literature has commonly identified social capital (or civic capital, civic attributes ect.) with norms and networks that enhance *trust, cooperation* and facilitate information sharing that help a group overcome the free rider problem for the production of *public goods*.

# Measuring Social Capital

Traditional measures for social capital include:

- ▶ Surveys responses on trust, blood donations (Guiso, Sapienza, Zingales (2004)) and Nannicini et al (2013);
- ▶ electoral turnout, participation in voluntary organisations (Schuller,2001), Cote and Healy (2001);
- ▶ A composite index including newspaper readership, referendum turnout, Putnam (1993);

These measures are usually all highly correlated.

	2011 Ref.	Blood	News	1974 Ref.	Tv Lic.
2011 Referendum turnout	1				
Blood Donations	0.51	1			
Newspapers copies	0.66	0.54	1		
1974 Referendum turnout	0.78	0.74	0.75	1	
Tv licence	0.55	0.57	0.33	0.59	1

# Municipality-level Observables for 2011

## Traditional Measures for Social Capital

- ▶ **Television licence** (as a share of HH)
  - ▶ All TV owners are required by Italian law to have a licence.
  - ▶ The annual cost of the licence fee is currently €112 .
  - ▶ Very easy to avoid, due to low probability of detection
  
- ▶ **Nationwide referendum turnout** (12-13 June 2011) on 3 items:
  - ▶ The repeal of recent laws on the privatization of water services,
  - ▶ A return to the nuclear energy (phased out after the 1987),
  - ▶ Criminal procedure, specifically a provision exempting the Prime Minister and the Ministers from appearing in court.

◀ Social Capital Measures

**Standard Solution:** to build municipal level composite indicators

# Municipality-level Data: Issues

Our aim is to test the theoretical predictions: the effect of social capital on (i) performance, and on (ii) incumbent popularity.

We have two issues:

1. Aggregate analysis does not allow to disentangle (endogenous) quality of institutions from (pre-determined) cultural norms (Ashworth, De Mesquita (2014,16), Fisman, Miguel (2007), Fernandez (2011)).  
→ individual-level analysis on survey data
2. Reverse Causality btw Social Capital and Performance/Popularity  
→ municipality-level analysis with exogenous social capital measures

# Individual Level Analysis: Culture, Family Origin and Social Behaviour

Large-scale **online experiment** involving 1,500 individuals who are born/reside in **Rome, Milan, and Turin**.

## **Intuition:**

Italy is a relatively “young” country (158 years). A large share (71-75%) of the population residing in the main cities has **family origins elsewhere in Italy** ◀ internal migration ⇒ **heterogeneous predisposition to social, political and cultural behaviour**, while holding institutional exposition constant.

The online experiment:

- ▶ tracks family origins and measure liaison to place of origin
- ▶ collects info on political preferences and behaviour
- ▶ asks questions on social capital (similar to municipal-level data)

# Tracking origins: Use of Dialect and Food

- ▶ We collect detailed information on the **place of birth of parents and grandparents**, reasons for moving, year of moving etc.
- ▶ To measure cultural “distance” between place of origin and place of residence:
  1. use **dialect audio/text of Italian sentences/sayings**.  
We randomize over i) local dialect, ii) dialect of place of origin or iii) unrelated dialect.
  2. Example of audio files: ▶ You have to go right now  
Example of written test ▶ watermelon
  3. explore **eating preferences** for culturally relevant occasions (Christmas/Easter/Sunday) ◀ food

# Survey Games

Participants plays two games:

- ▶ **Public Good Game**

- proxy for cooperation (to public good), willingness to pay taxes -

- ▶ paired respondents are simultaneously asked to contribute ( $c_i$ ) to a joint account and to guess the contribution of the other respondent ( $c_j$ );

- ▶  $c \in [0, 20Euro]$ . Payoffs  $\pi_i = (20 - c_i) + 3/4(c_i + c_j)$

- ▶ **Lying Game (coin toss game)**

- proxy for propensity to cheat, evade taxes -

- ▶ toss a coin ten times;

- ▶ report the number of times "HEAD" has occurred; ▶ coins

- ▶ Respondents who reply "More than 8" may receive 20 Euros.

# Culture, Family Origin and Social Behaviour: Analysis

## OLS regressions

- ▶ Dependent variables: Public good contributions, Belief about the partner contribution, Trust in Institution, Number of Heads
- ▶ Controls:
  - ▶ Average contributions of those with same origin as respondent.
  - ▶ Social Capital of respondent, of parents and grand parents.
  - ▶ Usual demographic controls.

# Dependent Variable: Contribution to Public Good/1

	(1)	(2)	(3)	(4)
Turin residence dummy	-0.624*** (0.16)	-0.685*** (0.157)	-0.16 (0.936)	-0.241 (0.768)
Rome residence dummy	-0.538*** (0.0964)	-0.646*** (0.166)	-0.113 (0.52)	-0.448 (0.497)
Abruzzo			-1.515** (0.582)	-0.809 (0.545)
Campania			-1.308** (0.508)	-1.756*** (0.404)
Emilia Romagna			-0.526* (0.287)	-0.662** (0.302)
Friuli			5.866*** (0.0201)	5.847*** (0.728)
Lazio			-0.544 (0.898)	-0.548 (0.807)
Liguria			1.478*** (0.258)	1.628*** (0.269)
Piemonte			-0.495 (0.49)	-0.225 (0.455)
Puglia			-0.36 (0.343)	-0.345 (0.299)
Sicilia			-1.061** (0.381)	-1.171*** (0.361)
Toscana			0.565 (0.357)	1.082*** (0.325)
Observations	1,548	1,498	1,548	1,498
R-squared	0.003	0.087	0.012	0.099
Controls	No	Yes	No	Yes

## Dependent Variable: Contribution to Public Good/2

	(1)	(2)	(3)	(4)	(5)	(6)
Turin place of residence dummy	-0.685*** (0.157)	-0.0847 (0.179)	0.368 (0.309)	0.133 (0.324)	0.0507 (0.227)	0.321 (0.374)
Rome place of residence dummy	-0.646*** (0.166)	-0.122 (0.146)	0.376 (0.264)	0.16 (0.219)	0.0353 (0.159)	0.466 (0.323)
Birth Place Public Good Contribution		1.056*** (0.119)	0.696*** (0.172)	0.806*** (0.125)	0.925*** (0.12)	0.627*** (0.191)
Mother Birth Place Public Good Contribution			0.644** (0.236)			0.315 -0.247
Father Birth Place Public Good Contribution			0.530*** (0.171)			0.446 (0.27)
Maternal grandmother Birth Place Public Good Contribution				0.646** (0.256)		0.490** (0.214)
Maternal grandfather Birth Place Public Good Contribution				0.323 (0.372)		0.12 (0.351)
Paternal grandmother Birth Place Public Good Contribution					0.699*** (0.22)	0.542** (0.202)
Paternal grandfather Birth Place Public Good Contribution					-0.07 (0.464)	-0.425 (0.59)
Observations	1,498	1,498	1,498	1,498	1,498	1,498
R-squared	0.087	0.097	0.107	0.107	0.103	0.113
Controls	Yes	Yes	Yes	Yes	Yes	Yes

## Dependent Variable: Contribution to Public Good/3

	(1)	(2)	(3)	(4)
Turin	-0.0234 (0.194)	-0.583 (0.352)	-0.445* (0.239)	-0.244 (0.338)
Rome	-0.28 (0.19)	-0.522** (0.223)	-0.639*** (0.212)	-0.121 (0.174)
Birth Place Public Good Contribution	1.033*** (0.164)	0.414 (0.245)	0.721*** (0.173)	0.837*** (0.204)
Birth Place Social Capital	0.242*** (0.0791)	-0.481 (0.304)	-0.0145 (0.229)	-0.548** (0.237)
Father Social Capital		-0.159 (0.307)		
Mother Social Capital		0.591* (0.31)		
Maternal Grandmother Social Capital			0.552*** (0.154)	
Maternal Grandfather Social Capital			-0.195 (0.183)	
Paternal Grandmother Social Capital				0.443 (0.405)
Paternal Grandfather Social Capital				-0.0721 (0.532)
Observations	1,419	928	939	915
R-squared	0.097	0.152	0.123	0.118
Controls	Yes	Yes	Yes	Yes

## Dependent Variable: Trust in the State

	(1)	(2)	(3)	(4)
Turin		0.0787 (0.122)	0.0462 (0.0887)	0.0398 (0.144)
Rome		-0.0687 (0.12)	-0.0849 (0.135)	-0.0784 (0.186)
Maternal Grandmother's Social Capital	0.0579** (0.0211)	0.0712** (0.026)	0.0532* (0.0263)	0.159* (0.0792)
Father's Social Capital				0.0192 (0.0823)
Mother's Social Capital				-0.16 (0.118)
BIG 5 Conscientious			0.0396*** (0.0127)	0.0473*** (0.0154)
Observations	1,036	1,036	1,004	806
R-squared	0.102	0.13	0.21	0.215
Region of birth dummies	No	Yes	Yes	Yes
Controls	No	Yes	Yes	Yes

3.

## Municipalities' Performance, social capital and voting

# Italian Municipalities: Key facts

- ▶ 8,100 municipalities (**comuni**), 6,700 in "regular" regions;
- ▶ Mayor (**sindaco**) elected on 5-year term (2T limits);
- ▶ **Revenue** of comuni come from two main sources:
  - ▶ transfers from upper levels of government;
  - ▶ own revenues: **property tax (ICI/IMU)**, some minor taxes (waste disposal, income tax and electricity surcharges ) and fees
- ▶ Performance Score (2010) from **OpenCivitas project**;
- ▶ Electoral data from 2007/2009, plus incumbent characteristics;
- ▶ Controls Variables (2010): income, population, geography.

# The OpenCivitas Project

- ▶ Since 2012 the Italian government has been conducting a comprehensive analysis of expenditures and output of municipalities (N=6700)
  - ▶ Evaluation of Standard expenditure needs
  - ▶ Evaluation of efficiency in the provision of local public services (performance indicators). [◀ OpenCivitas](#)
  - ▶ **Performance indicators** and standard **social capital** measures seem to be highly correlated. [◀ trends](#)

# Social Capital of Municipalities

We propose three alternatives:

1. **Standard SK**: based on principal component between 2011 referendum turnout and TV licence payments, at municipal level.

**NEW Exogenous** weighted SK indicators accounting for composition of population, based on provincial level immigration flows from 2000.

- ▶ Share of population born locally (same municipality or province)
- ▶ Share of population born in other regions

2. **Weighted SK1**: using aggregated indicators (2011 referendum turnout and TV licence payments)
3. **Survey Weighted SK2**: using individual level data from our survey and aggregating data by place of birth of mother/grand mother.

# Municipalities' Performance and Standard Social Capital

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Social capital</b>	0.381*** [0.024]			0.267*** [0.027]			0.168*** [0.032]
Left local gov.		-0.225** [0.094]			-0.05 [0.083]		-0.06 [0.083]
Right local gov.		0.350*** [0.083]			-0.082 [0.073]		-0.057 [0.074]
Left Incumbent		-0.338*** [0.077]			0.029 [0.073]		-0.035 [0.074]
Term limit		-0.669*** [0.241]			-0.184 [0.198]		-0.182 [0.202]
Property tax			-0.002*** [0.000]			-0.001* [0.000]	-0.001* [0.000]
Grants			-0.001*** [0.000]			-0.001** [0.000]	-0.001* [0.000]
Control variables	No	No	No	Yes	Yes	Yes	Yes
Regional dummies	No	No	No	Yes	Yes	Yes	Yes
Observations	6,449	6,270	6,284	6,449	6,270	6,284	6,270
R-squared	0.035	0.046	0.261	0.258	0.271	0.274	0.279

Notes: p-values in brackets, \* =  $p < 0.1$ , \*\* =  $p < 0.05$ , \*\*\* =  $p < 0.01$ . All variables are standardized. Dependent variable: Municipal index of performance. Controls include: municipality income, population, geographical features, regional dummies, intergovernmental grants as percentage variation between 2008 and 2010, public expenditures as percentage variation.

# Municipalities' Performance and Exogenous Social Capital

	Local	Weighted	Weighted	Weighted
	S.K	Local S.K.	Mother S.K.	Granny-M S.K.
Social capital	0.168*** [0.032]	0.7053** [0.0846]	0.7020** [0.0754]	0.8020*** [0.0200]
Left local gov.	-0.06 [0.083]	-0.045 [0.083]	-0.041 [0.083]	-0.04 [0.083]
Right local gov.	-0.057 [0.074]	-0.079 [0.074]	-0.073 [0.073]	-0.072 [0.073]
Left Incumbent	-0.035 [0.074]	0.025 [0.073]	0.015 [0.073]	0.018 [0.073]
Margin of Victory	0.001 [0.001]	0.001 [0.001]	0.001 [0.001]	0.001 [0.001]
Term limit	-0.182 [0.202]	-0.169 [0.202]	-0.172 [0.203]	-0.179 [0.203]
Property tax	-0.001* [0.000]	-0.001* [0.000]	-0.001* [0.000]	-0.001* [0.000]
Grants _pp2010	-0.001* [0.000]	-0.001* [0.000]	-0.001** [0.000]	-0.001* [0.000]
Control variables	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes
Observations	6,270	6,270	6,270	6,270
R-squared	0.279	0.275	0.275	0.276

Notes: p-values in brackets, \* =  $p < 0.1$ , \*\* =  $p < 0.05$ , \*\*\* =  $p < 0.01$ . All variables are standardized. Dependent variable: Municipal index of performance. Controls include: municipality income, population, geographical features, regional dummies, intergovernmental grants as percentage variation between 2008 and 2010, public expenditures as percentage variation.

# Political Selection

## Popularity Equations

- ▶ We focus on mayors who have been «hit» by the OpenCivitas index, and were (at least partially) "responsible" for it:
  - ▶ Those elected in 2007-08 who went for re-election in 2012-13 in which mayors and runnerup were partisan
  - ▶ 407 observations
- ▶ Social capital (principal component between 2011 referendum turnout and tv licence payments)
  - ▶ High social capital dummy (above median of the distribution)
- ▶ Performance score from 1st round of Opencivitas (2010)
- ▶ Property tax, grants, and expenditures % change from the middle of the term.
- ▶ Control variables: Income, population, geographical features, regional dummies, mayors characteristics.

# All Municipalities: Mayors' Popularity Equations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Property Tax	-0.195*** [0.0613]		-0.184*** [0.0606]	-0.211*** [0.0637]		-0.199*** [0.0623]	-0.212*** [0.0699]
Municipal Performance		0.149** [0.0594]	0.137** [0.0588]		0.154** [0.0601]	0.142** [0.0589]	0.213*** [0.0716]
Property Tax X Centre-North							-0.157 [0.120]
PerformanceX Centre-North							0.0252 [0.144]
Current Expenditures				0.135* [0.0748]	0.0856 [0.0758]	0.115 [0.0736]	0.112 [0.0732]
Current Transfers				-0.0882 [0.0633]	-0.0445 [0.0644]	-0.0882 [0.0622]	-0.0923 [0.0623]
Municipality Income				-0.182* [0.0983]	-0.152 [0.103]	-0.185* [0.0996]	-0.178* [0.100]
Mayor-University Degree				0.238 [0.200]	0.224 [0.193]	0.208 [0.196]	0.216 [0.201]
Mayor - High School Degree				0.132 [0.193]	0.112 [0.187]	0.092 [0.190]	0.0951 [0.193]
Mayor-Male				0.318* [0.179]	0.382** [0.180]	0.335* [0.179]	0.319* [0.178]
Mayor-Left				-0.287 [0.177]	-0.301* [0.180]	-0.292 [0.179]	-0.289 [0.177]
Mayor-Lawyer				0.289 [0.194]	0.382** [0.193]	0.328* [0.194]	0.322 [0.196]
Observations	407	407	407	400	400	400	400
R-squared	0.055	0.049	0.069	0.218	0.211	0.232	0.236
Regional Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	No	No	Yes	Yes	Yes	Yes

# High and Low Social Capital Municipalities: Mayors' Popularity Equations

Mayors' Popularity Equations							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>High Social Capital</b>							
Property Tax	-0.0729 [0.0979]		-0.0971 [0.104]	-0.0927 [0.101]		-0.0729 [0.0979]	0.0164 [0.108]
Municipal Performance		0.196** [0.0979]	0.192* [0.0992]		0.188** [0.0852]	0.183** [0.0865]	0.315** [0.138]
Property Tax X Centre-North							-0.241 [0.189]
Performance X Centre-North							-0.225 [0.196]
Observations	203	203	203	200	200	200	200
R-squared	0.076	0.073	0.078	0.397	0.414	0.416	0.436
Controls	No	No	No	Yes	Yes	Yes	Yes
<b>Low Social Capital</b>							
Property Tax	-0.272*** [0.0787]		-0.272*** [0.0787]	-0.250*** [0.0952]		-0.242** [0.0936]	-0.275** [0.108]
Municipal Performance		0.104 [0.0770]	0.094 [0.0645]		0.119 [0.0780]	0.106 [0.0734]	0.114 [0.0779]
Property Tax X Centre-North							-0.0245 [0.172]
Performance X Centre-North							0.132 [0.202]
Observations	204	204	204	200	200	200	200
R-squared	0.137	0.09	0.137	0.236	0.212	0.243	0.245
Controls	No	No	No	Yes	Yes	Yes	Yes

# Thank you !!!!



# Examples of rubbish collection in Italy

← back



## Linguistic map of Italy



1. Translate dialect saying into Italian and explain meaning.
2. List all terms you use for a specific word: (“watermelon”, “girlfriend/boyfriend”, “uncle” and “auntie”, “table”, “chair”, “towel”, “money”)
3. Translate a list of Italian words into your own dialect

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# Municipalities' Performance and the OPENCIVITAS index

An example: Reggio Emilia vs Reggio Calabria, similar names but different performances

Reggio Emilia		Reggio Calabria
€ 128,800,683	Actual expenditures	€ 104,323,071
170,086	Population	186,547
757	Expenditures per capita	559
€ 131,361,769	Standard expenditure needs	€ 124,245,705
- 1.95%	Historical expenditures – standard expenditures	-16.03 %
+15.95%	Output produced - Output standard	-22.70 %
	Performance (0 – 10)	

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# OpenCivitas Performance indicators

## Steps in the calculation of the performance indicators

- ▶ Example: [◀ Reggio](#)





