SOSEWEST

Workshop Economico, Statistico e Tecnologico

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DATA SCIENCE E RESPONSABILITÀ CIVICA

DATI APERTI AL SERVIZIO DI ENTI LOCALI E CITTADINI

Social Capital, Voting and Economic Outcomes: evidence from Italy

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Background

- Many countries display high variation in performance of sub-national governments, despite common rules and longstanding shared institutions.

- **Italy** typical example:
  - process of unification was completed in 1861;
  - deep historical/cultural and genetic diversity (◂ Dialects)
  - local public goods provision differs across municipalities (◂ Rubbish)

- 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 ($\sim$ 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.


Linguistic map of Italy
Romance languages
Germanic languages
Slavic languages
Other languages

Examples of rubbish collection in Italy

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Aims

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

Aims

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.

$\Rightarrow$ **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

Roadmap

- To investigate the relationship between SK and performance we need:

1. A measure of social capital; ◂ contribution 1
2. A measure of municipal performance; **THANKS TO SOSE WE HAVE ONE!!!**
3. A theory guiding the empirical analysis. ◂ contribution 2(a)
4. A way of testing the theoretical predictions. ◂ contribution 2(b)

Contribution 1

Measuring 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 three issues:

1. All existing measures are highly correlated, so it is not possible to shed light on the mechanisms;
   $\rightarrow$ individual-level analysis on survey data

2. Aggregate analysis does not allow to disentangle (endogenous) quality of institutions from (pre-determined) cultural norms (Ashoworth, De Mesquita (2014,16), Fisman, Miguel (2007), Fernandez (2011)).
   $\rightarrow$ individual-level analysis on survey data

3. Reverse Causality btw Social Capital and Performance/Popularity
   $\rightarrow$ 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 $\Rightarrow$ 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);
  - $c \in [0, 20 Euro]$. 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;
  - 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	-0.624***	-0.685***	-0.16	-0.241
residence dummy	(0.16)	(0.157)	(0.936)	(0.768)
Rome	-0.538***	-0.646***	-0.113	-0.448
residence dummy	(0.0964)	(0.166)	(0.52)	(0.497)
Abruzzo			-1.515**	-0.809
			(0.582)	(0.545)
Campania			-1.308**	-1.756***
			(0.508)	(0.404)
Emilia Romagna			-0.526*	-0.662**
			(0.287)	(0.302)
Friuli			5.866***	5.847***
			(0.0201)	(0.728)
Lazio			-0.544	-0.548
			(0.898)	(0.807)
Liguria			1.478***	1.628***
			(0.258)	(0.269)
Piemonte			-0.495	-0.225
			(0.49)	(0.455)
Puglia			-0.36	-0.345
			(0.343)	(0.299)
Sicilia			-1.061**	-1.171***
			(0.381)	(0.361)
Toscana			0.565	1.082***
			(0.357)	(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

SE Clustered at Birth Region of respondent.

Dependent Variable: Contribution to Public Good/2

	(1)	(2)	(3)	(4)	(5)	(6)
Turin	-0.685***	-0.0847	0.368	0.133	0.0507	0.321
place of residence dummy	(0.157)	(0.179)	(0.309)	(0.324)	(0.227)	(0.374)
Rome	-0.646***	-0.122	0.376	0.16	0.0353	0.466
place of residence dummy	(0.166)	(0.146)	(0.264)	(0.219)	(0.159)	(0.323)
Birth Place Public Good Contribution		1.056***	0.696***	0.806***	0.925***	0.627***
		(0.119)	(0.172)	(0.125)	(0.12)	(0.191)
Mother Birth Place Public Good Contribution			0.644**			0.315
			(0.236)			-0.247
Father Birth Place Public Good Contribution			0.530***			0.446
			(0.171)			(0.27)
Maternal grandmother Birth Place Public Good Contribution				0.646**		0.490**
				(0.256)		(0.214)
Maternal grandfather Birth Place Public Good Contribution				0.323		0.12
				(0.372)		(0.351)
Paternal grandmother Birth Place Public Good Contribution					0.699***	0.542**
					(0.22)	(0.202)
Paternal grandfather Birth Place Public Good Contribution					-0.07	-0.425
					(0.464)	(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	-0.583	-0.445*	-0.244
	(0.194)	(0.352)	(0.239)	(0.338)
Rome	-0.28	-0.522**	-0.639***	-0.121
	(0.19)	(0.223)	(0.212)	(0.174)
Birth Place Public Good Contribution	1.033***	0.414	0.721***	0.837***
	(0.164)	(0.245)	(0.173)	(0.204)
Birth Place Social Capital	0.242***	-0.481	-0.0145	-0.548**
	(0.0791)	(0.304)	(0.229)	(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	0.0462	0.0398
		(0.122)	(0.0887)	(0.144)
Rome		-0.0687	-0.0849	-0.0784
		(0.12)	(0.135)	(0.186)
Maternal Grandmother's Social Capita	0.0579**	0.0712**	0.0532*	0.159*
	(0.0211)	(0.026)	(0.0263)	(0.0792)
Father's Social Capital				0.0192
				(0.0823)
Mother's Social Capital				-0.16
				(0.118)
BIG 5			0.0396***	0.0473***
Conscensious			(0.0127)	(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

Contribution 2

Social Capital and Municipal Performance

Theory

Highlights

- We develop a simple political agency model (Based on Besley and Smart (2007) with social capital for voters (Nannicini, Stella, Tabellini, Troiano, 2013)

- "Within each region, there are two kinds of voters: "civic" voters, who behave altruistically and condition their retrospective vote on aggregate welfare.... And "uncivic" voters, who condition their vote on their own welfare".

- However, unlike Nanncini et. al. (2013), we assume explicitly that HSC voters of type i can observe the quality of the other groups public good even if they do not directly experience the good, whereas LSC do not.

Our main testable predictions are:

$\rightarrow$ In low social capital municipalities voters base their voting choices on taxes,

$\rightarrow$ In high social capital municipalities voters base their voting choices on taxes and performances,

$\rightarrow$ High government performance is (+) correlated with social capital.

Municipal Performance

The OpenCivitas Indicators

- Since 2011 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

Old and New Exogenous Measures

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)
Social capital	0.381***			0.267***			0.168***
	[0.024]			[0.027]			[0.032]
Left local gov.		-0.225**			-0.05		-0.06
		[0.094]			[0.083]		[0.083]
Right local gov.		0.350***			-0.082		-0.057
		[0.083]			[0.073]		[0.074]
Left Incumbent		-0.338***			0.029		-0.035
		[0.077]			[0.073]		[0.074]
Term limit		-0.669***			-0.184		-0.182
		[0.241]			[0.198]		[0.202]
Property tax			-0.002***			-0.001*	-0.001*
			[0.000]			[0.000]	[0.000]
Grants			-0.001***			-0.001**	-0.001*
			[0.000]			[0.000]	[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 S.K	Weighted Local S.K.	Weighted Mother S.K.	Weighted Granny-M S.K.
Social capital	0.168***	0.7053**	0.7020**	0.8020***
	[0.032]	[0.0846]	[0.0754]	[0.0200]
Left local gov.	-0.06	-0.045	-0.041	-0.04
	[0.083]	[0.083]	[0.083]	[0.083]
Right local gov.	-0.057	-0.079	-0.073	-0.072
	[0.074]	[0.074]	[0.073]	[0.073]
Left Incumbent	-0.035	0.025	0.015	0.018
	[0.074]	[0.073]	[0.073]	[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	-0.169	-0.172	-0.179
	[0.202]	[0.202]	[0.203]	[0.203]
Property tax	-0.001*	-0.001*	-0.001*	-0.001*
	[0.000]	[0.000]	[0.000]	[0.000]
Grants _pp2010	-0.001*	-0.001*	-0.001**	-0.001*
	[0.000]	[0.000]	[0.000]	[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.

Thank you !!!!

Preview of contribution 1

Experimental Data from on 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) back

Preview of contribution 2(a)

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.

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Preview of contribution 2(b)

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.

- Using the **OpenCivitas** data, we find that municipal performance is **highly** and **positively correlated** with **social capital**.

- (Work in progress) Estimating an incumbent popularity equations allows us to identify the electoral channel of this relationship :
  $\rightarrow$ **High social capital voters punish bad performance**
  $\rightarrow$ **Low social capital voters punish high taxation**

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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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LOMBARDY
MILANESE RISOTTO
TRENTINO-ALTO-ADIGE
SPECK
FRIULI-VENEZIA-GIULIA
PROSCIUTTO SAN DANIELE
AOSTA VALLEY
FONTINA
VENETO
RISI E BISI
PIEDMONT
STUFFED PASTA
EMILIA ROMAGNA
PARMESAN
LIGURIA
BASIL PESTO
MARCHE
STUFFED OLIVES
UMBRIA
SALAMI
TUSCANY
FIORENTINA STEAK
ABRUZZO
SPAGHETTI ALLA CHITARRA
LAZIO
ARTICHOKES
MOLISE
FUSILLI
PUGLIA
MIXED SEAFOOD
SARDINIA
GNOCCHETTI SARDI
CAMPANIA
PIZZA
BASILICATA
FENNEL SAUSAGES
SICILY
OLIVES
CALABRIA
PEPERONCINO

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Social Capital

Distribution of social capital across Italian regions

regions	2011 Referendum turnout		Tv licence	
	mean	std.dev.	mean	std.dev.
Piemonte	58%	7%	64%	12%
Lombardia	54%	6%	70%	9%
Veneto	58%	6%	68%	8%
Liguria	58%	6%	64%	11%
Emilia-Romagna	62%	7%	72%	8%
Toscana	63%	6%	72%	8%
Umbria	58%	6%	67%	7%
Marche	61%	5%	72%	8%
Lazio	58%	6%	59%	10%
Molise	57%	8%	66%	9%
Abruzzo	57%	6%	66%	11%
Campania	51%	7%	59%	14%
Puglia	53%	6%	72%	8%
Basilicata	51%	7%	65%	8%
Calabria	51%	8%	56%	13%

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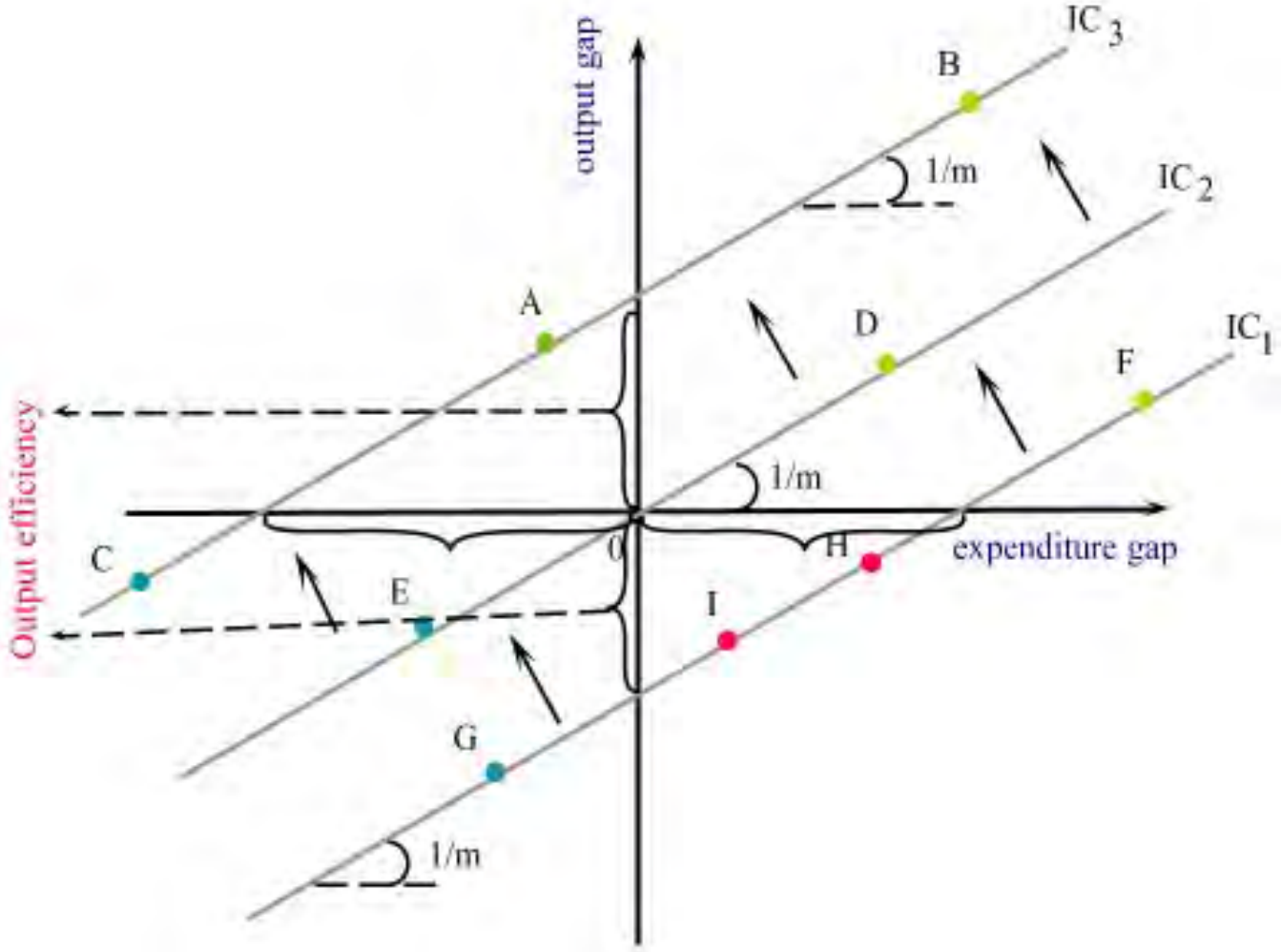
OpenCivitas Performance indicators

Steps in the calculation of the performance indicators



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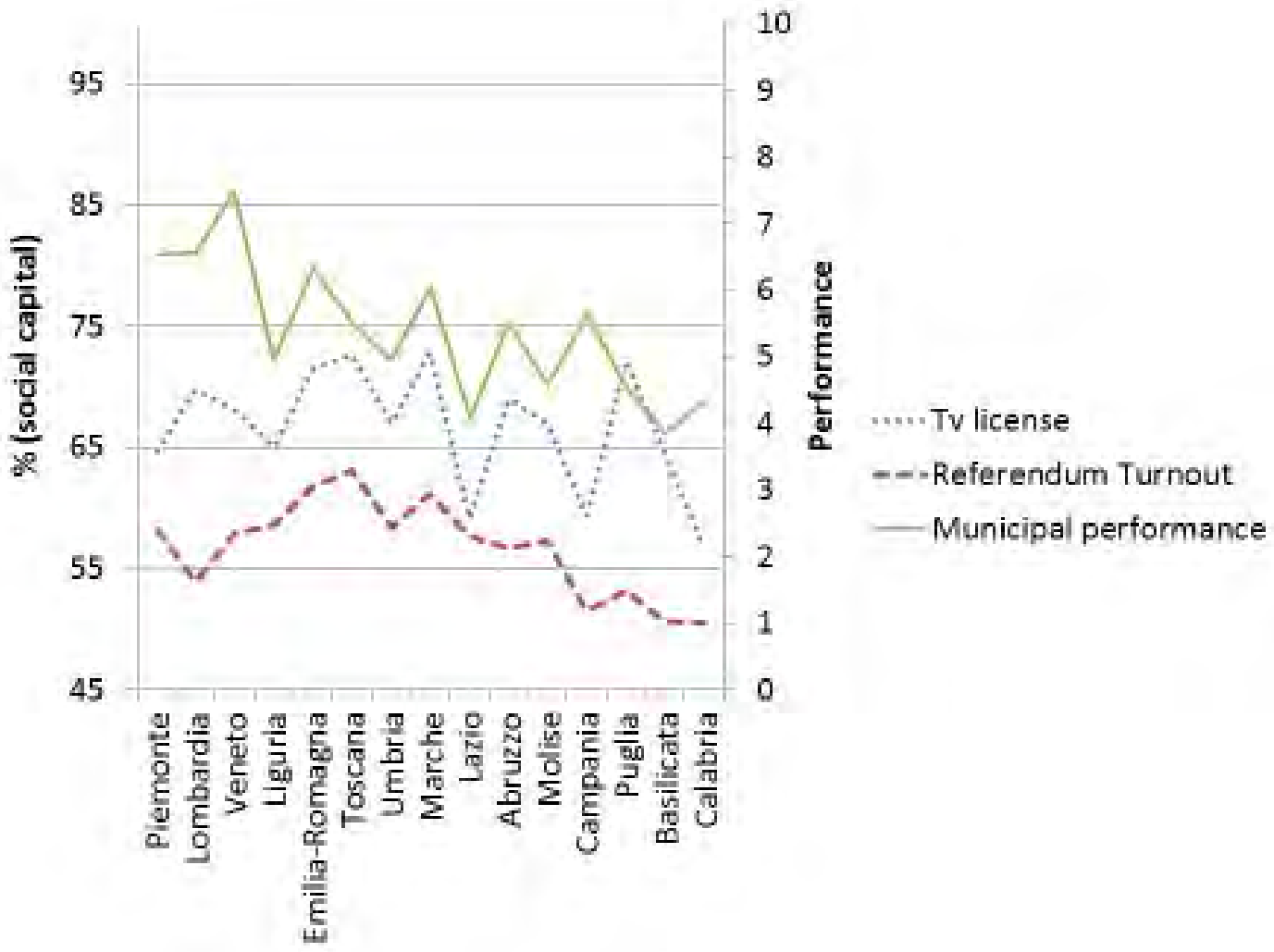
Social Capital and Municipal Performance

Trends



Towns/Areas	Residents	% Indigenous born	% born another region
Milano	3,038,420	26.97	25.69
Torino	2,247,780	26.83	26.28
Roma	3,997,465	47.82	20.70
North-West	15,765,567	27.04	20.53
Genova	855,834	50.32	22.22
North-East	11,447,805	32.25	13.24
Bologna	976,243	27.95	20.08
Center	11,600,675	41.30	16.70
Firenze	973,145	30.14	15.94
South	13,977,431	49.07	5.74
Napoli	3,054,956	48.52	2.54
Bari	1,247,303	59.78	4.11
Palermo	1,243,585	63.00	2.93
Italy Overall	59,433,744	38.95	13.04

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