

Local institutions and human capital formation in preindustrial economies:

Evidence from the former Kingdom of Valencia

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Motivation

- **Education** (and human capital) a key element for **human progress** (and economic development).

The Enlightenment and the notion of **education** and **instruction**.

Adam Smith (1776: “Wealth of Nations”, Book II, Chapter 1) → “...*acquisition of...talents*”

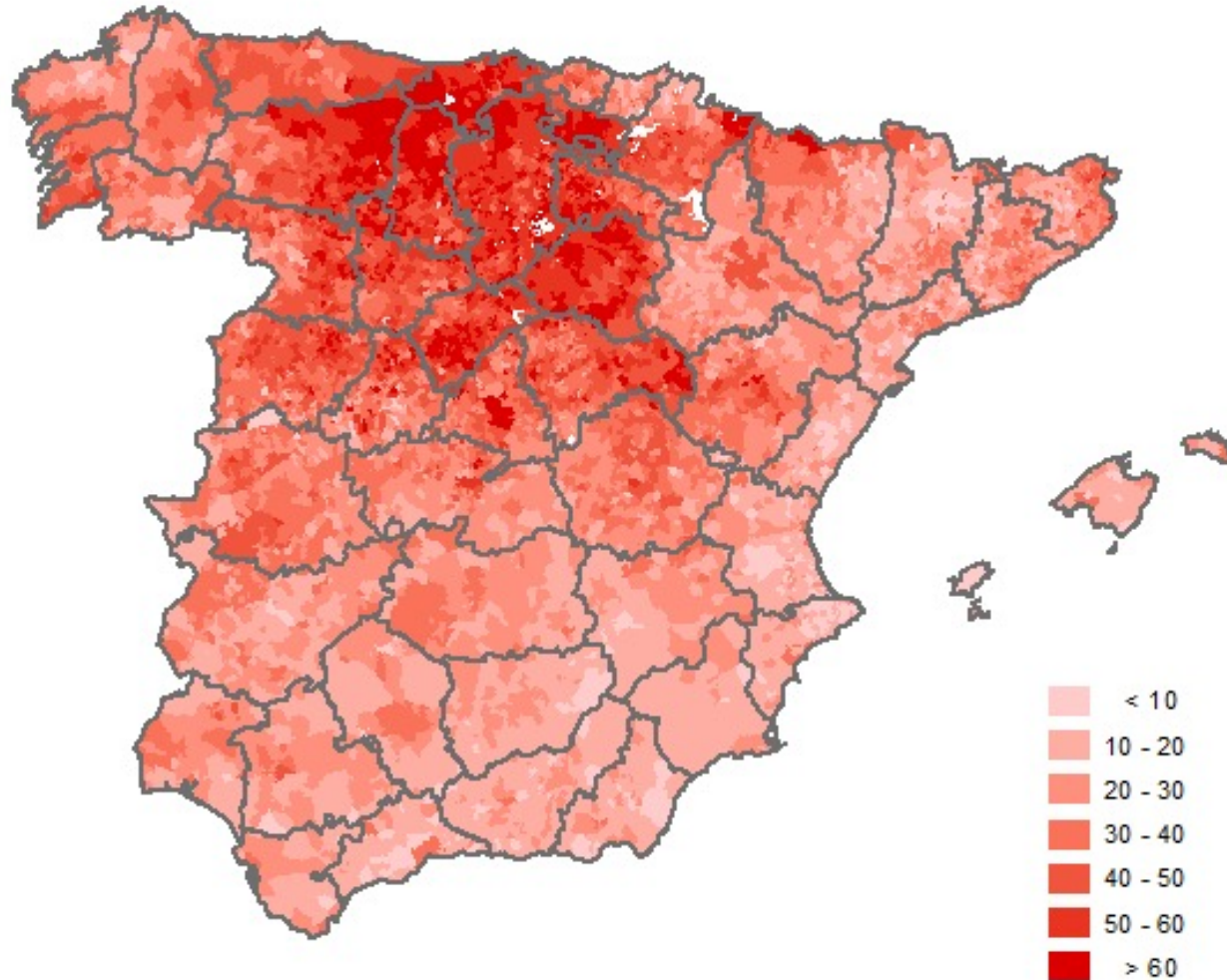
- **Mass-schooling** [reading, writing, counting] and **State-formation** during 19th and 20th centuries, but **traditional** (or preindustrial) **societies**?

Learning (place, methodology...) less structured (formal schooling, informal learning) and a **local affair**.

In **Spain**, sizable differences in male (not female) literacy by **mid-19th century** (Núñez, 1992)

Motivation – Spain, 1860

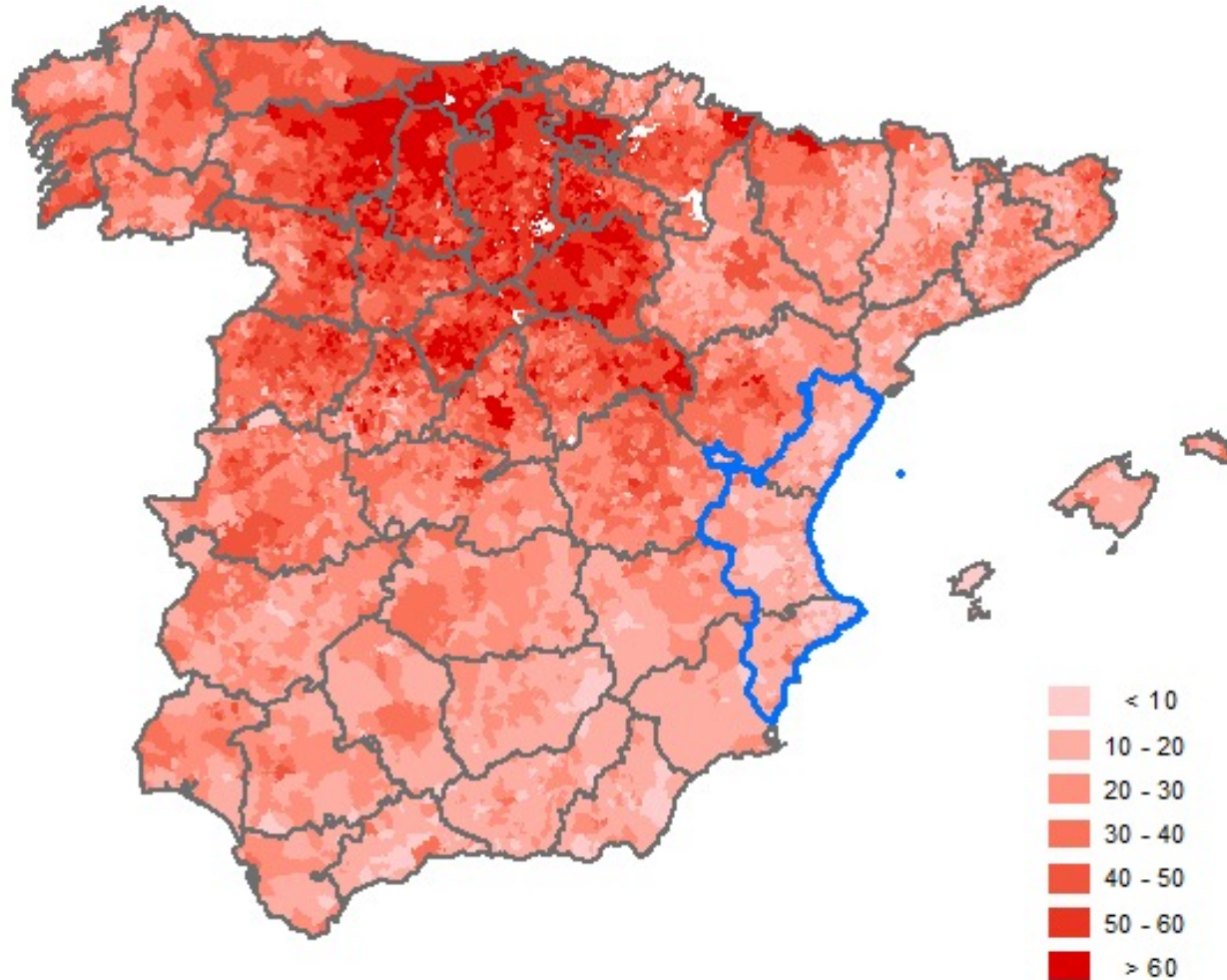
Map. Male literacy (%) in Spain, 1860.



Note: Literacy refers to the **share of the male population who can read and write.**

Motivation – Spain, 1860

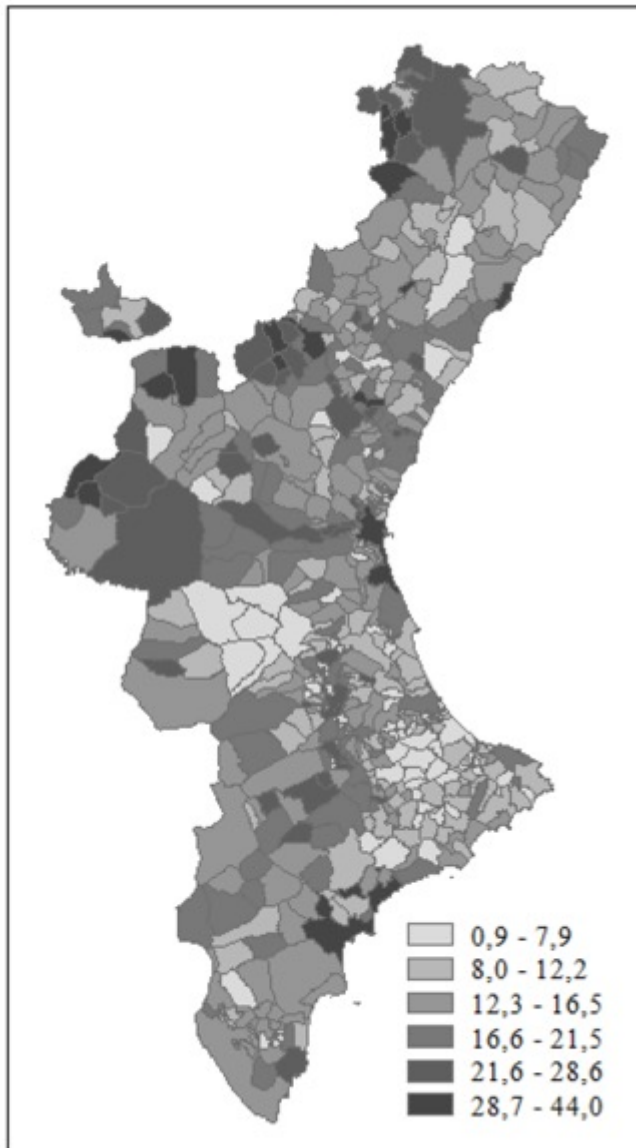
Map. Male literacy (%) in Spain, 1860.



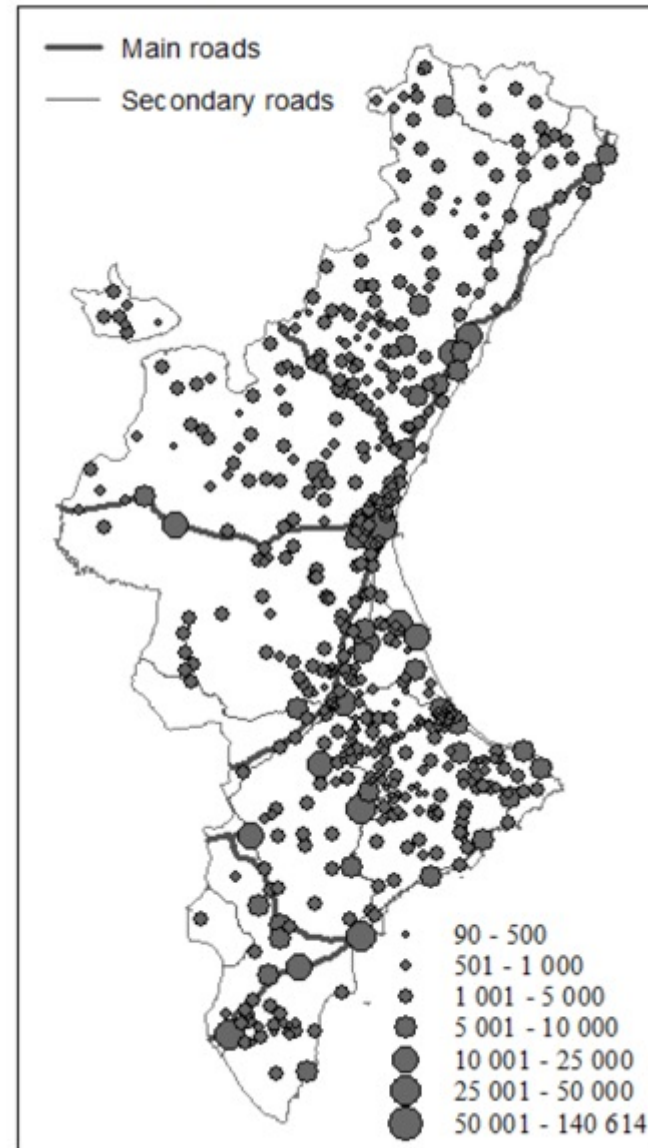
Note: Literacy refers to the **share of the male population who can read and write.**

Motivation – Kingdom of Valencia, 1860

Male literacy (%)



Population and road network



Motivation – Kingdom of Valencia, 1860

- What drove this **spatial variation**? In the absence of **strong State** (education system) → **education** is a **local affair**.

Local conditions → **social demand** for education.

Local conditions → **supply** (schools, teachers...)

- So, what makes you different?

Location

Factor endowment

Institutions

...

Motivation – Kingdom of Valencia, 1860

- As **local specificities** relevant, worth noting that **political power** delegated to **private agents** [Lordships] in the **Old Regime**.

1. **Royal domains**

2. **Lordships**

- 2.1 **Secular** (*Duque de Gandía; Duque de Cardona; Pedro Centelles...*)

- 2.2 **Ecclesiastical**

Archbishopric/Bishopric

Military Order (Santiago, Montesa...)

Motivation – Kingdom of Valencia, 1860

- Since **Middle Ages** (and until **early 19th century**) **Lords** responsible for **administration** and **justice**.

Crown kept under its control **major cities** and **strategic locations** (ports, crossroads...)

- Besides, **vassalage** and thereby **revenues** (taxes, rents...) and **labour services**.



**Institutional
arrangements**

Motivation – Kingdom of Valencia, 1860



- Do we have every **institutional arrangement**? Not really.

Lord (or *Señor*) – Place (or *Pueblo*)

Motivation – Kingdom of Valencia, 1860

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Lord (or *Señor*) – Place (or *Pueblo*)

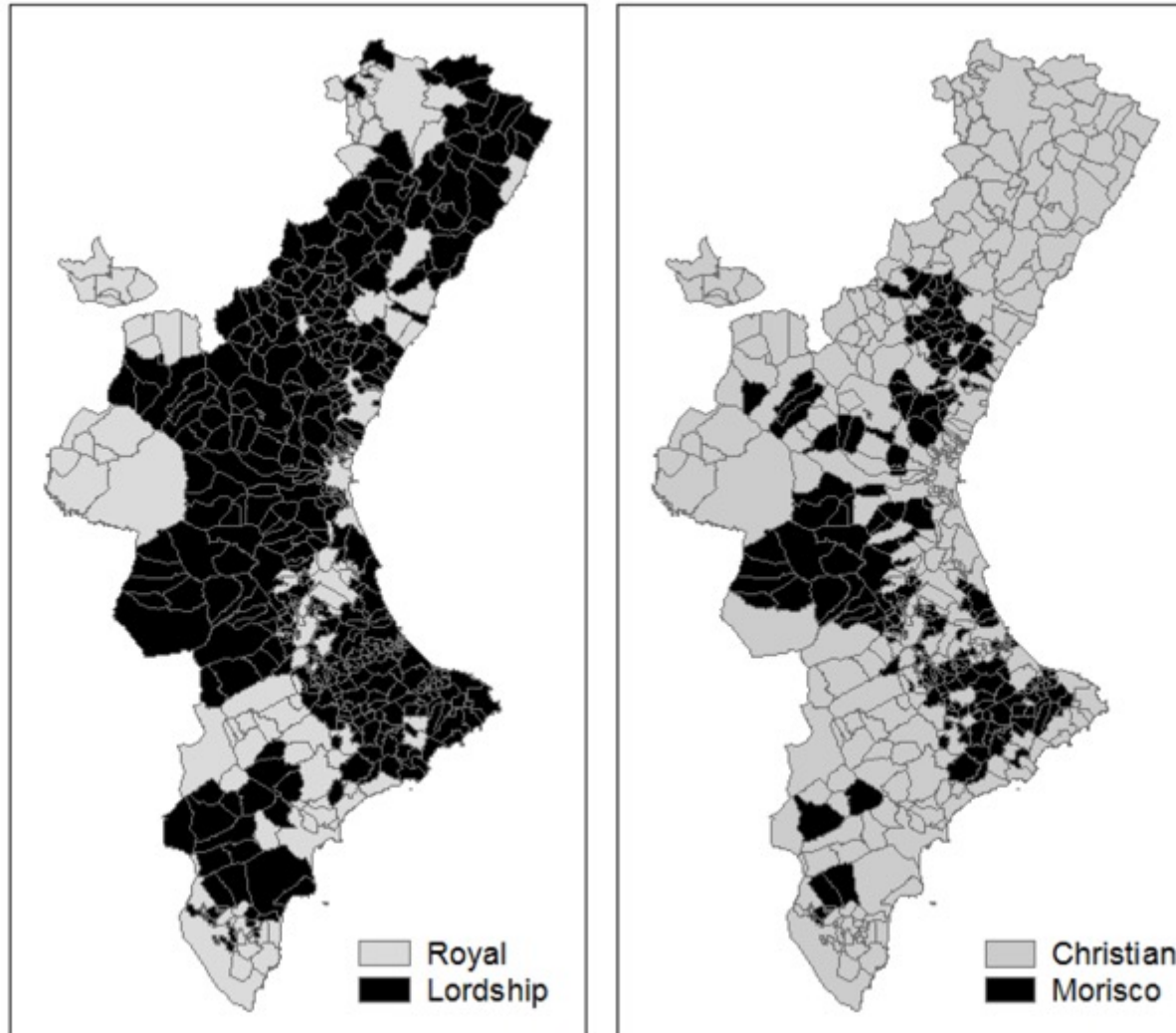
- But, historical evidence → **institutions** in **places** repopulated with *New Christians* after **expulsion of Moriscos** in 1609 “**particularly extractive**” (Reglà, 1964; Torres Morera, 1969; Ardit, 2009; Chaney and Hornbeck, 2016)

Moriscos or Moslems forced to convert to Christianity in 1525 then expelled in 1609.



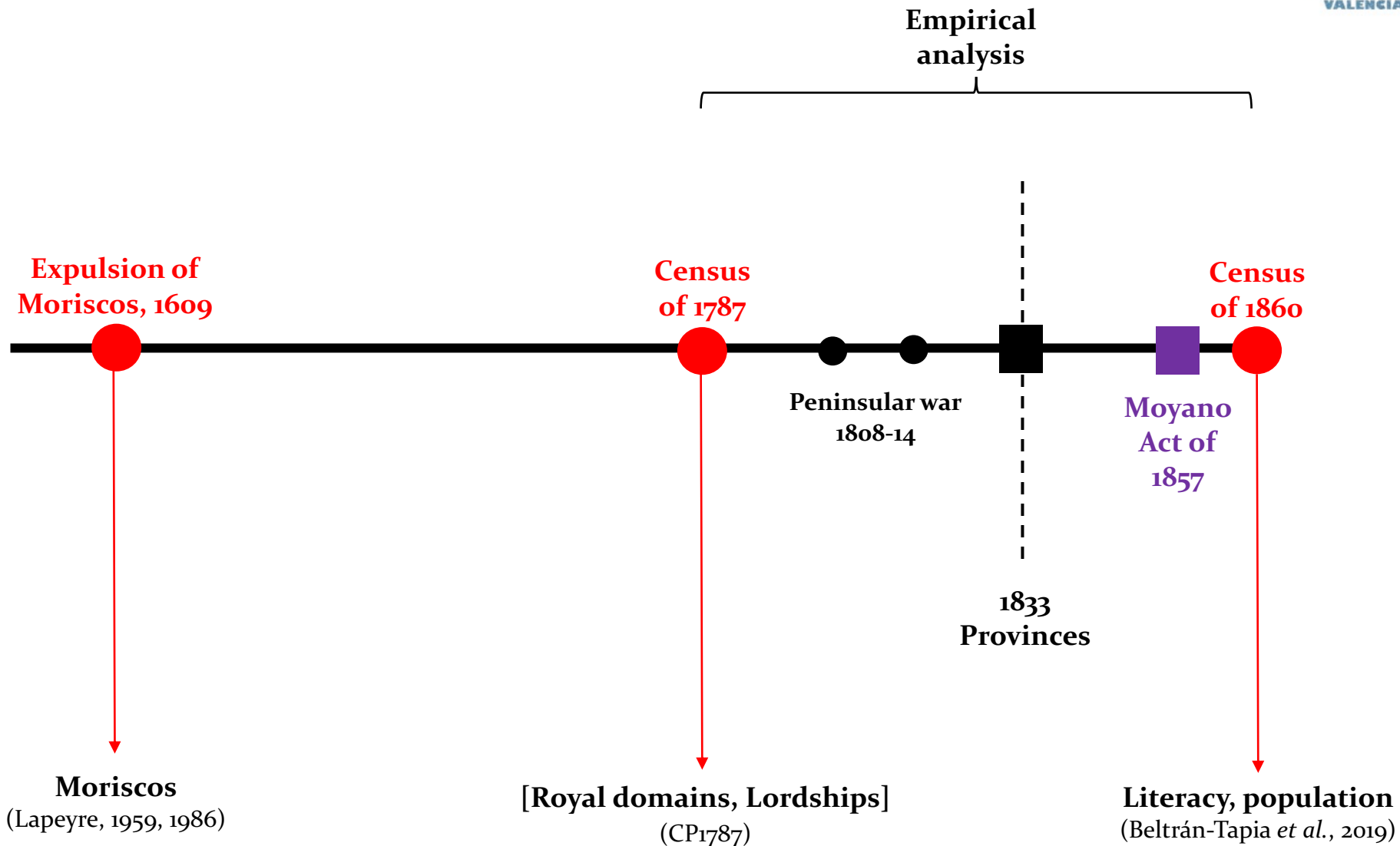
Motivation – Kingdom of Valencia, 1860

Map. The Kingdom of Valencia, as in the **Census of 1787**.



Note: **Municipality** is the **spatial unit**. Since historical borders are not available for mid-19th century, these correspond to the Census of 2001. See Beltrán-Tapia *et al.*, (2019).

Outline - Research



Data – descriptive statistics

Table. Municipal male literacy (%) in 1860 by type.

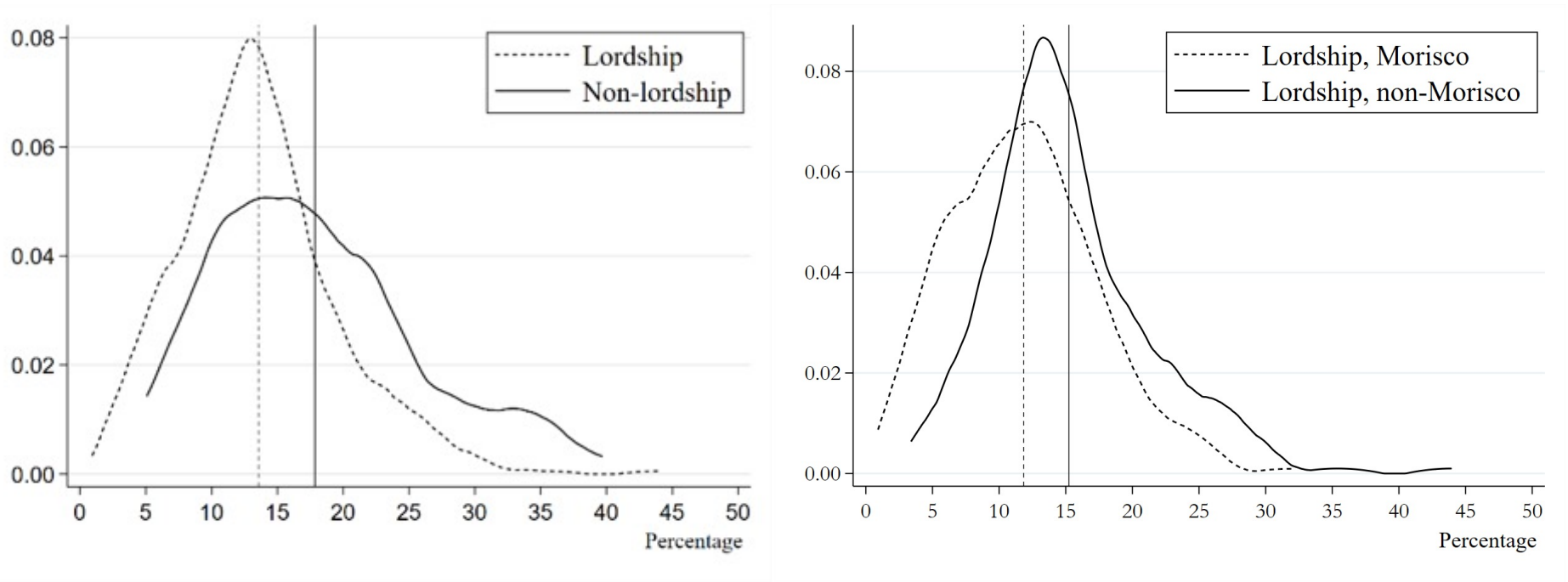
	Type	N	Mean	sd	Min	Max
-	All	524	14.3	6.5	0.9	44.0
1	Lordship	431	13.5	6.0	0.9	44.0
	Royal	93	17.8	7.8	5.1	39.7
2	Morisco	216	11.9	5.4	0.9	32.0
	Non-Morisco	308	16.0	6.7	3.4	44.0
3	Lordship, Morisco	212	11.8	5.5	0.9	32.0
	Lordship, non-Morisco	219	15.2	6.0	3.4	44.0
4	Royal, Morisco	4	15.4	4.2	9.7	18.8
	Royal, non-Morisco	89	18.0	8.0	5.1	39.7

Source. Census of 1860, Beltrán-Tapia *et al.*, (2019).

Note: **Municipality** is the **spatial unit**. Since historical borders are not available for mid-19th century, these correspond to the Census of 2001. See Beltrán-Tapia *et al.*, (2019).

Data – descriptive statistics

Figure. Kernel distribution for municipal male literacy (%).



Method – OLS (standard errors corrected for spatial dependence)

- Baseline model:

$$\text{male_literacy}_i^{1860} = \alpha_0 + \alpha_1 \text{LO}_i + \alpha_2 \text{MO}_i + \delta Z_i + \lambda_j + u_i$$

$i = 1, \dots, 524$ population entities; $j = 1, \dots, 17$ districts

LO: Lordship; **MO**: Morisco.

- Combined effects:

$$\text{male_literacy}_i^{1860} = \beta_0 + \beta_1 \text{RY_NM}_i + \beta_2 \text{RY_MO}_i + \beta_3 \text{LO_MO}_i + \delta Z_i + \lambda_j + u_i$$

$i = 1, \dots, 524$ population entities; $j = 1, \dots, 17$ districts

RY_NM: Royal-Non Morisco

RY_MO: Royal-Morisco

LO_MO: Lordships Morisco

Method – OLS (control variables)

- Control variables (or Z_i):

Population size (CP1860)

Municipal structure (CP1887)

Catalan

Socioeconomic structure (CP1787)

Geography – 1st nature (temperature and rainfall)

Geography – 2nd nature (distance to main road, to the capital city, to coast)

Latitude and longitude

Results – baseline model (ref. royal domain or non-Morisco)

Dependent variable: percentage of male literacy in 1860						
Econometric model: ordinary least squares (standard errors corrected for spatial dependence)						
	(1)	(2)	(3)	(4)	(5)	(6)
Variables of interest						
Lordship	-2.5123** (1.1768)	-2.8824*** (1.0664)	-1.9725** (0.9781)	-1.7184* (0.8857)	-1.6844* (0.8824)	-1.7773** (0.8719)
Morisco	-3.4740*** (0.7503)	-2.7078*** (0.7139)	-2.1036*** (0.6303)	-1.2831** (0.6045)	-1.2668** (0.6027)	-1.0296** (0.5179)
Control variables						
ln(Population 1860)	1.1411*** (0.4331)	0.7237 (0.4576)	1.1289*** (0.3557)	1.2058*** (0.4101)	1.2299*** (0.4130)	1.2103*** (0.4172)
Settlement pattern (1887)	0.0747*** (0.0160)	0.0649*** (0.0171)	0.0823*** (0.0189)	0.0700*** (0.0217)	0.0671*** (0.0226)	0.0605*** (0.0225)
Catalan	-3.2733*** (0.9689)	-3.1477*** (0.9550)	0.2996 (0.9133)	-0.2808 (0.8914)	-0.2574 (0.0295)	-0.1424 (0.9048)
% manuf. and artisans (1787)		0.1422*** (0.0432)	0.0881*** (0.0325)	0.1126*** (0.0312)	0.1098*** (0.0295)	0.1191*** (0.0303)
Constant	5.5558 (3.9596)	8.1066** (4.0187)	34.3543*** (5.9309)	25.8850*** (9.2083)	-44.0165 (64.3457)	-23.8644 (77.2749)
First-nature geography	No	No	Yes	Yes	Yes	Yes
Districts fixed effects	No	No	No	Yes	Yes	Yes
Latitude and longitude	No	No	No	No	Yes	Yes
Second-nature geography	No	No	No	No	No	Yes
Observations	524	474	474	474	474	474
R-square	0.2173	0.2535	0.3120	0.3615	0.3638	0.3747

Notes: First-nature geography includes temperature and rainfall. Second-nature geography includes distance to main road, distance to the capital city, distance to coast (in natural logarithms). Conley standard errors (Conley, 1999) are in parentheses. Cutoff: 42.7 km (ten nearest neighbors). Coefficients are statistically significant at * $p < 0.1$, ** $p < 0.05$, *** and $p < 0.01$.

Results – combined effect (ref. Lordship & non-Morisco)

Dependent variable: percentage of male literacy in 1860						
Econometric model: ordinary least squares (standard errors corrected for spatial dependence)						
	(1)	(2)	(3)	(4)	(5)	(6)
Variables of interest						
Royal, non-Morisco	2.4804** (1.2527)	2.8284** (1.1483)	1.9158* (1.0568)	1.6044** (0.93424)	1.5480 (0.9564)	1.6352* (0.9432)
Lordship, Morisco	-3.4906*** (0.7432)	-2.7305*** (0.7130)	-2.1268*** (1.3539)	-1.3285** (0.6202)	-1.3179** (0.6187)	-1.0796** (0.5269)
Control variables						
ln(Population 1860)	1.1415*** (0.4333)	0.7242* (0.4579)	1.1289*** (0.6331)	1.2009*** (0.4114)	1.2259*** (0.4136)	1.2064*** (0.4174)
Settlement pattern (1887)	0.0746*** (0.0160)	0.0647*** (0.0171)	0.0821*** (0.0189)	0.0696*** (0.0216)	0.0666*** (0.0225)	0.0599*** (0.0225)
Catalan	-3.2745*** (0.9677)	-3.1496*** (0.9532)	0.3004 (0.9149)	-0.2827 (0.8957)	-0.2716 (0.8556)	-0.1533 (0.9050)
% manuf. and artisans (1787)		0.1428*** (0.0430)	0.0887*** (0.0323)	0.1147*** (0.0305)	0.1121*** (0.0290)	0.1215*** (0.0300)
Constant	3.0603 (3.2825)	5.2455 (3.4815)	32.4347*** (5.9685)	24.1613** (9.3424)	-49.4508 (64.5111)	-29.2245 (76.7456)
First-nature geography	No	No	Yes	Yes	Yes	Yes
Districts fixed effects	No	No	No	Yes	Yes	Yes
Latitude and longitude	No	No	No	No	Yes	Yes
Second-nature geography	No	No	No	No	No	Yes
Observations	524	474	474	474	474	474
R-square	0.2173	0.2536	0.3121	0.3618	0.3642	0.3751

Notes: Due to the low number of observations (n=4), the estimated coefficient of royal, Morisco (*royal_mor*) municipalities is not reported. First-nature geography includes temperature and rainfall. Second-nature geography includes distance to main road, distance to the capital city, distance to coast (in natural logarithms). Conley standard errors (Conley, 1999) are in parentheses. Cutoff: 42.7 km (ten nearest neighbors). Coefficients are statistically significant at * p<0.1, ** p<0.05, *** and p<0.01.

Results – predictive margins (average male literacy)

	(1)	(2)	(3)	(4)
Type	Margin	Delta SE	Sign.	
Royal, non-Morisco	16.0072	0.8324	***	100
Lordship, non-Morisco	14.3721	0.6845	***	89.84
Lordship, Morisco	13.2925	0.6699	***	83.14

Notes: First step: OLS regression with robust standard errors. The specification includes control and geographical variables: ln(population 1860), settlement pattern (1887), Catalan, % manuf. and artisans (1787), temperature, rainfall, district fixed effects, latitude and longitude, ln(distance to main road), ln(distance to capital city), and ln(distance to coast). See Table B3 (column (6)) in Appendix B. Second step: Computation of the predictive margins using the Stata command “margin” and the option “asbalanced”.

Robustness checks

- Alternative computation of standard errors.
 - #1# Conley standard errors. Cutoff: 22.2 km (five nearest neighbour)
 - #2# Robust standard errors.
 - #3# Standard errors clustered by district.

- Additional control variables:
 - #4# $\ln(\text{Taxable income}/\text{population})$

- A more homogeneous sample
 - #5# Former Kingdom of Valencia (n=515)
 - Lordship municipalities subsample (n=431)
 - #6# Within lordships
 - #6a# All lordships
 - #6b# By type (secular, ecclesiastical)

Final thoughts

- This study shows that **Morisco-lordships**, where *New Christians* “substituted the expelled in their slavery” (Moxó, 1965: 206-7), consistently exhibited **lower literacy** than the rest.

- Our work provides quantitative evidence to the existing discourse, yet the **mechanisms** remain somehow unclear, thereby opening an avenue for future research.



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