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Abstract

In this article we explore the relationship between institutions and educational performance from a historical perspective. Relying on municipal-level information for the Spanish region of Valencia, our study explores the economic effects of the delegation of power during the ancien regime from the Crown to local elites through the establishment of lordships, compared to that remained under royal jurisdiction. We assess whether these lordships, in their late-eighteenth-century configuration, had an impact on male literacy rates in the mid-nineteenth century. We also analyse whether a negative differential effect emerged in areas that were mainly inhabited by Moriscos, populations who lived under particularly harsh conditions. In addition to this institutional diversity, we investigate whether the regulations governing the education system could have generated a negative effect due to a mismatch between the language of schooling (Spanish) and the population's language of use (Catalan). By isolating each of these effects, our findings show that literacy rates were consistently lower in Catalan-speaking lordships inhabited by Moriscos.

JEL Codes: N33, I24, I25

Keywords: Education, Institutions, Inequality, Language

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1. Introduction

In this article we analyse the impact generated by the institutions that governed social, economic and educational behaviour in ancien-regime Spain on the spread of literacy in the municipalities that made up the former kingdom of Valencia. The investigation thereby aims to contribute to the literature that links the institutional framework of a society with its economic development (Acemoglu et al., 2001; Engerman and Sokoloff, 2000). In this line of research some investigations have argued that certain institutions and their persistence over time could have affected development processes through their impact on the accumulation of human capital (Dell, 2010; Michalopoulos and Papaiannou, 2016; Waldinger, 2017; Valencia, 2019). This in turn is essential for understanding the different levels of development observed between territories in the past and even today (Gennaioli et al., 2013).

One possible economic basis for the existence of this relationship is the idea that the consolidation of institutional frameworks that favour the uneven distribution of resources, thus concentrating economic and political power in the hands of the elites, could slow down the spread of redistributive policies in areas such as education by limiting public spending (Galor et al., 2009). Various papers have found evidence of this. Chaudhary (2009), for example, analyses how, in the context of colonial India, the caste system tended to act as an obstacle to any increase in public spending on education. Go and Lindert (2010), on the other hand, show how extending the vote to lower-income segments of the population led to increased public spending on the education system and resulted in higher enrolment rates in the states of the American South.[1]

In a related stream of the literature, it has also been argued that concentrating political power in the hands of the local elites may erode the capacity of the State in their territories, limiting the provision of certain infrastructures and public services such as education (Acemoglu et al., 2015; Dell, 2010). Oto-Peralías (2019) supplies evidence relating to Spanish municipalities that were *señoríos* (which we refer to as lordships in this paper) in the eighteenth century. In his analysis he contends that lordships were like branches of central government delegated to the local elites and shows that in the nineteenth century they had less public infrastructure than *realengos* (which we refer to as royal domains, i.e. not under a lord's jurisdiction), in which it was normal for the Crown to intervene directly.

[1] Along similar lines, Vollrath (2013) shows how the concentration of property is a good predictor of spending on education in US counties in 1890.

Another possible reason for the existence of a relationship between the institutional framework and the provision of education could be linked to the conditions affecting the demand for it. It has been argued that high levels of inequality and poverty limit the percentage of the population that can take on the direct economic cost of learning, thus decreasing the social demand for it. The economic basis for this has been well established by authors such as Galor and Zeira (1993), who pointed out that, in the presence of capital market imperfections, economic inequality generates long-term effects on human capital investment. Various empirical investigations have confirmed that this relationship exists. Thus in the context of the spread of literacy in contemporary Europe, Reis (2005) argues that the economic cost of education acted as a barrier blocking access for much of the population. More recently, Cinnirella and Hornung (2016) have looked at the spread of primary education in nineteenth-century Prussia and maintain that the abolition of serfdom brought about an increase in enrolment rates in the various counties as the expected return on the investment increased. Beltrán Tapia and Martinez-Galarraga (2018) show that those Spanish districts with higher inequality in the mid-nineteenth century – measured as the percentage of agricultural day labourers out of the total population working in agriculture – recorded lower levels of education before the Spanish government took over its funding.

However, the way in which institutions and particularly central government impact education levels may also be linked to the way education provision is designed. It has been pointed out that the rules governing the education system can affect the results achieved if they give rise to a mismatch or linguistic distance between the language of schooling and the population's language of use. This line of research is based on the literature that links the institutional design of the State, the characteristics of the population and the supply of public goods. The seminal work by Alesina et al. (1999) designed a theoretical framework with which to analyse the provision of certain public services in the presence of heterogeneous agents.[2] From an education supply perspective, this element would be especially relevant in cases where funding was a municipal-level responsibility and the local elites believed that the compulsory use of a language of schooling that was not their own posed a threat to their position of privilege. Cinnirella and Schueler (2016) show that the provision of primary education in Prussia was lower in those territories where German-speaking citizens lived alongside speakers of other Slavic languages

[2] Alesina and La Ferrara (2005) carry out an in-depth survey of empirical works that analyse the existence of a relationship between the ethnolinguistic diversity of a territory and the provision of public goods.

(mainly Polish) in a context in which a Germanization policy had imposed German as the only language of schooling throughout the Empire after its foundation in 1871. Cvrcek and Zajicek (2013) find evidence that the literacy process followed the opposite dynamic in the Austro-Hungarian Empire. In this case, in territories where the language of schooling was the same as that of the local elites, education received greater financial support than in those where there was a distance between the two.

Other research, however, has tended to stress the existence of a negative relationship between linguistic distance and education results by considering the effect the former can have on demand for the latter. Jain (2017) analyses the impact of the mismatch between the official language and the local language in districts in India and concludes that those in which a linguistic distance was present had significantly lower literacy rates than those where the language of use and the language of schooling were the same. There are two reasons why this effect comes about. On the one hand, being schooled in a language that is not their own requires individuals to make more of an investment. As shown in investigations like that by Williams and Cooke (2012), aimed at identifying the best strategies for bringing literacy to the population in recent development projects, education results are lower when these projects involve teaching in a language other than that of the potential beneficiaries. Similar conclusions are found when analysing the results achieved by immigrant groups in host countries. Bleakley and Chin (2004), for example, show that the education results for children who immigrate to the US from English-speaking territories are significantly better than those for children with different mother tongues. This type of evidence leads one to conclude that schooling in a language that is not the language of use calls for a greater investment than that needed when learning in one's own language.

On the other hand, people may expect fewer benefits to be gained from schooling in a language that is not the language of greatest use in a community. Papers such as Bruthiaux (2002), in particular, show that if much of the economic activity (access to microcredits, contracts of sale, notary records, etc.) is carried out in the local language, the benefits associated with literacy will be fewer in territories where there is a mismatch between the language of use and the language of schooling. The same effect but in reverse has been documented by Angrist and Lavy (1997) in the case of Morocco. These authors report that the benefits deriving from secondary education (measured as the skill premium associated with this level of education) fell significantly

when the Moroccan education system decided to use Arabic instead of French in secondary education, in a context where most formal economic activity was conducted in French.

With the aim of contributing to these debates, in this article we analyse the determinants of literacy levels in the municipalities of the former kingdom of Valencia, using this territory as a case study in which to disentangle the complex relationships that existed between the different institutions that governed social, economic and educational activity and the rate of human capital accumulation. Studying the case of Valencia at the dawn of the contemporary period is a relevant contribution, since the institutional and linguistic diversity that characterizes this territory means that the impact of various elements can be analysed jointly.

More specifically, exploring this case will enable us to accurately identify the channels whereby institutional differences affect human capital accumulation. Firstly, Valencia as a region forms part of the regulatory framework that governs the provision of education in Spain. However, until the mid-nineteenth century there was no country-wide law governing primary education. It was the Public Instruction Act of 1857, known as the Moyano Law, that laid down the basic rules for how the Spanish education system should function, establishing its stages and academic content and specifying the obligations that had to be met by families (sending their children to school) and municipalities (opening schools). The law also established that school funding was basically a municipal responsibility. This has been considered a key element for explaining the sizeable differences in literacy levels between municipalities in Spain, not only nationally but within each region and province (Beltrán Tapia et al., 2019). Valencia is therefore as good a case as any in Spain to use to study the joint impact of State-imposed regulations and the actions of local institutions on human capital accumulation.

Secondly, the information available for Valencian municipalities makes it possible to classify them according to the type of jurisdiction that was in place during the ancien regime. Importantly for us, we can distinguish between those under royal jurisdiction (i.e. *realengos* or royal domains) and those under a local lord's jurisdiction (i.e. *señoríos* or lordships). This categorization can be used to analyse two of the aspects highlighted by the literature concerning the concentration of power among local elites and the provision of education to the population. On the one hand, the literature points out that, unlike in royal domains, in lordships the elites were more interested in maintaining social control, thus making the schooling of the population difficult. Added to this was the limited capacity of the State to change the situation (Oto-Peralías, 2019). And on

the other, the demand for schooling was also affected if a lord imposed worse living conditions on his vassals or generated greater economic inequality (Beltrán Tapia and Martinez-Galarraga, 2018). The joint study of both these effects is undoubtedly complex and the existing literature has tended to reach its conclusions by establishing hypotheses as to the causal mechanisms prevailing in each of the cases analysed.

In the case of Valencia, however, we can devise an identification strategy that makes it possible to isolate the effect associated with each of these aspects. In 1609 the population suffered a shock, which we can identify conditionally as exogenous. In that year the Crown decreed the expulsion of the Moriscos (Moslem converts to Christianity or New Christians), a population group which, in the kingdom of Valencia, accounted for around a third of the total.[3] These Moriscos were settled mainly on lordship lands and, within the framework of the Spanish lordship system, the territories they inhabited have been described as settlements in which the living conditions of the peasants were especially harsh.[4] After their expulsion there was a gradual process of repopulation by Old Christians from other areas. Nevertheless, the literature has shown that the conditions imposed by the lords on new settlers were still extremely harsh and that this highly extractive system persisted over time (Torres Morera, 1969; Reglà, 1964; Ardit, 2009; Chaney and Hornbeck, 2016). Studying the case of Valencia thus provides us with an opportunity to analyse the impact of the jurisdictional system, be it lordship or royal domain, on levels of education. By distinguishing between lordships inhabited by Old Christians and those established on territory that was home to Moriscos until their expulsion in 1609, we can also identify the possible existence of a differential effect in those where the economic conditions of the population were especially bad.

Finally, the choice of Valencia makes it easier to analyse the third aspect whereby the State's actions can impact education levels, i.e. the establishment of an education system that may create a linguistic distance between the language of schooling and the language of use in any municipality. In Valencia two languages were spoken in the past and still are. A third of its municipalities are located in areas where *castellano* (henceforth Spanish) predominates, while two thirds are in the Catalan (locally known as Valenciano) language area. Linguistic diversity in this

[3] Lapeyre (1959, 1986) notes that 216 of the 524 Valencian municipalities can be considered exclusively Morisco at the start of the seventeenth century.
[4] Reglà (1964, p.141) remarks that Earl Hamilton "… has compared the situation of the lords' Morisco vassals with that of black slaves in the South of the United States, slaves protected by big landowners".

region stems mainly from the Reconquista and the origins of the settlers who came to populate the different territories, whether lordships or royal domains. In the case of lordships that were formerly inhabited by Moriscos, however, the language of use depends not on the origins of the settlers or their lords after the Reconquista, but on the origins of the new colonists who settled after 1609 (Casanova, 2001). The literature has shown that the repopulation of these territories involved individuals and families that came mainly from the kingdom of Valencia itself, although there were also sizeable populations from La Mancha, Aragon and the Balearic Islands, who spread the language of their places of origin regardless of whether they settled in territories under the jurisdiction of Catalan, Aragonese or Castilian lords (Torres Morera, 1969).

Given these conditions, Valencia provides a perfect opportunity for studying the effect that results from the existence of a linguistic distance between the language of use and the language of schooling. In this region the linguistic lines of demarcation are clear-cut (because apart from in certain cities, in the mid-nineteenth century the two languages were not spoken alongside each other), and the use of one language or another by Moriscos in their districts before 1609 was the result of a conditionally exogenous process. It is therefore possible to identify the presence of a specific effect associated with the introduction from the mid-eighteenth century of regulations that laid down that the language to be used in primary schools was Spanish.[5] This effect can thus be isolated from the impact of other overlapping institutional elements linked to the linguistic mismatch when determining educational supply and demand.

To carry out the analysis we constructed a data set with information including the literacy rates recorded in the 524 municipalities that made up the region of Valencia (or *Comunitat Valenciana*) in 1860, the institutional characteristics of the various municipalities at the end of the ancien regime (1787) as determined by type of jurisdiction (royal domain, secular lordship, or lordship controlled by the Church or a military order), a list of the municipalities inhabited by Moriscos before their expulsion in 1609, and the language area in which each entity was located. We have also included additional information on those elements that from a first- or second-nature geographical point of view could affect literacy levels and need to be taken into account in the analysis. Finally, this data set also provides information on settlement patterns in each local

[5] The compulsory use of Spanish for teaching throughout the entire kingdom of Spain dates back to 1768, as established by Royal Decree by Carlos III.

entity, i.e. the volume of population that lived in each of the local entities that made up the municipalities (towns, villages, hamlets, homesteads, rural dwellings, etc.).[6]

Bearing in mind the information available, the investigation follows two strategies for empirical analysis. In the first, we analyse whether there is any significant effect associated with each of the explanatory elements described earlier. Then in order to identify any effect associated with the jurisdictional regime and isolate it from other determinants, we check through those municipalities that were lordships to discover if there are any significant differences in literacy rates between those inhabited before 1609 by Old Christians and those repopulated after the expulsion of the Moriscos. Finally, we analyse whether there are any differences in municipal literacy rates deriving from the presence of a linguistic distance between the language of schooling (Spanish) and the language of use (Catalan). So as to reliably identify the presence of this mechanism, we analyse whether this effect is significant within the sample of lordships established in former Morisco municipalities, which we can consider to be alike in other institutional attributes and where the language distribution is conditionally exogenous.

As for the second strategy, once we have isolated and established the importance of the various mechanisms that link the institutions that the municipalities inherited from the ancien regime with education levels in 1860, we assess the marginal effect arising from each of them. To do this we distinguish between eight possible categories of municipality depending on their institutional and linguistic characteristics and then quantify the cost in educational terms of being located in each one. The results show that those municipalities that were under lordship jurisdiction, that had been inhabited by Moriscos and that were part of the Catalan linguistic area had the lowest education levels in the mid-nineteenth century.

[6] In the original Spanish these entities were known as *villas*, *lugares*, *aldeas*, *arrabales*, *caseríos*, etc. Constructing the data set meant digitalizing the information and homogenizing it at a level of territorial disaggregation corresponding to 524 municipalities. Today the *Comunitat Valenciana* comprises 542 municipalities, and so because of the changes that have taken place over the years, some municipalities have had to be grouped together in order to create a sample of 524. In the Appendix we give details of this municipal homogenization with reference to the three main sources used: the Census of Floridablanca, 1787; the Population Census of Spain, 1860; and the Nomenclator of Spain, 1887.

2. Historical background

The Valencia region (or *Comunitat Valenciana*) is located on the eastern side of the Iberian Peninsula, on the Mediterranean Sea. It covers an area of 23,255 km^2 and is geographically longer than it is wide, giving it approximately 435 km of coastline. Today the region has around 5 million inhabitants and its capital, Valencia, is Spain's third largest city after Madrid and Barcelona. Its population represents 10.6% of the country's total and its economy accounts for 9.2% of Spanish GDP. It has traditionally been a region of relative economic dynamism, with its economy characterized by an outward-looking trading position, mainly agricultural but with a sizeable industrial component. This dynamism has led to a continuous increase in population over time within a spatial structure of municipalities that form a network of medium and medium-large population centres.

Back in the mid-nineteenth century, specifically in 1860, the year on which our study focuses, the Valencia region had 1,275,000 inhabitants, representing 8.1% of the total Spanish population.[7] It accounted for 8.6% of Spain's GDP (Rosés et al., 2010; Prados de la Escosura, 2017), being a markedly agrarian society in which almost two thirds of the active population worked in agriculture. However, this was an intensive Mediterranean agriculture with much of the land depending on irrigation, especially in coastal areas, which enabled a high output per hectare to be obtained from the land with production to a large degree being aimed at international markets (Garrabou, 1985). In the mid-nineteenth century this dynamic agriculture, in contrast to that predominating in the interior of the peninsula, was undergoing a major transformation that would lay the foundations of a development model based on intensive agricultural production for export (Palafox, 2001). Sectors that had been important in the eighteenth century, such as mulberry trees and silk, rice, hemp, saltwort, wine and liquors, would give way to an agriculture which, over the second half of the nineteenth century and in tune with developments in the international markets, specialized in just four main crops: vines, rice, vegetables and oranges (Ardit, 1996; Mateu and Calatayud, 1996).[8]

[7] In 1860 the city of Valencia had 107,703 inhabitants, with other important population centres being Alicante (31,162), Orihuela (25,208), Alcoy (25,196), Castellón (20,123) and Elche (18,734). The province of Valencia was home to almost 50% of the region's total, while the other two provinces in the region, Alicante and Castellón, accounted for approximately 30% and 20% respectively.

[8] The spread of vineyards was the result of an increase in demand due to the phylloxera infestation in France in the second half of the nineteenth century. Oranges, which over time would become Valencia's main crop, were more common during the final decades of the century. Apart from rice, which faced competition from Asian growers

Industry also underwent a certain degree of development in the mid-nineteenth century. In 1860 the region's gross value added accounted for 8.4% of Spanish industry, a figure very close to that for the population (Rosés et al., 2010).[9] With many manufacturers gradually transforming themselves into industrial concerns by mechanizing their production processes, Valencian industry focused on producing consumer goods. Thus the branches of industry that have characterized the region's economy in recent times, basically since the 1960s, already had a notable presence in the mid-nineteenth century (Lluch, 2001:1976; Soler, 1984; Martínez Gallego, 1995). They included the silk industry in the central area of the region around the city of Valencia, though this was already in decline.[10] In the south of the region, away from the coast, there was a large cluster of textile production – mainly involving wool – in Alcoy and neighbouring districts, where paper production was important too. Also noteworthy in the south was the manufacture of footwear (in Elche and Elda). As for the northern areas, there was a traditional textile manufacturing sector in Morella and ceramics production concentrated around Onda and l'Alcora. Taken as a whole, around 1860 the region had an incipient industrial sector that had taken root in the past and which, spatially concentrated by sector, now formed the basis of Valencian industrialization (on these subjects, see Torró and Cuevas, 2002; Martinez-Galarraga, 2009).

Given the economic and social context, it is notable that education levels in Valencia had always been low, less than the Spanish average. In 1860, for example, the region's male literacy rate was only 24% for the entire population over age ten, 16 points below the national average. Indeed, one of the most striking characteristics of Spanish literacy in the mid-nineteenth century is that it varied greatly across the territory as a whole. This is true not only when comparing the regions that made up the kingdom of Spain (Núñez, 1992), but also when comparing municipalities within the same region or province (Beltrán Tapia et al., 2019). A good illustration of this

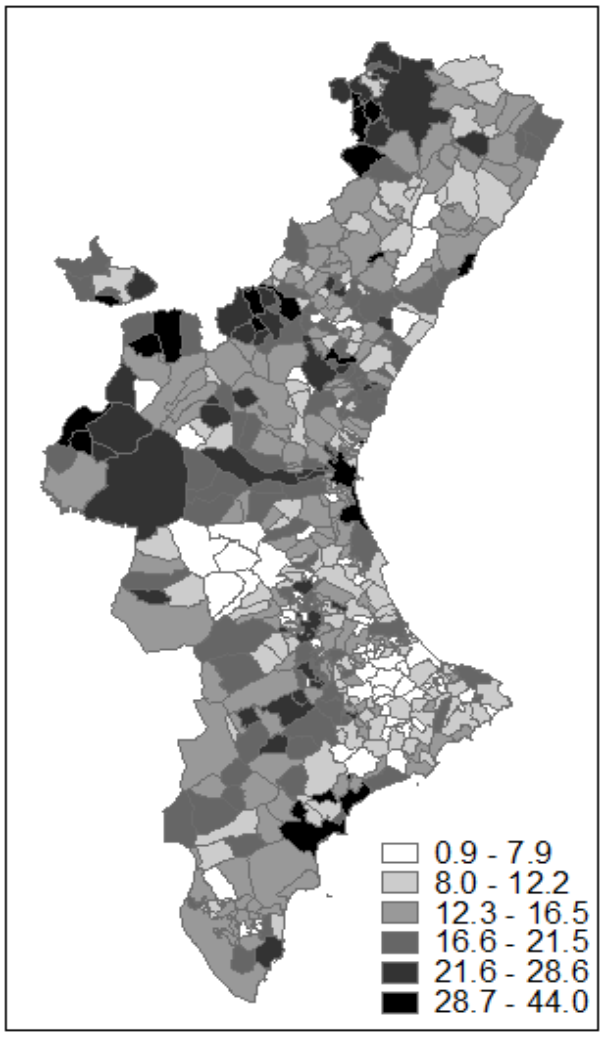
and was therefore aimed mainly at the domestic market (which from the 1890s was shielded by protectionist policies), all other crops were clearly geared towards the export market.

[9] According to fiscal data (which exclude the Basque Country and Navarre regions), in 1856 the taxes from industry in the Valencia region represented 6.6% of the total paid to the State, far below the 25.6% paid by Catalonia, for example, the peninsula's main centre of industry (Azagra, 1982; Nadal, 1987).

[10] The silk industry, which was the main production sector in the eighteenth century, fell into decline in the middle decades of the nineteenth century due to the lack of modernization during the transition to industrialization and also because of the arrival of pebrine, a parasitic disease affecting silkworms. Over time, however, new industrial activities would be developed in the area surrounding the city of Valencia, such as mechanical construction, chemicals and furniture manufacturing, all closely linked to the expanding agricultural sector (Nadal, 1987).

variability is the region of Valencia, where male literacy rates by municipality ranged between 5% and 45% in 1860 (Figure 1).[11]

Figure 1.- Male literacy rates in 1860 by municipality (%)



Source: own elaboration based on the 1860 Census of Population.

[11] Spanish population censuses, under data for municipalities, provide information on the number of inhabitants who could read and write, distinguishing between men and women but not by age group. On a municipal level, therefore, it is not possible to reconstruct the literacy rate understood as the percentage of the population over age ten that could read and write, which is what normally happens in the literature. Given this situation, in the following text when we talk about male literacy rates, we are referring to males who could read and write as a percentage of total population.

Spanish historiographers have linked this wide range of results with the regulations governing education that were in force during the ancien regime and the beginning of the liberal period. These regulations structured the education system into three levels (primary, secondary and tertiary) but left the running and funding of primary schools in the hands of the local authorities. They also established compulsory schooling between the ages of 6 and 9, but this was not free. Only those whose parents or guardians could not afford it were excused payment. Thus the local council and the families of children who attended school covered the expenses, essentially the cost of staff and materials (Viñao, 1990). Also, from the mid-eighteenth century the regulations established that the language in which the children who went to school were to be taught should be Spanish, an aspect considered important by historiographers (González-Portilla and Urrutikoetxea, 2016).

Taking all this into account, the literacy process would have been directly linked to three idiosyncratic elements involving the various local authority areas and the people who lived in them. The first is the capacity and willingness of the local administration to pay for the service. It should be remembered that schools could be fully or partly maintained by both public funds, i.e. religious foundations and charities, and private funds, i.e. individuals or associations. Public schooling was generally paid for using "common funds", although contributions from families were also frequent.[12] In addition, even it had the funds, it was always possible that the local administration would not support the initiative, thus creating a problem of agency or conflict of interests between the local administration and those who wanted to use the service. Secondly, the levels of inequality and poverty characteristic of each municipality could in turn determine social demand and the number of children attending school. The third element is the language of schooling. This aspect could give rise to a conflict of interests between the local administration and users if, as mentioned earlier, the population's main language was not the same as the language of schooling.

As far as these aspects are concerned, in this article we argue that the institutional and linguistic diversity that characterized the territory determined the high variability in the supply and demand of education and thus the literacy levels observed. Therefore in the following pages we give a brief overview of the origins of the regulatory framework governing primary education in Spain,

[12] In the village of Càrcer, according to Madoz (1845), *"the master has no funding other than the monthly payments made by his pupils",* while in Carpesa, a village of similar size, a sum of 1,000 reales had been allocated.

along with the historical conditions that led to the formation of the institutional and linguistic characteristics that may have had an effect on the supply and demand of education in the municipalities of the Valencia region.

2.1. The regulation of primary education in Spain: from the ancien regime to the liberal State

The regulatory framework for primary education in Spain in 1860, the first year for which we can carry out an initial quantification of the results using literacy rates by municipality, was the result of a long gestation process that culminated in 1857 with the passing of the Public Instruction Act, also known as the Moyano Law. The enlightened reformers of the late eighteenth century had already identified education as a driving force for the country's social and economic development. Jovellanos, for example, noted in his 1802 'Memorandum on Public Education' that "*the origins of social prosperity are many; but all spring from the same source, and this source is public instruction"*. These words indicate that the country's intellectuals and elites were fully aware of the importance of education for the economic development of a society. However, the reality was that Spain, in this area as in many others, was lagging behind other countries at the time. School funding and budget allocations for teachers under the ancien regime were the responsibility of local councils, religious foundations and the pupils' parents.[13] Given these circumstances, in quantitative terms the level of education in Spain presented a bleak picture.[14]

It was in this historical context that Article 366 of the Constitution of 1812 (Item IX. On public education) set out that *"all the towns in the Kingdom shall establish elementary schools in which children will be taught reading, writing and counting, and the catechism of the Catholic religion, which will also include a brief outline of civil obligations*". It also aimed to create a uniform education system (Art. 368) and a Ministerial Education Board in charge of inspections (Art. 369). These ideas were given shape in the Quintana Report of 1814 (*Report and Draft Decree on the Regulation of Public Education*). Following this report the General Regulations for Public Instruction were established in 1821, but plans to implement them were halted due to political and social instability and not pursued further. This was also the case with the Duque de Rivas Plan of 1836. During the first half of

[13] Student fees were paid in cash or kind. The contribution of local councils to teachers' wages was usually in cash but could sometimes be in kind, usually board and keep.

[14] Viñao (1990) estimates that only about 23.3% of the population between ages 6 and 13 were being schooled in 1797.

the nineteenth century, therefore, primary schools followed no specific education plan and were left to their own devices as far as funding was concerned. In other words, primary education was a municipal responsibility.

It was not until 1857, a time marked by great socioeconomic change in which various countries were taking their first steps towards mass schooling, that the Public Instruction Act (PIA), commonly known as the Moyano Law, was passed. This regulated the Spanish education system from 1857 to 1970, when it was replaced by the General Education Act (GEA).[15] Indeed, the Moyano Law was one of the great reforms introduced in Spain in the nineteenth century. Education was split into primary education and higher education (Art. 1), with a curriculum being established for both.[16] At the same time, primary education would become "*compulsory for all Spaniards*" (Art. 7) between the ages of 6 and 9, but was free only in cases where the "parents, guardians or providers are unable to pay for it" (Art. 9).[17]

The Moyano Law also laid down a minimum threshold requirement for schools for each town according to its size. Communities of over "*500 souls*", for example, should have at least one public primary school for boys and another for girls, even if the latter were 'incomplete' (*escuelas incompletas*) (Art. 100).[18] Communities of at least "*2,000 souls*" should have two complete schools each for boys and girls, while those with "*4,000 souls*" should have three, and so on (Art. 101). It was also recommended that communities of fewer than "*500 souls*" should form districts so that they could have a complete primary school (Art. 102). Nevertheless, public schools, i.e. those that were "*fully or partly maintained by public funds or by religious or other similar foundations*" (Art. 97), continued to be the responsibility of local councils and religious organizations.[19]

To summarize, the regulatory framework for primary education in force in Spain in 1860 served to organize the education system, set out its stages and establish the content of each subject. It

[15] Although the PIA continued until 1970, successive changes were introduced during the 113 years that it remained in force. Compulsory education, for example, initially from ages 6 to 9, was extended to age 12 in 1909 and age 14 in 1964.

[16] According to Art. 2 of the PIA, primary education comprised 6 subjects: Christian doctrine and basic scripture, reading, writing, principles of Spanish grammar, principles of arithmetic, and basic knowledge of agriculture, industry and commerce, this latter subject depending on location.

[17] The compulsory nature of education was not absolute, since pupils could ask to be excused when they were "*sufficiently provided with this type of education in their homes or in a private establishment*" (Art. 7). And to obtain free primary education, a "*certificate issued by the relevant parish priest and endorsed by the town mayor*" had to be provided (Art. 9).

[18] An incomplete school was one in which not all the subjects on the curriculum were taught.

[19] Art. 97 stipulated that every year there would be an allocation of "*one million reales, at least, to help those towns and villages that are unable by themselves to cover the cost of primary education*".

also listed the obligations that fell to families (the schooling of their children) and municipalities (the opening of schools). However, from the point of view of funding, the reality that characterized the Spanish education system under the ancien regime remained unchanged. The provision of infrastructures in 1860 continued to be the responsibility of the local authorities and funding was still expected to come from these entities and families and, to a lesser extent, from secular or religious foundations.

2.2. Lordships, royal domains and the legacy of the ancien regime in the configuration of local Spanish and Valencian institutions

Taking into account all of the above, the initial hypothesis on which this work rests is that not only the incentives of those who made decisions affecting the provision of education at local level but also the economic conditions of those individuals and families who might have benefited from it in the mid-nineteenth century are both in some way linked to the type of jurisdictional regime in place in the towns and villages of Valencia during the ancien regime.

In order to test this we start with the information contained in the census of 1787, known as the Census of Floridablanca.[20] This, "*the most perfect product of the rulers of the ancien regime in Europe*" (Livi Bacci, 1987, p.147), provides data on the size, structure and occupation of the population by settlement, these being classified in turn by category (city, town, village, hamlet …) and jurisdiction. The census sorted the jurisdictional regimes of Spain's local authorities into royal domains, ecclesiastical lordships, secular lordships and lordships belonging to military orders. The literature has shown that this distinction makes it possible to identify the person or entity that had jurisdictional rights over a territory. It has also shown that we can discover any other powers enjoyed by the local elites or the Crown under the umbrella of jurisdiction, such as rights over the land or the population. Therefore, in order to clarify the differences between the various forms of jurisdiction and the implications for educational supply and demand, over the following pages we provide an overview of the powers enjoyed under the different jurisdictional regimes, in particular the lordship.

[20] The information in the Census of Floridablanca has been used in various investigations that analyse the effect of ancien-regime institutions on education levels and economic performance in Spain at different levels of disaggregation. Examples include Oto-Peralías (2019) and Cinnirella et al. (2020).

A lordship involved the delegation of certain powers of the Crown to a lord. Historiographers of medieval and modern Spain distinguish between ecclesiastical lordships or abbacies (*señoríos eclesiásticos* or *abadengos*) and secular or noble lordships (*señoríos laicos* or *nobiliarios*). The first group covers two basic categories: monastic lordships and those granted to bishops (bishoprics or *mitras*) and chapters (*cabildos*). Falling somewhere between secular and ecclesiastical lordships were those awarded to the military orders (of Calatrava, of the Temple…). Another relevant point is the length of time for which powers were delegated by the Crown, since this could affect the incentive of those who possessed them. In this regard most lordships were hereditary, although some, such as those involving the military orders (*órdenes militares*), were lifetime in nature. In these it was the Crown which, through the Council of Orders (*Consejo de Órdenes*), awarded title of the privilege to a new knight commander (*Comendador*) after the death of his predecessor (Moxó, 1965). However, much of the land tied to the military orders returned to the Crown, notably that belonging to the Orders of Santiago and Calatrava during the time of the Catholic Monarchs and that of the Order of Montesa in 1587.[21]

The areas occupied by lordships initially took shape during the ninth and tenth centuries and spread over the course of the Middle Ages, generally because it was a way in which the King would reward nobles who took part in the Reconquista. The second main expansion stage came during the modern era, in particular during the period when the House of Habsburg occupied the Spanish throne, and was driven by their need for finance. However, from the point of view of how a municipality's institutional framework could possibly have an impact on the incentives of the local elites, we need to consider the powers involved when a lordship was granted to its holder, be it a noble or an ecclesiastical institution. In this regard at least two basic types of power should be explained: *señorío jurisdiccional*, which we refer to as jurisdictional lordship, and *señorío solariego*, which we refer to as territorial lordship (which includes so-called vassalage).

A jurisdictional lordship was when the Crown delegated a royal power such as justice to the holder of the title. Over the medieval and modern periods the extent of the jurisdiction delegated was ever-changing. The earliest lordships, basically those granted up to the end of the fourteenth century, did not usually include jurisdiction. However, the granting of jurisdictional rights was more common during the final stages of the Reconquista and in lordships established in the

[21] Torres Morera (1969). Much of this property was in turn sold and converted into lordships during the sixteenth and seventeenth centuries.

modern era. At its peak, full jurisdictional lordship meant delegating the administration of justice, along with the capacity to appoint judges and officials and to at least approve if not appoint council members. This was a clear delegation of royal power to the local elites. To give an example, in many sixteenth-century deeds (*escrituras de donación*) involving lordships and bishopric towns and monasteries that reverted to the Crown when the holder of the title died (*amortización de encomiendas*), the Habsburgs – whose intention it was now to sell the properties to secular lords – would include in the formula of bestowal the phrase: "civil and criminal jurisdiction, high and low justice, simple and mixed rule" (Moxó, 1965).[22] It was this formula that granted the right to appoint the mayor (*alcalde mayor*) and other figures of authority, the clerks of the court and council (*escribanías del juzgado y concejo*), and to pass sentences (*penas de cámara, fiscales y arbitrarias*). It therefore involved a complete transfer of administrative, civil, fiscal and penal jurisdiction, along with the right to collect the taxes and charges that would fund it.

A territorial lordship involved a set of rights in connection with legal ownership of the land, which is the second way in which the Crown could delegate power to the holders of a lordship. To gain an idea of its importance, suffice it to say that the abolition of this power was a priority of the liberal reformists in Spain in 1811. Being given territorial control involved the delegation of rights over the lordship estates, regardless of whether they were worked directly by the lord or by tenant farmers or settlers. The deeds of cession also usually included the right to collect the rents paid by those who had the right to use the land subject to charges (*censo*), i.e. those with emphyteutic contracts. They also included the income deriving from local land tax (*pecho*). This type of tax has different names and forms across the length and breadth of Spain (*martiniegas, tercios del pan, de la fruta*…).

Finally, another right that could form part of the territorial lordship was the income from vassalage (although some of the specialist literature notes that this particular right falls midway between those deriving from jurisdiction and those deriving from legal ownership of the land). This income included taxes that came from neither the jurisdictional services nor the working of the land, but from the servitude that a territory's inhabitants owed to their lord. It would have included tolls, road use charges (*portazgos*), personal taxes on Moors and Jews, monopolies on ovens, mills and presses, sales taxes if the local lord charged them (*alcabalas*), and even military service under the lord's orders. The literature has pointed out that this vassalage was important

[22] In the original Spanish: "*la jurisdicción civil y criminal, alta y baja, y mero y mixto imperio*".

in two areas: the economic, since the income obtained from these rights was many times greater than that obtained through jurisdictional and territorial rights; and the coercive, because the fact that the Crown had delegated powers gave the lord the capacity of coercion over the people who lived in his territory.

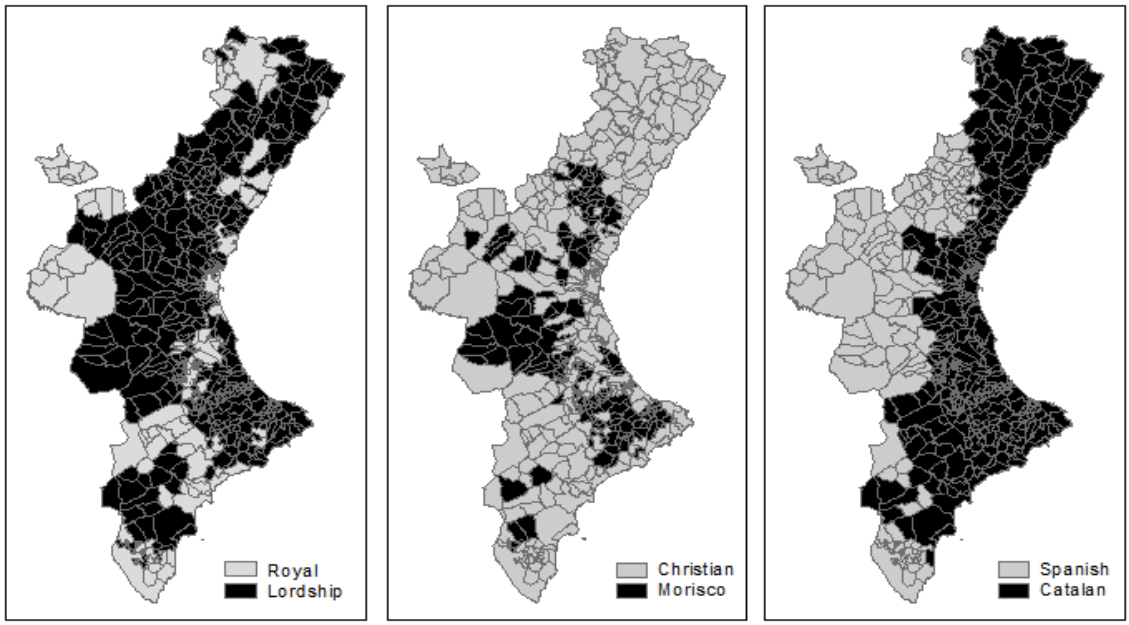
Distinguishing between municipalities in royal domains and those in lordships may shed some light on the differences that existed between entities as regards two basic concepts. The first of these is decision making. In many lordships the mayor, the council and all the posts associated with municipal government were appointed by the lord, and therefore it might be thought that in these territories the delegation of power would act against the capacity of the State to undertake reforms encouraging the provision of public goods including education.[23] The lordship also often involved the delegation of territorial rights, i.e. rights over the actual land (*derechos solariegos*). Given such a situation, the incentives of the local elites as far as the provision of education was concerned would relate to its impact on the supply of unskilled workers, a factor used intensively in the activity from which they extracted a large part of their income, i.e. agriculture. If the accumulation of human capital at a local level meant that unskilled labour became more expensive, then the local elites would have had an incentive to block the provision of education.[24]

The second concerns possible differences that could have had an effect on the demand for education. Lordships could subject their citizens to greater fiscal pressure, especially when vassalage rights were involved, thus impacting levels of inequality and poverty. In addition, in cases where a territorial lordship included beneficial ownership of the land, this land would be concentrated in the hands of the local lord, thereby worsening economic inequality. Inequality and poverty would act to minimize any demand for education and be associated with lower literacy levels.[25] Finally, the coercion that the lord used on his vassals could have been an element that made it difficult for families to understand that investment in education may have been something that would help their children to rise in society.[26]

[23] An analysis of this particular element is the focus of the paper by Oto-Peralías (2019).
[24] Galor et al. (2009) argue that, given the scant complementarity between agriculture and human capital, the big landowners would have had the incentive to keep investment in education to a minimum. A similar argument can be found in Cinnirella and Hornung (2016)
[25] Beltrán Tapia and Martinez-Galarraga (2018) analyse the effect of economic inequality on Spain's achievements in education in 1860 at a supramunicipal level of territorial disaggregation corresponding to local court jurisdiction districts.
[26] As argued by Cinnirella and Hornung (2016).

Before closing this subsection, it should be pointed out that there is a key aspect when it comes to tackling the empirical side of this investigation. This is the fact that the distribution of the municipalities under different jurisdictional regimes was influenced by the characteristics of the territories themselves (type of pre-existing production activities, soil qualities and potential agricultural uses of the land …), which would have had a direct effect on expected results in terms of the costs and benefits of literacy. Given these circumstances it would be impossible to identify the relationship between jurisdictional regimes and literacy levels with any great precision. Nevertheless, as can be seen in Figure 2, the actual process of conquering territory such as the former kingdom of Valencia meant that the reservation of territories by the Crown or their being granted to the Church, military orders or the nobility following the lordship formula was done more or less randomly. As Oto-Peralías (2019) shows in the case of lordships established towards the end of the conquest of the kingdom of Granada, the Crown reserved for itself the jurisdiction of cities and neighbouring territories, but the rest of the land was portioned out apparently at random as a reward for contributing to the process of conquest.

Figure 2. Valencian municipalities by jurisdiction, population type and language



Source: see text.

2.3. The lordship regime in Valencian municipalities repopulated after the expulsion of the Moriscos in 1609

In addition to the arguments set out under the previous subsection, some authors have pointed out that, although the lordship regime always involved the delegation of power from the Crown to private agents, its negative impact on economic inequality and people's living conditions is unclear. Indeed, in the context of lordships established after the conquest of the Nasrid Kingdom of Granada, Oto-Peralías (2019) presents evidence in favour of the opposite hypothesis, i.e. that the living conditions of the population, apparent from their choice of settlement, were better in lordships than in royal domains.

This type of evidence throws doubt on whether distinguishing between lordships and royal domains will enable us to accurately identify the impact of ancien-regime institutions on human capital accumulation at a local level. This is because, although the negative impact of the lordship on the provision of education seems to be beyond doubt, the effect generated by this institutional framework on the demand for education could act in any direction. Therefore, despite the fact that the existing evidence may enable us to confirm the presence of a negative relationship between municipalities under a lordship regime and the accumulation of human capital, it does not appear that we can simply isolate the mechanism whereby this relationship is established.

Given these circumstances, analysing what happened in the municipalities of Valencia provides us with an opportunity for more precise identification, and that makes this a relevant case study. We need to bear in mind that, as far as Valencia is concerned, the Reconquista did not bring with it the need to repopulate the entire territory. Large areas were already populated by Moslems who continued to inhabit them after the Christian occupation. Gradually the once Moslem population, forcibly converted to Christianity in 1525, became concentrated in rural areas in the interior, settling in villages and hamlets mainly under lordship jurisdiction.[27]

It is also important to point out that most of the lordships granted to nobles, ecclesiastical institutions and military orders in the kingdom of Valencia were somewhat different to those granted in the late Middle Ages in other areas under the Crown of Aragon. In Valencian

[27] Of the 205 municipalities populated by New Christians, 201 had lordship jurisdiction. Unlike the general distribution of royal districts and lordships over the territory, the geographical distribution of the Morisco population over the Valencia region may have followed a pattern that connected the territorial distribution of the lordships established in areas inhabited by Moriscos with certain first-nature geographical characteristics such as altitude, temperature and the ruggedness of the terrain, which may have had an effect on product specialization and work productivity. This is certainly an element that should be taken into account in the analysis. Figure 2 shows the location of Valencian municipalities inhabited exclusively by Moriscos before 1609.

lordships it was normal for the peasants to retain beneficial ownership of the land and for legal ownership of it to remain in the hands of the lord. The reason for this was that these lordships had often been established on territories already occupied by peasants. Also, and unlike in other lordships granted during the time of the Reconquista, in most of the Valencian lordships the holder of privilege (*regalía*) enjoyed jurisdictional rights, as long as he had a minimum of fifteen vassals for repopulation.[28] In short and in contrast to what happened in other areas under the Crown of Aragon, Valencian lordships enjoyed jurisdictional and territorial powers similar to those typical of Castilian lordships established in the heyday of the system in the fourteenth century (Moxó, 1965).

Under the umbrella of an apparently similar lordship regime, however, historiographers have recorded that the living conditions of the Morisco population were particularly burdensome compared to those in lordships populated by Old Christians. The Moriscos were often obliged to provide labour services to the lords and present them with a high percentage of their harvests (Ciscar, 1977, pp. 228-235, estimates this to be 40%). This extractive relationship was much less onerous in neighbouring lordships inhabited by Old Christians (Ciscar, 1993, p.200).

Regardless of its origins, the lordship regime that controlled Valencian municipalities experienced a shock when Philip III ordered the immediate expulsion of the New Christians or Moriscos in 1609. This historic event caused a gap to open up between the conditions existing in lordships granted during the time of the Reconquista and in those that underwent renewal and enabled the lordship regime to continue in territories previously populated by Moriscos. The reason why differences appeared between the two was that, with the expulsion of the Moriscos, the lords lost the income they used to receive from them, which had gone towards paying off debts secured using the lands and dwellings they had occupied as collateral. The nobility argued that the expulsion would make it impossible to pay the taxes on their properties and strongly urged the Crown to mitigate the impact that it would have on their income.

Political dealing finally resulted in the Crown devising a formula that, without renouncing the expulsion of the Moriscos, would make it possible to attend the claims of the Valencian lords without causing lasting harm to the commercial and financial bourgeoisie to whom money (*censos*) was owed. On the one hand the Crown pressed for the creditors (*censalistas*) to allow

[28] This was established by edict of Alfonso IV of Aragon in 1328. Hence the type of jurisdictional power that spread among Valencian lordships during the fourteenth century has been termed 'Alphonsine jurisdiction'.

remission of the lords' debts, while on the other it hoped to drive repopulation of the lands left empty by the expelled population and, importantly, compensated the lords of these areas by reviewing the deeds of bestowal (*escrituras de otorgamiento*) under which their lordship rights had been granted (Reglà, 1964).

In the new town charters (*cartas pueblas*) applying to territories affected by the expulsion, the territorial powers of the lords were extended and they were granted ownership of the farms (*haciendas*) and real estate (*bienes raíces*) that used to belong to the Moriscos until 1609. In addition, with the granting of beneficial ownership came the introduction of extremely pernicious conditions for the new settlers insofar as they not only had to pay taxes and levies but also took on obligations in connection with vassalage, including limitations to their freedom of movement (Reglà, 1964).

Torres Morera (1969) analyses a sample of town charters issued after the expulsion of the Moriscos that included the new Crown-approved conditions that the lords imposed on settlers. He first points out that most of the charters analysed, regardless of the soil quality or type of agriculture existing in the relevant territory, appeared to follow a template. They usually included the following payments that had to be made by the settlers: a sixth, eighth or ninth part of the proceeds (*sexta, octava o novena parte de los frutos*), tithes (*diezmos*), third tithe (*tercio diezmo*), first fruits (*primicia*) and feudal dues (*percepción feudal*). They established that it was the lord who granted beneficial ownership to new settlers in exchange for payments in cash and kind. In addition, new settlers were obliged to maintain personal and continuous residence for a number of years under threat of losing all rights (Torres Morera, 1969). In short, according to this author these new charters were used with the approval of the Crown to compensate the Valencian lords for losses arising from the expulsion of the Moriscos, stipulating conditions that were so harsh that they virtually transformed new settlers into serfs. He adds that these would be the seeds of future social struggles under the guise of political objectives that would continue until the nineteenth century.

The historiography therefore provides evidence of the prevalence of an institutional framework that subjected new settlers in the lordships established on territories occupied by the Morisco population before 1609 to particularly harsh conditions. It indicates, in addition, that this situation persisted throughout the seventeenth and eighteenth centuries. In this regard, Chaney and Hornbeck (2016), for example, link the existence of this highly-extractive regime to the slow

rate of repopulation in former Morisco territories, along with the stabilization of population numbers in a Malthusian equilibrium characterized by the subsistence of fewer inhabitants. Ardit (2009) describes the growth in the average size of farms after the Moriscos were expelled, noting the existence of greater inequality in land distribution due to the granting of beneficial ownership to the lords.

As far as the system's persistence is concerned, Chaney and Hornbeck (2016) identify this through the evidence they contribute regarding the involvement of peasants from former Morisco lordships in the peasant revolts (*Segona Germania*) of 1693 (Garcia Martinez, 1991) and the way these territories took a stance in favour of Archduke Charles in the Spanish War of Succession (1700-1714). The persistence of these institutions continued until at least the end of the ancien regime in Spain. When in 1811 the Spanish liberals were discussing the abolition of the lordship system, a Valencian delegate declared that "all the evils that Valencia suffers today began with the expulsion of the Moriscos", adding in 1813 that those who repopulated former Morisco areas "substituted the expelled in their slavery" (Moxó, 1965, pp.206-207).

Certainly the evidence described proves the presence of a group of lordships in which, at least since 1609, the living conditions imposed on the inhabitants were markedly worse than those existing in any other Valencian territories with the same institutional form. The hypothesis proposed is therefore that, if a distinguishing effect in the relationship between jurisdictional regime and education results is confirmed to exist between non-Morisco and Morisco lordships, this could serve to identify the differences in demand generated by an institutional framework that condemned a large part of the population to poverty.

2.4. The creation of Spanish and Catalan linguistic areas in the Valencia region

Although looking at the difference between Morisco and non-Morisco areas enables us to get closer to finding out how the lordship system slowed down the accumulation of human capital, there is another element in connection with the institutional framework governing education that may affect both supply and demand and which, if not taken into account, would cast doubt on the suitability of the identification process suggested in the previous subsection. This element is whether or not there was a distance between the language of schooling and the main language of use in each territory.

It is fortunate that an analysis of the determinants of literacy levels in the municipalities of Valencia in 1860 provides us with a good opportunity to identify this effect, and for at least two reasons. The first is that today, as in 1860, two main languages coexist in the region, these being Spanish and Catalan. According to the law of 1983 governing the use and teaching of Valenciano (as it is referred to locally), Catalan is the main language of use in two thirds of municipalities, while Spanish predominates in the other third. The situation in the mid-nineteenth century was not very different, since the territorial spread of one language or the other depended mainly on what happened at two points in history – before the development of the liberal state – and the situation has seen no great changes up to the present day.[29] According to Casanova (2001), the current linguistic frontier was basically drawn, firstly, by the arrival of settlers following the conquest of the kingdom of Valencia, and secondly, by the repopulation of territories previously inhabited by Moriscos following their expulsion in 1609.

The second reason, as noted by linguists, is that in Valencia there are no transitional dialects separating Spanish-speaking and Catalan-speaking areas.[30] Naturally the two languages have had an influence on each other in frontier areas, basically Catalan to Spanish until the modern era, and Spanish to Catalan since then. But it can safely be assumed that, apart from among certain local elites (justice, administration), the languages used by the vast majority of people in territories identified as Catalan-speaking or Spanish-speaking were Catalan and Spanish respectively.[31]

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[29] Possibly the most significant change that occurred during the contemporary era was the incorporation into the province of Valencia of the municipalities located in the *comarca* or district of Utiel-Requena. This territory, which until 1851 was part of the kingdom of Castile, was Spanish-speaking. The same thing happened with the municipalities of Sax, which was transferred to the province of Alicante in 1836 from the province of Murcia (the provinces having only been created in 1833), and Villena, which that same year became part of the province of Alicante having previously belonged to Albacete. Another change occurred in Paterna, a Catalan-speaking municipality that was joined by a local council area called San Antonio de Benagéber in 1957. This small settlement was home to a group of people who came from a Spanish-speaking municipality, Benagéber, which disappeared after the construction of a reservoir (of the same name) in 1952. In 1989 San Antonio de Benagéber and Paterna separated and the new municipality, San Antonio de Benagéber, became a Spanish-speaking island surrounded by Catalan-speaking municipalities.

[30] Aragonese, a dialect spoken by some of those who settled in the kingdom of Valencia after the conquest, left a linguistic trace in some of these territories, but it gradually disappeared as a language of use. In territories that today are Catalan-speaking it was absorbed into Catalan for a number of reasons, including the demographic hegemony of the settlers from Catalonia and the prestige of a language that became the official language of the kingdom of Valencia due to its use by the political authorities in administering the municipalities and the incipient State. In what are today's Spanish-speaking areas it was absorbed in the same way by the Spanish language over the centuries following the conquest, especially during the modern era (Guinot, 1999, p.262).

[31] This means that when studying the case of Valencia we do not need to estimate the percentage of the population that had one or the other language as their language of use, as was indeed necessary in other research aimed at analysing the impact of the linguistic mismatch in Prussia (Cinnirella and Schueler, 2016) and India (Jain, 2017).

The establishment of one language or the other can therefore initially be traced back to the granting of lordships by the Crown of Aragon to the nobles who took part in the conquest of Valencia (Aragonese or Catalans) and who in exchange were given rights over the various territories and guided the settling of new inhabitants. As far as the geographical distribution is concerned, Catalan lords tended to be located in territories nearest the coast, while the Aragonese were in the interior (see Figure 2).

This aspect needs to be taken into account in the subsequent analysis given that it could generate an element of endogeneity in the distribution of the languages over the territory, thus introducing a bias into the study of its impact on literacy levels. In this regard it could be argued that the Catalan lords tended to settle in those territories which, given their characteristics, enabled greater specialization in commercial activities or possibly agriculture which, depending on the type of crop, needed to be worked more intensely. In other words it could be thought that the Catalan-speaking territories were also characterized by their greater specialization in activities that made more intensive use of human capital, an aspect that would encourage greater educational investment in them. Or on the contrary, that they specialized in agricultural production sectors that were more intensive in unskilled work, which means that families would have had to deal with a greater opportunity cost when it came to sending their children to school. Whatever the direction of this effect, it is possible for those territories populated by Catalan lords to obtain education results significantly different to those populated by Spanish-speaking Aragonese lords, without this having to be due to a mismatch between the language of use and the language of schooling but instead due to other elements which are related to the prevalence of one language or the other and have a direct effect on education results.

Again, the shock caused to the Valencia area by the expulsion of the Moriscos in 1609 and the subsequent repopulation process provides us with a good opportunity to devise a strategy for identifying the linguistic effect while avoiding a potential endogeneity problem. It should be remembered that those territories inhabited by Moriscos prior to 1609 and repopulated afterwards were mainly to be found in mountainous areas of the interior, occupying large patches of territory (Figure 2), and that after that date these municipalities became part of a Catalan- or Spanish-speaking area depending on where the new settlers came from, in a process that can be considered conditionally exogenous.

Historiographers have analysed the origins of these settlers and recorded that most of them came from within the kingdom of Valencia, generally from neighbouring districts, although some groups have also been identified as coming from coastal towns and even from outside the region (from Mallorca, La Mancha, France and Italy).[32] The language that ultimately became the language of use in each territory was therefore not necessarily that spoken by the local lord, but that of the new settlers in each of these municipalities. Until 1609, for example, the linguistic frontier in the *comarcas* of the Sierra de Espadán and La Plana Baixa was marked by the frontier between the Diocese of Tortosa (Catalan) and the Diocese of Segorbe (Spanish). However, after the expulsion of the Moriscos, repopulation took the Catalan language to Aín, Artana, Tales, Suera, Betxí and Veo. In the Camp de Morvedre, despite the general predominance of Catalan, municipalities such as Gátova and Marines became Spanish-speaking areas after 1609 (Casanova, 2001). According to Sanchis Guarner (1973), Catalan used to be spoken in the Vega Baja del Segura due to the origins of its settlers in the fourteenth and fifteenth centuries, but from the sixteenth century it gradually became a Spanish-speaking area because of repopulation by settlers from Murcia, which increased after the expulsion of the Moriscos.

A specific analysis of whether there exists an effect associated with linguistic distance in the sample comprising the Catalan- and Spanish-speaking municipalities that were affected by the post-Morisco repopulation from 1609 would therefore enable us to deal with the potential endogeneity problem described for the territory as a whole, and at the same time provide a good strategy for identifying it.

An analysis of the existence of a linguistic effect that may have affected educational supply and demand in the case of Valencia would anyway make it necessary to take the preliminary step of proving that before 1857 – which, we need to bear in mind, was when the regulations governing primary education based on the Moyano Law were first established – teaching the three Rs in schools was actually done in Spanish. From a formal perspective, the obligation for the language of schooling to be Spanish dated back almost a century, to 1769. This was done on the orders of Charles III as part of the centralization of the State imposed by the Bourbon dynasty after their victory in the Spanish War of Succession (1714). Nevertheless, the existence of local languages in many of the regions that made up the kingdom of Spain, their widespread use and

[32] The repopulation of the municipality of Tàrbena with settlers from Mallorca is particularly well-known, resulting in the village belonging to the Catalan linguistic domain. Even today it still retains vocabulary and certain cultural aspects typical of the Balearic Islands.

even their survival in many documents of the time leads us to think that perhaps the vernacular languages were used for teaching in municipal schools, especially by parish priests or charitable bodies. Although how widespread this practice was is impossible to quantify, it has been confirmed by various investigations into the history of education in Spain (Escolano, 1997).

Even so, it seems to be a reasonable hypothesis that the construction of the liberal State and the growing interest in creating a kind of national mindset would have favoured the establishment of Spanish as the language of teaching in municipal schools and that the use of regional languages would have gradually diminished.[33] From a regulatory perspective, this was the philosophy of the enlightened liberals of the eighteenth century, which was given shape and form in the Constitution of 1812, and this was how it appeared in documents involving projects and plans for regulating education in Spain put forward from that time on (the Quintana Report of 1814, the Plan Rivas of 1836, the Primary Instruction Plan of 1838) until the Moyano Law was passed in 1857.

Historians of education have defended the growing use of Spanish in schools on the basis of evidence relating to teacher training. Gabriel (1994), for example, has shown that, since the Normal Schools for teacher-training were created in 1849, their curricula only ever considered Spanish as the language in which to teach grammar or the history and geography of Spain. Another stream of the literature has tackled the problem by analysing the materials and textbooks used in primary and secondary teaching, confirming that all of them were published in Spanish.[34] As a result, historians of education have argued that Spanish gradually became the main language of schooling in primary education across Spain and that by the late nineteenth century there was virtually no trace of teaching in any other language in schools controlled by the municipal Boards of Primary Education (Escolano, 2012).

In any case, as far as the analysis proposed in this article is concerned, the survival of some isolated outpost on the map of Valencian municipalities where literacy in Catalan may have been taught would work against the hypothesis put forward in the text. Ultimately it would generate

[33] This process of linguistic unification would come about contemporaneously in other European states that were in the process of consolidation over the same period. Fouret and Ouzof (1980) describe the process, seemingly very similar to that of Spanish in Spain, whereby French was introduced in schools in territories that had their own languages such as Corsican and Breton. Cinnirella and Schueler (2016) describe the introduction and spread of German in Polish-speaking territories during the time of the Empire.

[34] It is significant that the widely-used *El instructor de la Juventud* (Young People's Instructor) was published by Esteban Paluzie in 1845 in Barcelona but was of course in Spanish. Textbooks from this publisher, such as the *Manual de Escritura y Lenguaje* (Manual of Writing and Language), were used in the Normal School of Barcelona.

a bias that would act against the hypothesis formulated, i.e. the existence of a relationship between linguistic mismatch and literacy.

To summarize, in this work we propose to study three institutional aspects to help us understand why there was such variability in education levels in Valencian municipalities in the mid-nineteenth century. The first two are connected to the institutional framework that existed in municipalities under the ancien regime, while the third concerns the presence of a mismatch between the language of use and the language of schooling over much of the region's geography. Tackling the analysis jointly and taking advantage of the differences in impact deriving from the shock caused by the expulsion of the Moriscos on the institutional configuration of the territory and its linguistic map gives us the chance to accurately identify each of these effects, isolate them precisely and limit any underlying endogeneity problems that may be present. In the following paragraphs we describe the sources used and the evidence available for study.

3. Sources, data description and descriptive analysis

The data set used to perform the empirical analysis was created by collecting and homogenizing information from different data sources.[35] One of the main variables of the analysis, the endogenous or explanatory variable, is the rate or percentage of male literacy by municipality, which was obtained from the Spanish population census of 1860. One of the difficulties in gathering this information is that the number of municipalities has changed over the course of modern Spanish history as a result of many either merging with or breaking away from others. Therefore, following Beltrán Tapia et al. (2019), the male literacy rate has been computed using 524 municipal entities that correspond to the municipalities in today's region of Valencia.[36] According to the census of 1860, the average rate of male literacy was 14.30%, the median 13.48%, and the minimum and maximum values 0.92%, and 43.46% respectively (Table 1).

[35] A detailed description of the sources and methods used to construct the data set can be found in the Appendix.
[36] In fact there are 542 municipalities in the Comunitat Valenciana today. However, as there have been various changes involving different municipalities since 1860, we have made some adjustments in order to have consistent municipalities over time. Specifically, we have merged a number of them, thereby converting 35 old municipalities into 18 new artificial entities or pseudo-municipalities (see Table A1 in the Appendix).

Table 1: Main descriptive statistics for male literacy in 1860 (percentages)[a]

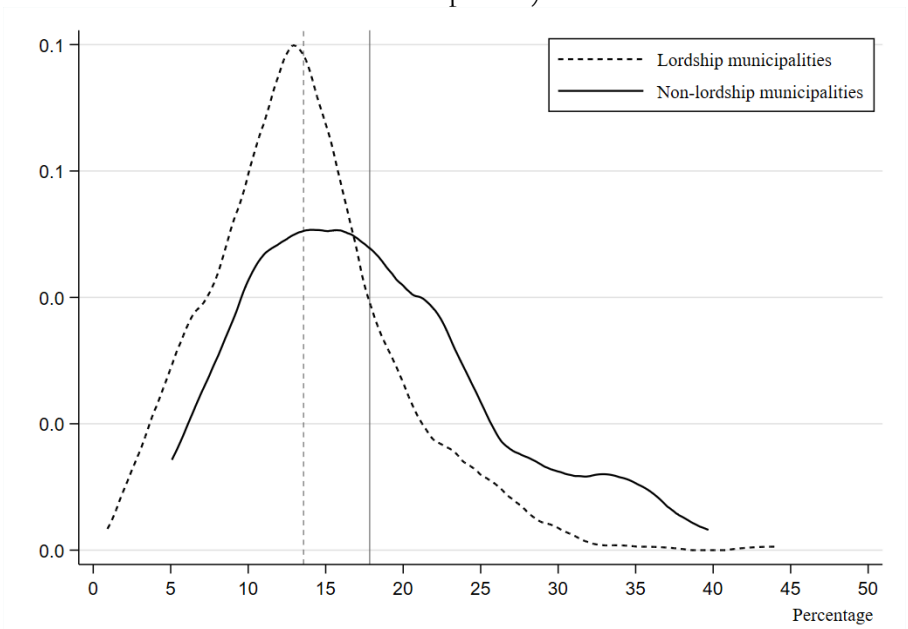
	Municipalities	N	Mean[b]	sd	Min	p25	p50	p75	Max
-	All	524	14.30	6.54	0.92	10.11	13.48	17.72	43.96
1	Lordship	431	13.57	5.97	0.92	9.49	13.05	16.64	43.96
	Non-lordship	93	17.84	7.83	5.08	12.01	17.23	21.52	39.70
2	Morisco	216	11.89	5.44	0.92	7.75	11.60	15.18	31.95
	Non-Morisco	308	16.00	6.72	3.39	11.44	14.58	19.87	43.96
3	Catalan-speaking	381	13.44	6.08	0.92	9.39	12.86	16.46	39.70
	Non-Catalan-speaking	143	16.60	7.16	3.53	11.87	15.15	20.63	43.96
4	Lordship, Morisco	212	11.83	5.45	0.92	7.69	11.57	15.10	31.95
	Lordship, non-Morisco	219	15.20	5.99	3.39	11.31	14.22	18.10	43.96
5	Lordship, Morisco, Catalan	157	11.22	5.16	0.92	7.37	11.27	14.47	25.17
	Lordship, Morisco, non-Catalan	55	13.57	5.93	3.53	8.32	13.22	17.44	31.95

Notes: [a] The percentage of male literacy is computed as the number of men who could read and write as a proportion of the total male population of each municipality. [b] A two-sample t-test (with equal variance) for each group was performed to compare average values. The results indicate that the averages are statistically different with a p-value equal to 0.0000, except for Group 5, which has a p-value equal to 0.0021.
Sources: the Census of 1787 (Census of Floridablanca), the 1860 Census of Population (Lapeyre, 1959, 1986), the *Ley de uso y enseñanza del valenciano* (Generalitat Valenciana, 1983), and own elaboration.

The information relating to the institutional characteristics of Valencian municipalities during the ancien regime was obtained from the census of 1787, i.e. the Census of Floridablanca. As stated earlier, this source provides information on the size, structure and occupation of the population by settlement, and these settlements are classified by category (city, town, village, hamlet…) and jurisdiction. The census classifies the type of jurisdiction of local entities as *royal*, *ecclesiastical lordship*, *secular lordship* and *military orders*. Using the information on the kingdom of Valencia, we have been able to identify the jurisdictional regime of all 524 municipalities. The *royals* had less relative importance than the *lordships*, accounting for 18% and 82% respectively (Figure 2). Most Valencian *lordships* were defined as *secular*, while the rest were divided between *ecclesiastical* and *military orders*. In fact we do not distinguish between *ecclesiastical*, *secular* and *military orders* in the empirical exercise, but instead consider all three categories in the same group. With this information we create the dummy variable *lordship*, which is equal to one when the municipality is classified as lordship and equal to zero when classified as royal. On average the percentage of male literacy is lower in lordships than in non-lordship municipalities (13.57% versus 17.84%) and this difference is statistically significant at 1%.

Figure 3 shows the kernel densities for male literacy percentages for both lordship and non-lordship (royal) municipalities. The distribution of lordship municipalities, which is left-skewed, is located to the left of the non-lordship distribution, indicating that the latter has higher percentages of male literacy. However, the right tail for lordships is longer. In fact the municipality with the maximum percentage of male literacy (43.96%) is a lordship. Overall, these results indicate that the type of jurisdiction can affect education levels. As discussed earlier, lordships are characterized in the literature as an institutional framework that could affect both the supply of and demand for education.

Figure 3. Kernel distribution for male literacy (lordship versus non-lordship (royal) municipalities)



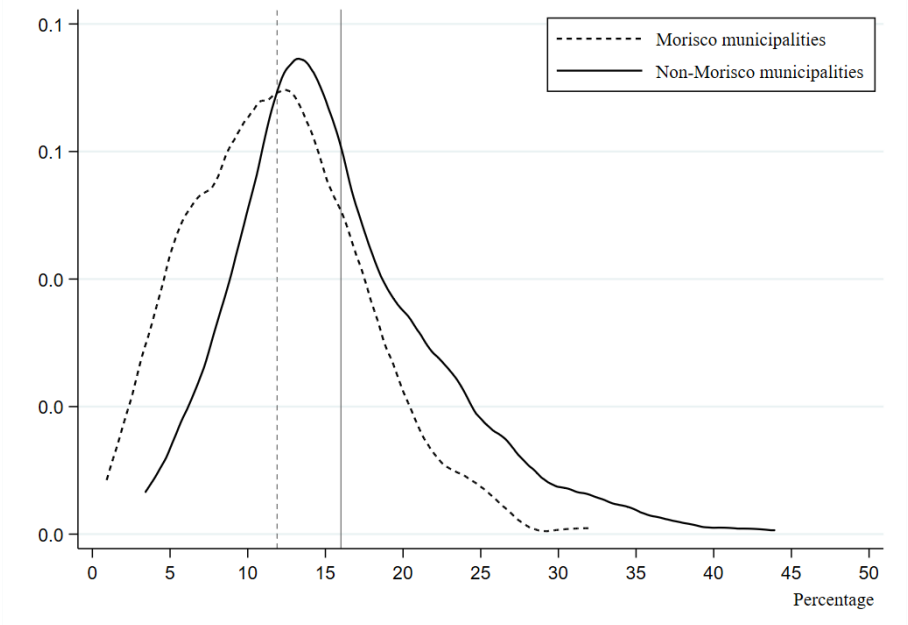
Notes: kernel=Epanechnikov, bandwidth=1.4165 if "lordship"=1, bandwidth=2.5625 if "lordship"=0.
The vertical lines represent average values.
Sources: Census of 1787 (Census of Floridablanca) and own elaboration.

Identification of municipalities classified as Morisco, i.e. inhabited by New Christians before their expulsion in 1609, was obtained from Lapeyre (1959, 1986). This author's meticulous research provides information on the Morisco and Old Christian populations before the expulsion. The level of territorial disaggregation is the municipality, although in some cases the figures are available at an even more disaggregated level (town, village or hamlet). As well as distinguishing between Morisco and non-Morisco municipalities, Lapeyre also identified mixed municipalities in which Morisco and Old Christian populations coexisted. However, since in

most of these areas the percentage of Morisco population is residual or located in outlying districts, municipalities classified as mixed according to Lapeyre (1959, 1986) are considered to be non-Morisco in the empirical analysis. Of the 524 municipalities, therefore, 216 are classified as Morisco and 308 as non-Morisco (Figure 2).

On the basis of this information we create the dummy variable *morisco*, which is equal to one when the municipality is classified as Morisco and zero otherwise. On average the percentage of male literacy is significantly lower in Morisco than in non-Morisco municipalities (11.89% versus 16.00%), a difference that is statistically significant at 1%. Figure 4 shows the kernel densities for male literacy percentages in both Morisco and non-Morisco municipalities. Both distributions are left-skewed and indicate that male literacy is lower in the Morisco areas. The municipality with the highest percentage (43.96%) is non-Morisco.

Figure 4. Kernel distribution for male literacy (Morisco versus non-Morisco municipalities)

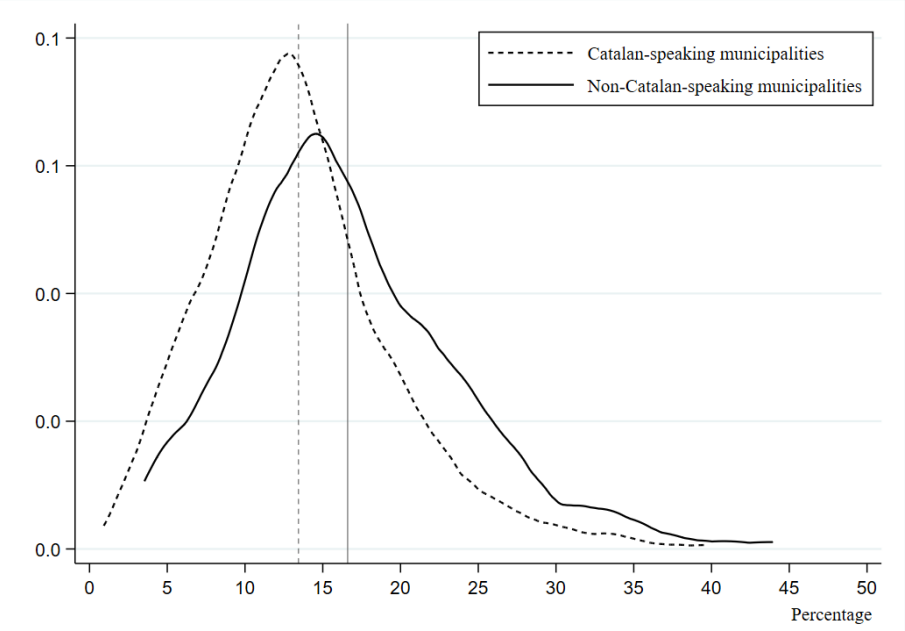


Notes: kernel=Epanechnikov, bandwidth=1.6721 if "morisco"=1, bandwidth=1.7870 if "morisco"=0.
The vertical lines represent average values.
Sources: Census of 1860, Lapeyre (1959, 1986) and own elaboration.

The last key variable needed to develop the empirical analysis classifies the 524 municipalities into Catalan or Spanish language areas as defined by the *Ley de uso y enseñanza del valenciano* passed by the *Generalitat Valenciana* regional government in 1983. As mentioned before, the prevalence

of one language or the other dates back to medieval and early modern times, so the situation today is more or less the same as that found at the end of the ancien regime or in the mid-nineteenth century. Thus 143 municipalities are assigned to the Spanish language area and 381 to the Catalan (Figure 2). We now create the dummy variable *catalan*, which is equal to one when the municipality belongs to a Catalan language area and zero otherwise. On average male literacy is significantly lower in Catalan-speaking than in non-Catalan-speaking municipalities (13.44% versus 16.60%) and this difference is statistically significant at 1%. Figure 5 shows the kernel densities for male literacy in municipalities belonging to the two language areas. In this case the distribution for Catalan-speaking municipalities is to the left of the distribution for Spanish-speaking municipalities, indicating lower percentages of male literacy in those belonging to the Catalan areas. The municipality with the highest percentage (43.96%) is non-Catalan-speaking.

Figure 5. Kernel distribution for male literacy (Catalan-speaking versus non-Catalan-speaking municipalities)

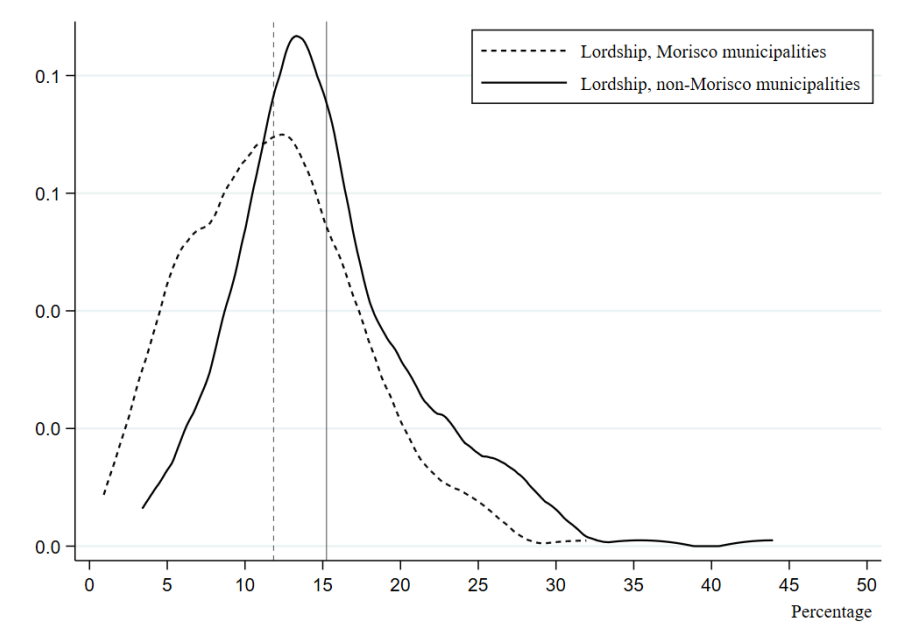


Notes: kernel=Epanechnikov, bandwidth=1.4369 if "catalan"=1, bandwidth=2.1624 if "catalan"=0. The vertical lines represent average values.
Sources: Census of 1860, *Ley de uso y enseñanza del valenciano* (Generalitat Valenciana, 1983) and own elaboration.

Although interesting, these results could to some extent be due to the fact that some of the categories (e.g. the percentage of municipalities classified as lordships being higher among Morisco municipalities than in the sample as a whole) were determined simultaneously. To solve

this issue, our empirical strategy involves carrying out the analysis by combining different categories in order to establish the existence of effects between pairs that share some characteristics but differ in one area. First we focus on the 431 lordship municipalities and create the dummy variable *lordship_mor*, which is equal to one when the municipality is classified as a lordship and Morisco and zero otherwise. This allows us to isolate the effect of the type of jurisdiction (lordship versus royal) and test whether the harsher living conditions endured by those who repopulated the municipalities that emptied after the expulsion of the Moriscos in 1609 had an impact on the male literacy rate in 1860 when compared to non-Morisco lordships. There are 212 *lordship_mor* and 219 *lordship_non-mor* municipalities. On average the *lordship_mor* municipalities have significantly lower rates of male literacy (11.83% versus 15.20%) and this distribution is located to the left of the *lordship_non-mor* municipalities (Figure 6). These results illustrate the hypothesis that there may be an effect that links the particularly harsh living conditions of populations in Morisco-lordship municipalities with literacy rates.

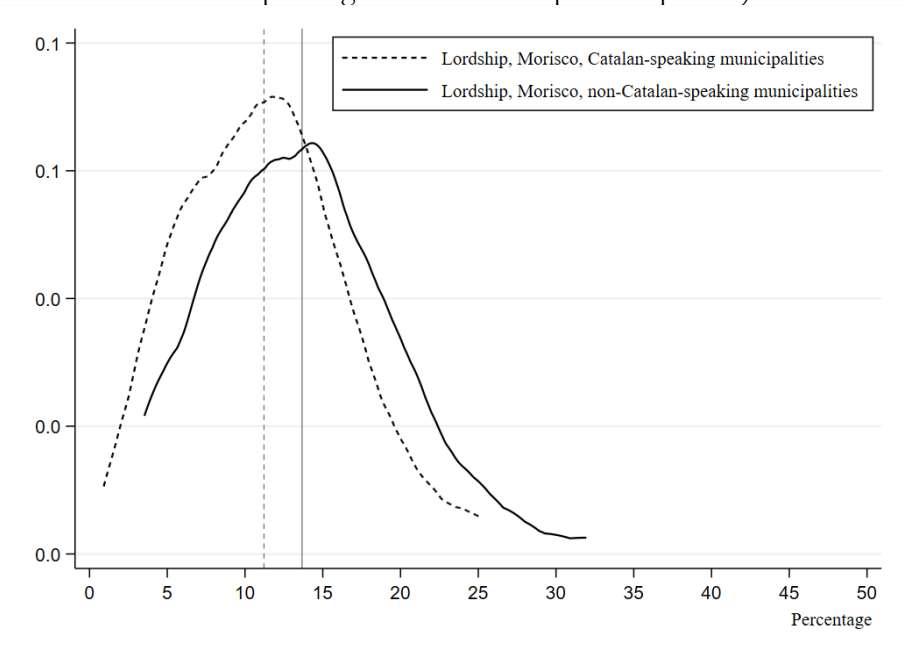
Figure 6. Kernel distribution for male literacy (Morisco lordship versus non-Morisco lordship municipalities)



Notes: kernel=Epanechnikov, bandwidth=1.6804 if "lordship_mor"=1, bandwidth=1.5428 if "lordship_mor"=0. The vertical lines represent average values.
Sources: Census of 1787, Census of 1860, Lapeyre (1959, 1986) and own elaboration.

Second, we look at the 212 municipalities classified as Morisco lordships and examine whether or not they belong to the Catalan language area. We create the dummy variable *lordship_mor_cat*, which is equal to one when the municipality is a Catalan-speaking Morisco lordship and zero otherwise. There are 157 Catalan-speaking Morisco lordship municipalities and 55 that are non-Catalan-speaking. Those in Catalan-speaking areas show significantly lower average (11.22% versus 13.57%) and maximum values (25.17% versus 31.95%) and their distribution, as shown in Figure 7, is located to the left of the non-Catalan-speaking municipalities. All this suggests that there is probably a language mismatch effect, i.e. that the mismatch between the language of use and the language of schooling had a negative effect on literacy rates.

Figure 7. Kernel distribution for male literacy (Catalan-speaking Morisco lordship versus non-Catalan-speaking Morisco lordship municipalities)



Notes: kernel=Epanechnikov, bandwidth=1.6879 if "lordship_mor_cat"=1, bandwidth=1.6879 if "lordship_mor_cat"=0. The vertical lines represent average values.
Sources: Census of 1787 (Census of Floridablanca), Census of 1860, Lapeyre (1959, 1986), *Ley de uso y enseñanza del valenciano* (Generalitat Valenciana, 1983) and own elaboration

The empirical analysis also needs to include additional elements that generate variability in the costs and benefits of education – and thus in the literacy rates recorded – between municipalities. We therefore take into account the total population as well as an approximation of the settlement pattern in each municipality. This means we can analyse whether the inhabitants were

concentrated in the core population entity (towns, villages) or scattered across minor entities (hamlets, homesteads, mills, rural dwellings and isolated buildings). To do this we create a variable that measures the percentage of population that lived in the main population centre. In this case the information comes from the *Nomenclator* of Spain for 1887.

The average population in the 524 municipalities of our sample is 2,434, but the high standard deviation of this variable (6.795) indicates that there are sizeable differences between them (Table 2). In fact, the figures range from 90 to 140,614. As for settlement patterns, the average population living in the core entity is 86.03% with a standard deviation of 18.14%. The median (94.21%) is higher than the average, which means that over 50% of the municipalities show a more concentrated settlement pattern than the average municipality. Finally, since geographical characteristics could also affect literacy levels, the analysis includes controls for both first-nature (temperature, rainfall, altitude and ruggedness) and second-nature geography (distance to roads).[37]

Table 2. Main descriptive statistics of the control variables

Variable	N	Mean	sd	Min	p25	p50	p75	Max
Population 1860	524	2,434	6,795	90	709	1,229	2,386	140,61
% population in the core entity	524	86.03	18.14	4.64	80.68	94.21	98.15	100.00
Distance to main road (km)	524	17.83	15.76	0.06	4.49	13.64	27.71	69.14
Temperature (degrees)	524	15.67	1.98	9.67	14.23	16.19	17.30	18.30
Rainfall (mm)	524	470.22	62.91	280.95	439.90	464.38	507.74	627.29
Altitude (m)	524	372.48	316.41	1.18	90.01	298.03	624.15	1330.57
Ruggedness	524	91.72	62.54	1.46	34.77	90.59	136.57	289.78

Sources: Census of population 1860, *Nomenclator de España*, 1887, GIS.

[37] We have also constructed additional variables representative of the second-nature geographical characteristics of the municipalities (distance to the coast, distance to the capital city). Since taking these alternative measures into account does not alter the main results of the empirical exercise, they are not described in the text.

4. Empirical analysis

Since the descriptive results are broadly in line with the hypotheses discussed in the previous sections, we delve further using an econometric strategy that allows us to control for additional factors and deal with some statistical issues. The proposed baseline equation is:

$$\ln y_i = \alpha_0 + \alpha_1 lordship_i + \alpha_2 morisco_i + \alpha_3 catalan_i + \alpha_4 X_i + \alpha_5 Z_i + u_i \quad (1)$$

where the endogenous or explanatory variable (lny_i) is the logarithm of the percentage of male literacy in 1860, and the subscript $i = 1, \ldots, 524$ refers to the municipality. The dummy variable *lordship* is equal to one if the municipality is classified as a lordship and zero if it is classified as royal. The dummy variable *morisco* is equal to one if the municipality was inhabited by Moriscos before their expulsion in 1609 and zero otherwise. The dummy variable *catalan* is equal to one if the municipality belongs to the Catalan language area and zero if it belongs to the Spanish. Thus we can compare lordship versus royal municipalities, Morisco versus non-Morisco municipalities, and Catalan-speaking versus Spanish-speaking municipalities.

Specification (1) also includes a vector of generic control variables (X_i) and a group of geographical control variables (Z_i). The generic group contains information about the municipality's population and settlement pattern. There are two variables relating to population, these being the logarithm of the population in 1860 and the square of this term, which shows if the population effect is decreasing or increasing. As a proxy for the settlement pattern we include the percentage of population living in the municipality's core entity. The geographical control variables contain information about both first-nature (temperature, rainfall, altitude and ruggedness) and second-nature geography (the logarithm of the distance in meters to the main road). The error term is represented by (u_i).

The results relating to specification (1) are presented in Table 3, where each column reflects a different estimation depending on whether or not the geographical control variables are included. All the regressions include the individual dummy variables and generic control variables. Regression (1) is the baseline, while regressions (2) – (5) add geographical control variables. To avoid autocorrelation problems, the variables related to first-nature geography are included individually and not at the same time. Regression (2) adds temperature, regression (3) adds rainfall, regression (4) adds altitude, and regression (5) adds ruggedness. The variable

relating to second-nature geography, i.e. distance to the main road, is included in all four regressions.

Table 3. Estimation results (econometric specification 1)

	(1)	(2)	(3)	(4)	(5)
Dummy variables					
Lordship	-0.1377***	-0.1167**	-0.1560***	-0.1133**	-0.1490***
	(0.0515)	(0.0482)	(0.0536)	(0.0493)	(0.0536)
Morisco	-0.2769***	-0.2032***	-0.2462***	-0.2271***	-0.2511***
	(0.0459)	(0.0446)	(0.0466)	(0.0451)	(0.0466)
Catalan	-0.2259***	-0.1053**	-0.2505***	-0.1259***	-0.2204***
	(0.0422)	(0.0455)	(0.0435)	(0.0463)	(0.0421)
Control variables					
ln(Population 1860)	0.6020*	0.4944*	0.5953*	0.5377*	0.6237**
	(0.3070)	(0.2941)	(0.3076)	(0.3064)	(0.3110)
[ln(Population 1860)]^2	-0.0323	-0.0241	-0.0320	-0.0273	-0.0341
	(0.0207)	(0.0198)	(0.0208)	(0.0207)	(0.0211)
Settlement pattern (1887)	0.0055***	0.0053***	0.0047***	0.0053***	0.0048***
	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)
Geographical control variables					
ln(Distance main road)		-0.0733***	-0.0585***	-0.0761***	-0.0464***
		(0.0150)	(0.0172)	(0.0156)	(0.0168)
Temperature		-0.0711***			
		(0.0108)			
Rainfall			0.0006*		
			(0.0004)		
Altitude				0.0004***	
				(0.0001)	
Ruggedness					0.0001
					(0.0003)
Constant	-0.1579	1.3436	-0.2012	-0.0305	-0.0670
	(1.1249)	(1.1050)	(1.1111)	(1.1164)	(1.1306)
Observations	524	524	524	524	524
R-square	0.2367	0.3078	0.2570	0.2915	0.2525

Notes: There are three different reference or control groups: royal municipalities, non-Morisco municipalities and Spanish-speaking municipalities. Robust standard errors are in parentheses. Coefficients are statistically significant at * p<0.1, ** p<0.05, *** and p<0.01.

The estimated coefficients of the dummy variables have the expected negative sign and are statistically significant in all the regressions. This means that male literacy rates in 1860 were lower in lordships than in royal municipalities, in Morisco than in non-Morisco municipalities, and in Catalan-speaking than in Spanish-speaking municipalities. For example, the coefficient related to the dummy variable *lordship* takes values from -0.1133 (column 4) to -0.1560 (column 3). Since the dependent variable is log-transformed, taking the exponential of the coefficients means that male literacy in 1860 in lordship municipalities was between 10.7% and 14.4% lower than in royal municipalities. Male literacy in Morisco municipalities was between 18.4% and 24.2% lower than in non-Morisco municipalities. Finally, in Catalan-speaking municipalities the literacy rate was between 10.0% and 20.2% lower than in non-Catalan-speaking municipalities.

As regards the general control variables, both the population and its concentration in the core entities have a positive effect on male literacy in all the regressions. According to the first model, if the population of the municipality increases by 1%, the percentage of male literacy increases by an average of 0.60%. If the population concentrated in the core entity increases by 1%, it increases by an average of 0.55%.

However, this baseline specification suffers from two main shortcomings that arise from the specific characteristics of the variables relating to the location of the Moriscos and the language of the municipality. On the one hand, the Moriscos were mainly located in lordship municipalities. And on the other, as shown in Figure 2, the establishment of Catalan or Spanish as the main language in each particular municipality was not random. So as well as capturing the language distance effect, coefficient (α_3) may also be capturing some geographical and economic characteristic of the municipalities. This specification does not therefore allow us to accurately capture the effects of being a Morisco or Catalan-speaking municipality.

To solve this problem we propose a second specification that takes jointly into account the three relevant elements: jurisdiction (lordship or royal), whether or not it was a Morisco municipality, and the language area (Catalan or Spanish). The municipalities can thus be classified into eight groups: (1) lordship, Morisco, Catalan-speaking, (2) lordship, Morisco, non-Catalan-speaking, (3) lordship, non-Morisco, Catalan-speaking, (4) lordship, non-Morisco, Spanish-speaking, (5) royal, Morisco, Catalan-speaking, (6) royal, Morisco, Spanish-speaking, (7) royal, non-Morisco, Catalan-speaking, and (8) royal, non-Morisco, Spanish-speaking municipalities. With this classification eight dummy variables are created, seven of which are included in the econometric

specification (*lordship_mor_cat*, *lordship_mor_spa*, *lordship_nomor_cat*, *lordship_nomor_spa*, *royal_mor_cat*, *royal_mor_spa*, *royal_nomor_cat*), while the other (*royal_nomor_spa*) is used as a control group. So the equation for the third specification is as follows:

$$\ln y_i = \beta_0 + \beta_1 lordship_mor_cat_i + \beta_2 lordship_mor_spa_i + \beta_3 lordship_nomor_cat_i + \\ + \beta_4 lordship_nomor_spa_i + \beta_5 royal_mor_cat_i + \beta_6 royal_mor_spa_{i_i} + \beta_7 royal_nomor_cat_i + \\ + \beta_8 X_i + \beta_9 Z_i + u_i \tag{2}$$

In this specification the comparison between estimated coefficients for each pair of dummy variables, which share two characteristics, enables us to accurately identify the effect associated with the third characteristic. For example, we can test the effect of language distance without it being affected by other factors by isolating it from the effect of the local institution by focusing only on Morisco lordship municipalities and comparing coefficients β_1 and β_2. Thus we can test whether or not Catalan-speaking Morisco lordship municipalities have lower literacy rates than their Spanish-speaking equivalents. The results of the specification (2) estimations are presented in Table 4.

On the basis of these results we can test whether the type of jurisdiction has an effect on literacy rates by comparing the estimated coefficients for the pair of dummies that share being Morisco or non-Morisco plus the language domain, but which differ in jurisdiction. If we then focus on the non-Morisco, Spanish-speaking municipalities and compare the estimated coefficients of the dummy variables *lordship_nomor_spa* and *royal_nomor_spa* (which is the control group), we can analyse whether the municipality's type of jurisdiction has an effect on its level of education. The estimated coefficient of the variable *lordship_nomor_spa* is negative and statistically significant at 5% in all the regressions except regression (3), where it is at 1%. Similar results are obtained through a comparison of the groups *lordship_mor_cat* and *royal_mor_cat*, *lordship_mor_spa* and *royal_mor_spa*, and *lordship_nomor_cat* and *royal_nomor_cat*.[38] Our results therefore confirm that the level of education was lower in lordship than in royal municipalities.

[38] The difference between the coefficients of the dummy variables *lordship_mor_spa* and *royal_mor_spa* is statistically significant at 1% in all the regressions. The comparison of the other two pairs of dummies is not statistically different from zero.

Table 4. Estimation results (econometric specification 2)

Dependent variable: logarithm of the percentage of male literacy in 1860
Econometric model: ordinary least squares

	(1)	(2)	(3)	(4)	(5)
Dummy variables					
Lordship, Morisco, Catalan	-0.6965***	-0.4965***	-0.7164***	-0.5339***	-0.6745***
	(0.0824)	(0.0851)	(0.0874)	(0.0862)	(0.0860)
Lordship, Morisco, Spanish	-0.5406***	-0.4685***	-0.5428***	-0.4677***	-0.5312***
	(0.0989)	(0.0964)	(0.1006)	(0.0983)	(0.1033)
Lordship, non-Morisco, Catalan	-0.4377***	-0.3126***	-0.4930***	-0.3178***	-0.4451***
	(0.0766)	(0.0762)	(0.0840)	(0.0783)	(0.0799)
Lordship, non-Morisco, Spanish	-0.2004**	-0.2034**	-0.2246***	-0.1966**	-0.2067**
	(0.0847)	(0.0815)	(0.0865)	(0.0824)	(0.0879)
Royal, Morisco, Catalan	-0.4524**	-0.2544	-0.4500**	-0.2791	-0.4131**
	(0.1885)	(0.1890)	(0.1900)	(0.1989)	(0.1765)
Royal, Morisco, Spanish	-0.1797**	-0.2087***	-0.2283***	-0.1882**	-0.1889**
	(0.0790)	(0.0784)	(0.0841)	(0.0798)	(0.0826)
Royal, non-Morisco, Catalan	-0.3483***	-0.2559***	-0.3867***	-0.2630***	-0.3418***
	(0.0925)	(0.0895)	(0.0992)	(0.0915)	(0.0973)
Control variables					
ln(Population 1860)	0.6144*	0.5073*	0.6099*	0.5449*	0.6373**
	(0.3167)	(0.3026)	(0.3171)	(0.3149)	(0.3213)
[ln(Population 1860)]^2	-0.0328	-0.0246	-0.0326	-0.0275	-0.0347
	(0.0214)	(0.0204)	(0.0215)	(0.0213)	(0.0218)
Settlement pattern (1887)	0.0056***	0.0054***	0.0048***	0.0054***	0.0049***
	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)
Geographical control variables					
ln(Distance main road)		-0.0740***	-0.0598***	-0.0764***	-0.0473***
		(0.0150)	(0.0173)	(0.0157)	(0.0169)
Temperature		-0.0719***			
		(0.0109)			
Rainfall			0.0007*		
			(0.0004)		
Altitude				0.0004***	
				(0.0001)	
Ruggedness					0.0001
					(0.0003)
Constant	-0.1566	1.3717	-0.2179	0.0015	-0.0721
	(1.1539)	(1.1316)	(1.1399)	(1.1409)	(1.1621)
Observations	524	524	524	524	524
R-square	0.2416	0.3114	0.2607	0.2946	0.2563

Notes: The control group is royal, non-Morisco, Spanish-speaking municipalities (*royal_nomor_spa*). Robust standard errors are in parentheses. Coefficients are statistically significant at * p<0.1, ** p<0.05, *** and p<0.01.

Likewise, using the results presented in Table 4 we can analyse whether or not there is an effect related to the particular characteristics of lordships established in areas inhabited by Moriscos until 1609. This relationship can be tested by comparing the estimated coefficients of the dummy variables *lordship_mor_cat* and *lordship_nomor_cat,* and *lordship_mor_spa* and *lordship_nomor_spa*. In both cases the fact of being Morisco municipalities has a negative effect on male literacy rates, and the difference is statistically significant at 1% for all the regressions. The same test can be performed on pairs of municipalities that are royal and have the same official language. The coefficient of the variable *royal_mor_spa* is more negative than the coefficient of the variable *royal_nomor_spa* (control group), and the difference is statistically significant in all the regressions. Although the coefficient of the variable *royal_mor_cat* is more negative than the coefficient of the variable *royal_nomor_cat* (except in regression 2), in this case the difference is not statistically significant.

Finally, in order to test whether language distance has an effect on literacy rates, we compare the estimated coefficients for every pair of dummies that share institutional characteristics but differ in the linguistic domain. Thus if we focus on Morisco lordship municipalities, we can analyse whether the language domain of the municipality has an effect on education levels by comparing the estimated coefficients of the variables *lordship_mor_cat* and *lordship_mor_spa*. In this case all the estimated coefficients are negative and statistically significant, with the negative effect being greater when the municipality is Catalan-speaking.[39] Similar results are obtained when comparing the groups *lordship_nomor_cat* and *lordship_nomor_spa*, *royal_mor_cat* and *royal_mor_spa*, and *royal_nomor_cat* and *royal_nomor_spa* (which is the control group).[40] Most of these results confirm that the distance between the language used by the inhabitants of any municipality and the language used in schools has a negative effect on literacy rates, regardless of the institutional regime of these municipalities during the ancien regime.

[39] The difference is statistically significant at 5% in regressions (1), (3) and (5).
[40] The difference between the coefficients of the dummy variables *lordship_nomor_cat* and *lordship_nomor_spa* and *royal_nomor_cat* and *royal_nomor_spa* (the control group) is statistically significant in all the regressions. The difference between the coefficients of the dummy variables *royal_mor_cat* and *royal_mor_spa* is not statistically significant.

To summarize, in this section we have presented an econometric strategy that has enabled us to identify the effect of the three institutional elements that partly explain the great variability in literacy levels in Valencian municipalities in 1860, these elements being the jurisdictional regime, whether or not the population was Morisco before 1609, and the language used by the population. The results confirm the relevance of these three elements. So what was the relative importance of these variables? For the purposes of ranking the importance of each element, we next present an additional specification that enables us to summarize the previous results and quantitatively show the effect that each has on literacy rates. This specification (3) consists of including both the individual dummy variables (as in specification 1) and the interaction between them (as in specification 2). The control variables related to population and settlement patterns are included, but the geographical control variables are excluded so as to avoid autocorrelation problems:

$$\ln y_i = \delta_0 + \delta_1 lordship_i + \delta_2 morisco_i + \delta_3 catalan_i + \delta_4 (lordship \times morisco \times catalan)_i + \delta_5 X_i + u_i \quad (3)$$

Table 5 presents the predictive margins estimated for both the individual dummy variables and the interactions. Column (4), which takes one of the groups as a control, allows us to easily compare the differences by group. On average, the highest percentages of male literacy are to be found in royal, non-Morisco, Spanish-speaking municipalities [100], followed by royal, Morisco, Spanish-speaking [83.5], lordship, non-Morisco, Spanish-speaking [81.8], royal, non-Morisco, Catalan-speaking [70.6], lordship, non-Morisco, Catalan-speaking [64.6], royal, Morisco, Catalan-speaking [63.6], lordship, Morisco, Spanish-speaking [58.2], and finally lordship, Morisco, Catalan-speaking municipalities [49.8].

Table 5. Predictive margins (econometric specification 3)

Dependent variable: logarithm of the percentage of male literacy in 1860
Econometric model: ordinary least squares

	(1)	(2)	(3)	(4)
	Margin	Delta SE[a]	Sign.[b]	
Individual dummies				
Lordship				
0	2.7667	0.0494	***	**100**
1	2.5431	0.0243	***	80.0
Morisco				
0	2.7652	0.0296	***	**100**
1	2.5445	0.0500	***	80.2
Catalan				
0	2.7817	0.0274	***	**100**
1	2.5281	0.0479	***	77.7
Interactions				
lordship-morisco-catalan				
0-0-0	3.0118	0.0701	***	**100**
0-0-1	2.6635	0.0632	***	70.6
0-1-0	2.8321	0.0248	***	83.5
0-1-1	2.5594	0.1732	***	63.6
1-0-0	2.8115	0.0499	***	81.8
1-0-1	2.5741	0.0323	***	64.6
1-1-0	2.4713	0.0667	***	58.2
1-1-1	2.3154	0.0403	***	49.8
Control variables	Yes			
Observations	524			
R-square	0.2416			

5. Conclusions

Using the case of Valencia, in this article we have analysed the impact on education levels deriving from the jurisdictional regime of municipalities in both royal domains and lordships. By distinguishing between lordships populated by Old Christians and those established in areas inhabited by Moriscos until their expulsion in 1609, we have identified the existence of a differential effect in the case of those lordships in which the inhabitants were subjected to

particularly harsh living conditions. Finally, we have used this case to analyse any impact that may have been caused in the municipalities by the introduction of an education system that sometimes generated a linguistic distance between the language of schooling and the language of use.

To enable us to carry out the analysis, we constructed a data set containing information that included the literacy rates recorded in 1860 in the 524 municipalities that made up the region of Valencia, the institutional characteristics of the various municipalities at the end of the ancien regime (1787) – determined according to their jurisdiction (royal, secular lordship, ecclesiastical lordship or military order) – the municipalities inhabited by Moriscos before their expulsion in 1609, and the language area in which each entity was located.

On the basis of this information, we established two empirical analysis strategies. In our first approach we analysed the existence of a significant effect associated with each of the explanatory elements considered, following an econometric strategy that enabled them to be analysed jointly. As a result of this procedure, we were first able to confirm the existence of significant educational differences between royal and lordship municipalities. We then confirmed the existence of differences in the literacy rates for two types of lordship: those populated before 1609 by Moriscos and those repopulated after they were expelled. Finally, we confirmed the hypothesis according to which the presence of a linguistic distance between the language of schooling (Spanish) and the language of use (Catalan) is an explanatory element of the differences in literacy rates between municipalities.

Secondly, once we had established the importance of the various elements that link the institutions that the municipalities inherited from the ancien regime with the levels of education in 1860, we assessed the marginal effect deriving from each. Specifically, we distinguished between eight possible categories of municipality according to their institutional and linguistic characteristics and quantified the cost in educational terms implied by being located in each of them.

The results we obtained enabled us to test three hypotheses suggested in the literature that had not previously been considered jointly. The first was that the jurisdictional regime of the lordship, insofar as it involved a delegation of power to local elites which may in turn have given rise to a social configuration characterized by greater inequality or poverty than in royal territories, acted to slow down the rate of human capital accumulation, estimated here on the

basis of literacy rates. In other words, in line with the research carried out by Oto-Peralías (2019), our results indicate that the lordship acted as an obstacle to the accumulation of public goods.

In addition, by specifically studying what happened in lordships affected by the expulsion of the Moriscos, we were able to confirm that the harsh conditions faced by new settlers had a differential effect on education results in these territories in the shape of the demand for education. This hypothesis, which establishes that the link between the presence of extractive institutions and the accumulation of human capital comes about through a mechanism of demand, had already been put forward in papers such as those by Cinnirella and Hornung (2016) and Beltrán Tapia and Martinez-Galarraga (2018). The contribution made by the present analysis of the Valencian case is that it has precisely identified this effect, isolating it from those generically deriving from lordship jurisdiction.

Finally, we have confirmed the hypothesis that there is a negative effect between the presence of a linguistic distance between the language of use and the language of schooling and the population's level of education. These results endorse those found by Cinnirella and Schueler (2016) and Jain (2017) regarding the importance of the language mismatch effect on supply, demand and results in education. From a wider perspective, in turn, they could be interpreted as evidence in favour of other hypotheses that have been suggested, for example that the heterogeneity of the agents and the agency-associated problem that may be generated could lead to a deficient provision of public goods (Alesina et. al, 1999; Alesina and La Ferrara, 2005).

The joint consideration of these three elements, the design of an identification strategy that enables them to be isolated, and the quantification of the relative importance of each in helping us to understand the differences in literacy levels recorded in Valencian municipalities in 1860, i.e. before the central government took over the funding of primary education, together represent a relevant contribution to these streams of the literature.

In addition, the work also makes an important contribution to another academic debate of interest. This involves the conditions under which the repopulation of those Valencian territories occupied by the Moriscos before they were expelled were repopulated, which has been used by the literature as an example of an exogenous shock with persistent effects in the economic future. Chaney and Hornbeck (2016), for example, have shown that this episode altered the long-term behaviour of the affected territories by generating a new Malthusian equilibrium, characterized by the lower volume of population settled in the territories affected. And further back, Valencian

economic historians (Reglà, 1964; Ardit, 1987) have debated the persistence over time of the economic effects resulting from the expulsion of the Moriscos by analysing the characteristics of craft and agricultural production before and afterwards. As regards these debates, the results of the present study make it possible to establish the existence of an economic mechanism that might explain this persistence. The varying extractive nature of the lordships established on territories previously occupied by the Morisco population would have acted as an obstacle to the accumulation of human capital that was still visible in 1860. Its effects on relative factor endowments and its impact on the production specialization of the areas affected would continue over the course of various centuries.

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Appendix: the sample

Our sample is based on the number of municipalities located in the Valencia region today. According to the latest count, there were a total of 542 in the Comunitat Valenciana. However, there have been various changes and alterations, so we have had to make some adjustments in order to have consistent municipalities over time.

Endogenous variable: literacy (Population Census of 1860)

The Population Census of 1860 included a total of 570 municipalities in the Valencia region.[41] This means that we have to convert this historical figure into the current 542 municipalities.[42] To homogenize the data we assigned a current INE code to all the municipalities that appear in the census. First of all, following Goerlich et al. (2006: *Apéndice 2. Alteraciones de los municipios entre los censos de 1900 y 2001*) and using information from the document entitled "*Variaciones de los municipios de España desde 1842*" (Ministerio de Administraciones Públicas, 2008), the 570 municipalities of 1860 were converted into today's 542. These sources enabled us to assign a current INE code to the vast majority of the historical municipalities in the population census, following their historical pathways. However, in some cases complications arose. Most changes in municipalities between these dates are the result of mergers or separations, although the causes vary: towns absorbing neighbouring towns, towns that were merged together, towns that split from each other, etc.[43] In 1860, for example, today's municipality of l'Eliana was part of La Pobla de Vallbona. Hence no information on literacy rates for L'Eliana is available for 1860 (in fact the municipality of l'Eliana separated from la Pobla de Vallbona in 1955). To address this problem we created a «pseudo-municipality» known as Pobla de Vallbona - l'Eliana. Thus the municipalities included within a pseudo-municipality form a new single entity and have the same literacy rate, or to be more precise, a joint literacy rate. We worked in a similar way with the other cases. Overall, due to border changes, there is no information on literacy in the population census of 1860 for 18 of the 542 municipalities. To solve this problem, 17 artificial pseudo-

[41] These 570 municipalities were distributed among the three provinces that make up the region as follows: 142 (Alicante), 144 (Castellón) and 284 (Valencia). They were further divided into 46 *partidos judiciales* or judicial districts: 14 (Alicante), 10 (Castellón) and 22 (Valencia). Since there were 4 districts in the city of Valencia, 43 cities and towns were district capitals.

[42] Benicull de Xúquer became the 542nd municipality in the early 2000s, when it split from Polinyà de Xúquer.

[43] There were also numerous changes in the names of the municipalities, with many of them applying to express the name of the municipality in the language of the region.

municipalities (covering 35 municipalities) were created (see Table A1). If the current total number of municipalities in the region of Valencia is 542, once the pseudo-municipalities were created this figure was reduced by 18. Thus our sample consists of 524 municipalities, 17 of which are our artificial pseudo-municipalities.

Table A1. Pseudo-municipalities

INE code	Municipality	Province
3005	**Albatera**	Alicante
3904	San Isidro	Alicante
3014	**Alacant/Alicante**	Alicante
3050	Campello, El	Alicante
3015	**Almoradí**	Alicante
3903	Montesinos, Los	Alicante
3077	**Fondó de las Neus, El**	Alicante
3078	Hondón de los Frailes	Alicante
3093	**Novelda**	Alicante
3114	Romana, La	Alicante
3099	**Orihuela**	Alicante
3902	Pilar de la Horadada	Alicante
3013	Algueña	Alicante
3105	**Pinós, El/Pinoso**	Alicante
12101	San Rafael del Río	Castellón
12121	**Traiguera**	Castellón
12124	Vall d'Alba	Castellón
12128	**Vilafamés**	Castellón
12902	Sant Joan de Moró	Castellón
12135	**Villareal**	Castellón
12901	Alquerías del Niño Perdido	Castellón
12068	Herbés	Castellón
12080	**Morella**	Castellón
46116	Eliana, l'	Valencia
46202	**Pobla de Vallbona, la**	Valencia
46124	Fontanars dels Alforins	Valencia
46184	**Ontinyent**	Valencia
46190	**Paterna**	Valencia
46903	San Antonio de Benagéber	Valencia
46058	Benifairó de les Valls	Valencia
46122	**Faura**	Valencia
46007	**Albal**	Valencia
46065	Beniparrell	Valencia
46197	**Polinyà de Xúquer**	Valencia
46904	Benicull de Xúquer	Valencia

Note: The municipalities in bold are those that existed in 1860.

Census of Floridablanca (Census of 1787)

The Census of Floridablanca contains information on the ancien regime. With data for 1787, it includes a huge amount of information covering the total population by town (or population entity) and by gender, its structure by age groups and its distribution by professions. It also includes information on the administrative characteristics of the population entities, such as category (*ciudad, villa, lugar, aldea,*…), person in authority (*alcalde mayor, alcalde ordinario, gobernador*, …) and jurisdiction (royal or lordship).[44] On the former kingdom of Valencia, it provides information on a total of 550 population entities.[45] These include 9 that today belong to the Comunitat Valenciana but were then part of other administrations.[46]

As regards one of our main explanatory variables – jurisdiction – the census carried no information of any kind for 43 of today's municipalities. These mainly involve two types of cases: a) 15 of them are included in our pseudo-municipalities (see above), so we assume the same jurisdiction as their pseudo-municipality partner/s (see Table A2), and b) for the remaining 28 municipalities the strategy is twofold: in some cases we can identify the municipality they belonged to before becoming independent and then apply the same jurisdiction, otherwise we search for historical information from different sources to discover the type of jurisdiction in the past, assuming they existed in 1787 (see Table A3).[47] Once this is done, and taking into account the 17 artificial pseudo-municipalities, we have information on type of jurisdiction for all 524 municipalities in the sample.

[44] *Realengo, señorío secular, señorío religioso* and *órdenes militares* are the main types of jurisdiction.
[45] There were 129 in the today's province of Alicante, 141 in Castellón and 280 in Valencia. These towns or entities were in turn grouped into larger administrative entities called *partidos* or districts (13) and *intendencias* or regions (the kingdom of Valencia was an *intendencia)*. Moreover, some entities were «free» or exempted.
[46] Sax and Villena (Murcia); Camporrobles, Caudete de las Fuentes, Fuenterrobles, Requena, Utiel, Venta del Moro and Villagordo de Cabriel (Cuenca) joined Valencia in the mid-nineteenth century.
[47] Torrevieja, which was created from lands belonging to Orihuela, Guardamar, Rojals and Almoradí (all of them *realengos*), is considered to be royal jurisdiction, although before the nineteenth century there was no population, just surveillance towers (and salt mines). In the cases of Geldo and Serra d'En Galceran, for some reason the census does not supply any information about jurisdiction. Based on information obtained from alternative sources we assign to these two towns a lordship jurisdiction.

Table A2. Municipalities without jurisdiction in the Census of Population of 1787 which belong to a pseudo-municipality

INE code	Municipality	Same jurisdiction as pseudo-municipality partner
3013	Algueña	**3105 Pinós, El/Pinoso (3089 Monòver)**
3050	el Campello	3014 Alicante/Alacant
3078	Hondón de los Frailes	**3077 Fondó de les Neus (3019 Asp)**
3114	la Romana	3093 Novelda
3902	Pilar de la Horadada	3099 Orihuela
3903	Los Montesinos	3015 Almoradí
3904	San Isidro	3005 Albatera
12101	San Rafael del Río	12121 Traiguera
12124	Vall d'Alba	12128 Vilafamés
12901	Alquerías del Niño Perdido	12135 Vila-Real
12902	Sant Joan de Moró	12128 Vilafamés
46116	l'Eliana	46202 la Pobla de Vallbona
46124	Fontanars dels Alforins	46184 Ontinyent
46903	San Antonio de Benagéber	46190 Paterna
46904	Benicull de Xúquer	46197 Polinyà de Xúquer

Table A3. Municipalities without jurisdiction in the Census of Population of 1787 which do not belong to a pseudo-municipality

INE code	Municipality	INE code	Municipality
3004	Aigües	12049	Costur
3011	Alfàs del Pi	12069	Higueras
3012	Algorfa	12102	Santa Magdalena de Pulpis
3016	Almudaina	12114	Torás
3051	Campo de Mirra/Camp de Mirra, El	46046	Barx
3052	Cañada	46048	Bellreguard
3062	Daya Vieja	46082	Canet d'En Berenguer
3077	**Fondó de las Neus, El/Hondón de las Nieves**	46087	Casas Altas
3105	**Pinós, El/Pinoso**	46088	Casas Bajas
3120	San Miguel de Salinas	46089	Casinos
3121	Santa Pola	46108	Chera
3122	San Vicente del Raspeig/Sant Vicent del Raspeig	46141	Higueruelas
3133	Torrevieja	46149	Losa del Obispo
3138	Verger, El	46224	Segart

Note: Both El Pinós and El Fondó de les Neus are the main population entities in their respective pseudo-municipalities. However, these two municipalities did not exist back in 1787, since they were created by breaking away from Monòver (1826) and Asp (1839) respectively.

Census of 1887

The census of 1887 contains information not only about the population of the municipalities but also its distribution between the core entity (city, town) and the minor entities (village, hamlet, homestead, mills and isolated buildings). In this case there is information on all 524 municipalities in our sample.

Using data from the *Nomenclator* of Spain for 1887, we created a variable that measures the percentage of population living in the core entity. In the computation of this variable it is important to bear two things in mind.

(i) Pseudo-municipalities. In order to compute this dispersion measure, only the core entity of the main municipality is taken into account (see Table A1).

(ii) Municipalities that were independent in 1887 but today belong to other municipalities (see Table A4). In order to compute the dispersion measure, the core entities of both municipalities in 1887 are taken into account.

Table A4. Completing the information on jurisdiction

Independent municipalities in 1887	INE code	Current municipality
Adsubia Forna	**3001**	Adsubia
Daya Nueva o Vieja Puebla de Rocamora	**3061**	Daya Nueva
Sela y Mirarrosa Miraflor	**3901**	Poblets, Els
Alcudia de Veo Veo	**12006**	Alcudia de Veo
Montanejos Campos de Arenoso	**12079**	Montanejos
Pobla de Benifassà, La Ballestar Bojar Corachar Fredes	**12093**	Pobla de Benifassà, La

Rosell Bel	**12096**	Rossell
Albaida Aljorf	**46006**	Albaida
Albuixech Mahuella	**46014**	Albuixech
Gandia Beniopa Benipeixcar	**46131**	Gandia
Valencia Benifaraig Borbotó Campanar Masarrochos Villanueva del Grau	**46250**	Valencia

Other relevant information

As well as the information on literacy levels, type of jurisdiction, whether or not the municipality was Morisco and the official language, our data set also includes information on other demographic and geographical variables for the 524 municipalities of Valencia, taken mainly from the population censuses. Table A6 summarizes the sample of the data set.

Table A6. Summary

	Number of municipalities
Dependent variables	
Literacy (1860)	524
Variables of interest	
Jurisdiction (1787)	524
Morisco or non-Morisco	524
Official language	524
Control variables	
Population (1860)	524
Settlement patterns (1887)	524
Geographical information	524

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