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The uneven transition towards universal literacy in Spain, 1860–1930

Francisco J. Beltrán Tapia ^a, Alfonso Díez-Minguela  ^b, Julio Martínez-Galarraga  ^b
and Daniel A. Tirado-Fabregat  ^b

^aDepartment of Modern History and Society, Norwegian University of Science and Technology, Trondheim, Norway; ^bDepartament d'Anàlisi Econòmica, Universitat de València, València, Spain

ABSTRACT

This study provides new evidence on the advance of literacy in Spain during the period 1860–1930. A novel dataset, built with historical information from the Spanish population censuses (over 8000 municipalities), enables this process to be described in detail from the end of the *Ancien Régime* to the Second Republic. The study thus presents stylised facts at a very low level of geographic aggregation, thereby permitting a closer examination of the main patterns. Overall, spatial differences in literacy were sizeable during the whole nineteenth century. Furthermore, these disparities were only significantly reduced between 1900 and 1930 when the growing demand for these basic skills was met by stronger government intervention.

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Introduction

Human capital is key for growth and development. It is broadly accepted that education, training or health investments can have a transformative power in the economy and society.¹ However, understanding how improvements in human capital have shaped our everyday lives is not straightforward.² Likewise, measurement is a concern, especially in historical contexts where data are scarce. Regarding education, population censuses provide consistent and somewhat reliable self-reported literacy for many European countries as far back as the mid-nineteenth century. When administrative information is not available, historians have often relied on other measures, such as the ability to sign official documents

CONTACT Alfonso Díez-Minguela  alfonso.diez@uv.es  Departament d'Anàlisi Econòmica, Universitat de València, Av. dels Tarongers s/n, València 46022, Spain

¹In a seminal contribution, Theodore W. Schultz, 'Capital Formation by Education', *Journal of Political Economy* 68 (1960): 571, for instance, proposed to 'treat education as an investment in man and to treat its consequences as a form of capital'. See also Claudia Goldin, 'The Human-Capital Century and American Leadership: Virtues of the Past', *Journal of Economic History* 61 (2001): 263–92.

²See Claudia Goldin, 'Human Capital', in *Handbook of Cliometrics*, ed. Claude Diebolt and Michael Haupert, ch. 3 (Berlin: Springer, 2015), 55–86.

such as marriage registers.³ Alternatively, other indicators (book production, libraries, etc.) have been used too.⁴

That said, Spain has historically lagged behind its Western European counterparts as regard literacy. By 1870, while in Germany and the United Kingdom around 80% of the adult population could read and write, the literacy rate in Spain was around 30%.⁵ This figure, however, hides substantial territorial disparities. The literature has documented a duality, where northern provinces exhibited higher rates of literacy than southern ones.⁶ In 1860, only 14% of the population aged 10 years old or above was able to read and write in Almeria, while in Alava more than half (53%) could.⁷ Such differences were not only noticeable then, but they have persisted over time. In fact, there appears to be a strong correlation between literacy in the mid-nineteenth century and educational attainment today.⁸

Despite its importance, this area of research has been slightly understudied, especially from a quantitative perspective. The historiography has focused on regions and provinces, thereby ignoring what the provincial aggregates comprise.⁹ Although these studies have been, and still are, fundamental for understanding Spanish history, a more detailed approach will allow scholars to gain further knowledge. In this regard, this study introduces, for the first time, literacy rates at the municipal level for Spain from 1860 to 1930. Our study thus goes from the early years of the liberal State to the Second Republic. The period of study was an important historical episode, not only in Spain but in Europe as a whole. Until the eighteenth century, much of the advance in literacy that came about in Europe took place in a context where formal education was decentralised, or depended upon local communities. Eventually, and in a changing socioeconomic context, there

³Carlo M. Cipolla, *Literacy and Development in the West* (Harmondsworth: Penguin, 1969); Lawrence Stone, 'Literacy and Education in England 1640–1900', *Past & Present* 42 (1969): 69–139; Robert C. Allen, 'Progress and Poverty in Early Modern Europe', *Economic History Review* 56 (2003): 403–43; Jaime Reis, 'Economic Growth, Human Capital Formation and Consumption in Western Europe before 1800', in *Living Standards in the Past: New Perspectives on Well-being in Asia and Europe*, ed. Robert C. Allen, Tommy Bengtsson and Martin Dribe (Oxford: Oxford University Press, 2005), 195–225.

⁴Joerg Baten and Jan Luiten van Zanden, 'Book Production and the Onset of Modern Economic Growth', *Journal of Economic Growth* 13, no. 3 (2008): 217–35. Besides, there is a large number of studies using age-heaping as a proxy for numeracy. See, for instance, Dorothee Crayen and Joerg Baten, 'Global Trends in Numeracy 1820–1949 and Its Implications for Long-term Growth', *Explorations in Economic History* 47 (2010): 82–99; Dorothee Crayen and Joerg Baten, 'New Evidence and New Methods to Measure Human Capital Inequality before and during the Industrial Revolution: France and the US in the Seventeenth to Nineteenth Centuries', *Economic History Review* 63 (2010): 452–78.

⁵Nicholas Crafts, 'The Human Development Index and Changes in Standard of Living: Some Historical Comparisons', *European Review of Economic History* 1 (1997): 299–322; Şevket Pamuk and Jan Luiten van Zanden, 'Standards of Living', in *The Cambridge Economic History of Modern Europe*, ed. Stephen Broadberry and Kevin H. O'Rourke (Cambridge: Cambridge University Press, 2010), 217–34.

⁶Clara E. Núñez, *La fuente de la riqueza. Educación y desarrollo económico en la España contemporánea* (Madrid: Alianza, 1992).

⁷It has been argued that the existence of marked differences in the regional availability of human capital in the past could be one of the main reasons for varying economic success: Núñez, *La fuente de la riqueza*. See also Clara E. Núñez and Gabriel Tortella Núñez, *La maldición divina: ignorancia y atraso económico en perspectiva histórica* (Madrid: Alianza). For a long-term evolution of regional economic development, see Alfonso Díez-Minguela, Julio Martínez-Galarraga and Daniel A. Tirado, *Regional Inequality in Spain, 1860–2015* (Cham: Palgrave-Macmillan, 2018).

⁸This argument can be found, for example, in Jordi Palafox, 'Capital humano e historia económica', *Papeles de Economía Española* 73 (1997): 262–7.

⁹In Núñez, *La fuente de la riqueza*. At the local or region-specific level there are numerous studies: Alejandro Mayordomo, *La escuela pública valenciana en el siglo XIX* (Valencia: Conselleria de Cultura, Educació i Ciència, 1988); Aída Terrón Bañuelos and Ángel Mato Díaz, *Los patronos de la escuela: historia de la escuela en las Asturias contemporáneas* (Oviedo: Asociación de Pedagogía del Principado de Asturias, 1996); Narciso de Gabriel, *Ler e escribir en Galicia* (A Coruña: Universidade da Coruña, 2006); Francisco J. Jaraíz Cabanillas, Ramón Pérez Parejo, José Soto Vázquez and José Antonio Gutiérrez Gallego, *Atlas del analfabetismo en Extremadura durante la segunda mitad del siglo XIX* (Madrid: Cultiva Libros, 2017); and others.

arose a stronger desire to supply instruction (or education) for the masses. Prussia led the way. Other countries followed, and during the nineteenth century literacy spread rapidly. Under these circumstances, whether there should be a more, or less, centralised national education system was a subject of debate.¹⁰

As far as Spain is concerned, socioeconomic and political change prevailed during the period from 1860 to 1930. In particular, the early years witnessed the transition, not always smooth, to a liberal State.¹¹ The liberal State faced several challenges, and one of them was education. The Public Instruction Act of 1857, known as the Moyano Act, established a hierarchical national education system with three levels (higher, secondary, primary) of education. Yet, the liberal State only took full control of higher education, leaving the funding of secondary, and above all, primary education in the hands of the local community (municipal councils, religious orders, families, etc.). Eventually, and after the creation of the Ministry of Public Instruction and Fine Arts in 1900, the State played a more active role in primary education. By 1902, teachers' wages had been included in the national budget.

Therefore, an in-depth study of the spread of literacy between 1860 and 1930 will enable us to explore (i) the legacy of the *Ancien Régime*, (ii) the evolution of literacy between the passing of the Moyano Act in 1857 and 1900, and (iii) whether any progress can be observed from 1900 to 1930.¹² In this respect, of particular interest to our work is the analysis undertaken for the case of Italy, a country characterised by a relatively similar situation in terms of both its institutional framework and the timing of the reforms. The passing of the Casati Law in 1859 and the subsequent Daneo-Credaro reform in 1911, which led to a more centralised system, had a positive effect on education.¹³ These authors argue that, when the central government was not in charge of primary schooling, some regions did not have enough financial resources to fund it. In general terms, these findings are in line with the evidence provided below.

The paper is structured as follows. Section 2 presents a brief description of the institutional framework and the reforms that guided the process of providing primary education in Spain. Section 3 gives details on how we constructed a literacy dataset at municipal level. While Section 4 provides some initial results, Section 5 offers detailed

¹⁰David Mitch, 'The Role of Education and Skill in the British Industrial Revolution', in *The British Industrial Revolution: An Economic Perspective*, ed. Joel Mokyr, 2nd ed. (Boulder: Westview, 1999), 241–79. David Mitch, 'The Impact of Subsidies to Elementary Schooling on Enrolment Rates in Nineteenth-Century England', *Economic History Review* 39 (1986): 371–91; Sun Go and Peter H. Lindert, 'The Uneven Rise of American Public Schools to 1850', *Journal of Economic History* 70 (2010): 1–26; Francesco Cinnirella and Erik Hornung, 'Landownership Concentration and the Expansion of Education', *Journal of Development Economics* 121 (2016): 135–52; Johannes Westberg, Lukas Boser and Ingrid Brühwiler, eds., *School Acts and the Rise of Mass Schooling: Education Policy in the Long Nineteenth Century* (Cham: Palgrave-Macmillan, 2019).

¹¹Salvador Calatayud, Jesús Millán and María C. Romeo, 'Introducción: la formación del Estado desde abajo. Poder, sociedad y conflictos en la España del siglo XIX', in *El Estado desde la sociedad. Espacios de poder en la España del siglo XIX*, ed. Salvador Calatayud, Jesús Millán and María C. Romeo (Alacant: Publicacions de la Universitat de Alacant, 2016), 9–40.

¹²In Spain, the *Ancien Régime* refers to the period prior to the process of State-building in the nineteenth century, characterised, among other things, by the presence of absolute monarchy. The so-called liberal State resulted from a series of profound reforms. For example, the establishment of a parliamentary monarchy, the disentailment of the Church's landed property or the development of a national education system, to mention just a few.

¹³Gabriele Cappelli, 'Escaping from a Human Capital Trap? Italy's Regions and the Move to Centralised Primary Schooling, 1861–1936', *European Review of Economic History* 20 (2016): 46–65; Gabriele Cappelli and Michelangelo Vasta, 'Can School Centralization Foster Human Capital Accumulation? Quasi-Experimental Evidence from Italy's Liberal Age', *Economic History Review* 73 (2020): 159–84.

evidence on the evolution of territorial inequality in terms of literacy at the municipal level. Finally, Section 6 concludes.

Schooling and literacy in Spain, 1797–1930

During the eighteenth century, there were various attempts to count the population. In one of these, the Godoy-Larruga Census of 1797, the census takers also collected information, for the first time, on the number of elementary schools and teachers, and school attendance by gender.¹⁴ The figures show that the first level of the educational infrastructure had 11,007 primary schools (8704 for boys and 2303 for girls), 8962 male teachers and 2575 female teachers.¹⁵ Since this early approximation was geographically disaggregated, it also enables us to appreciate the territorial differences. For example, Figure 1 shows the number of teachers per 10,000 inhabitants.¹⁶ These disparities anticipate an uneven transition towards universal literacy in the following centuries.

In the first half of the nineteenth century, efforts to quantify the educational infrastructure continued.¹⁷ In 1833, for example, the *Madrid Gazette* (No. 24, issued 23 February) published official school statistics covering all levels of the education infrastructure. From then onwards – and with the passing of the Royal Decree of 30 November 1833, which established the administrative division of the territory into 49 provinces – a series of school surveys and official statistics (1846, 1848, 1850) implemented by inspectors and provincial committees was undertaken with varying levels of success.¹⁸

Nevertheless, it was the publication of *Statistics on Elementary Education (Estadística de la Primera Enseñanza de la Península e Islas Adyacentes correspondiente al Quinquenio de 1850 a 1855)* in 1858 that paved the way for modern official school statistics.¹⁹ These official figures focused on education infrastructure (schools, teachers, methods, etc.) and provided aggregate information for each province. However, this detailed information poses two problems. First, it does not tell us the proportion of the population that could read and write, and second, the fact that the information is aggregated at provincial level makes it difficult to carry out an in-depth analysis of territorial inequalities.

The need to have more information on the socioeconomic characteristics of the population led in 1856 to the creation of the Royal Statistical Commission (*Comisión de Estadística General del Reino*), which a year later would carry out another population count, published in 1858. However, it was not until the census of 1860 that information on literacy appeared for the first time. This was presented for each municipality and divided the population into three groups: ‘can read but not write’, ‘can read and write’

¹⁴Following the Royal Order of May 6, 1790, the Godoy-Larruga Census took a special interest in the state of education. According to Jean-Louis Guereña and Antonio Viñao, *Estadística escolar, proceso de escolarización y sistema educativo nacional en España, 1750–1850* (Barcelona: EUB, 1996), 45, ‘the data for 1797 provide an approximate measurement of the network of schools and students in Spain at the end of the *Ancien Régime*'. For a qualitative approximation see Francisco Javier Laspalas Pérez, ‘La escolarización elemental en España según el Censo de Godoy (1797)’, *Historia de la Educación* 10 (1991): 203–25.

¹⁵The Godoy-Larruga Census of 1797 provided information on the number of boys (304,613) and girls (88,513) in these schools. The total population was estimated at around 10.5 million.

¹⁶The territorial configuration of the Kingdom of Spain is considered throughout the text as corresponding to the sum of the territories situated on the Iberian Peninsula, the Balearic Islands and the Canary Islands.

¹⁷Guereña and Viñao, *Estadística escolar*. A number of different questionnaires (1800, 1801) and surveys (1803, 1820, 1821) were administered after the Godoy-Larruga Census of 1797.

¹⁸Map A1 in Appendix A illustrates the 49 provinces existing during the period of study.

¹⁹Guereña and Viñao, *Estadística escolar*.

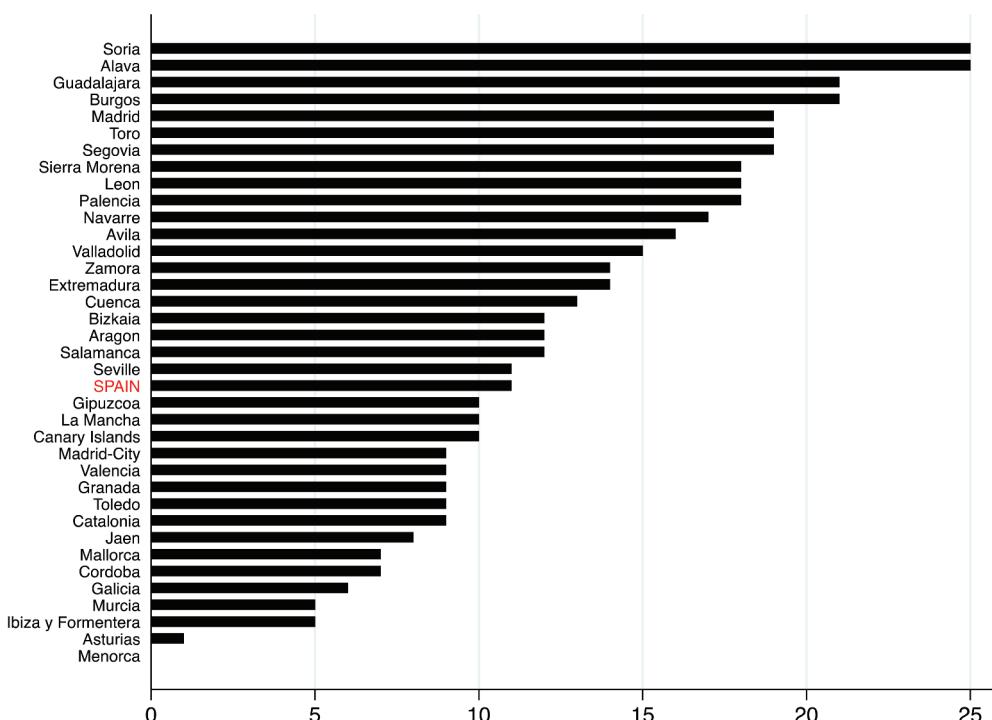


Figure 1. Schoolteachers per 10,000 inhabitants in Spain, 1797.

Note: The Godoy-Larruga Census of 1797 presents information on 19 provinces or lordships (Alava, Avila, Burgos, Cuenca, Extremadura, Guadalajara, Gipuzkoa, La Mancha, Leon, Madrid, Palencia, Salamanca, Segovia, Soria, Toledo, Toro, Valladolid, Bizkaia and Zamora), nine kingdoms (Aragon, Cordoba, Galicia, Granada, Jaen, Murcia, Navarre, Seville and Valencia), two principalities (Asturias and Catalonia), the City of Madrid, the new settlements of Andalusia (Sierra Morena) and the islands (the Canary Islands, Ibiza and Formentera, and Mallorca and Menorca). Excluded are the royal sites (Aranjuez, El Pardo, San Lorenzo, San Ildefonso, Balsain and Riofrio), the fortress city of Ceuta and the garrison towns of Melilla, Alhucemas and Peñon.

Source: Godoy-Larruga Census of 1797.

and ‘cannot read’. Eventually, this was systematised in later censuses (1877, 1887, 1900, 1910, 1920 and 1930), thus making it possible to study this issue at a greater level of disaggregation than in surveys and official school statistics.

Table 1. Literacy rates (%) in Spain, 1860–1970

Census	Literacy rate (%)		
	Men	Women	Total
1860	41.7	11.9	26.5
1877	46.7	19.3	32.5
1887	52.1	24.9	38.1
1900	57.1	33.3	44.8
1910	62.9	42.3	52.2
1920	70.1	52.9	61.1
1930	83.0	66.3	74.4
1970	95.1	88.0	91.4

Note: Literacy rate calculated as the proportion of the population over age 10 that could read and write.

Source: Population censuses.

Based on census information, Table 1 shows the evolution of literacy from 1860 to 1970. Although universal literacy would not be achieved until the last quarter of the twentieth century, the period between 1860 and 1930 is fundamental for understanding the challenges faced by the State. A gradual improvement can be observed over the period: while in 1860 only one in four inhabitants over age 10 could read and write, this figure had risen to three in every four by 1930. We should nonetheless bear in mind that Spain was clearly lagging behind the most advanced European countries: the literacy levels achieved in Spain in 1930 had already been exceeded by 1870 in countries such as Great Britain, Holland, Germany and Sweden. Thus, the advance of the literacy process over the period served, at best, to narrow the gap that existed between Spain and other more developed European countries.

Regarding the institutional framework that modelled elementary education in Spain, it is worth noting that Jovellanos, the well-known Enlightenment reformist, wrote in his 'Memorandum on Public Education' of 1802 that 'the sources of social prosperity are many; but all spring from the same origin, and this origin is public instruction'. These words indicate that the country's intellectuals and elites were perfectly aware of the importance of education for the economic development of a society. However, the reality was that Spain, like many other areas, was lagging behind other countries at the time. The reluctance (or straight opposition) to supply education to the masses can be summarised by the opinion of Juan Bravo Murillo, a leading Parliamentary member and crucial figure in different Spanish governments during the 1840s and 1850s, who stated that 'Spain does not need educated men, but oxen that work'. School funding and budget allocations for teachers under the *Ancien Régime* were the responsibility of local councils, religious foundations and the parents of the children who attended the schools.²⁰ Under these circumstances, the level of education in Spain presented a bleak picture.

Neither did the conditions under which primary education was provided make it possible to imagine a particularly hopeful future in which this reality might be corrected. Except for the children of the poorest families, attending school was not actually free.²¹ Moreover, child labour was widespread, which meant that the opportunity cost of sending children to school was rather high, especially for families with fewer resources who relied on child labour for their subsistence. Also, many teachers had no qualifications and most schools lacked suitable facilities and materials (insufficient equipment, overcrowded classes, insanitary conditions, etc.). By the mid-nineteenth century, surveys and official school statistics were already warning about the shortage of schools, the precarious situation of teachers, the deficiencies of teaching methods and the differences that existed between boys' and girls' education.²²

²⁰ Student fees were paid in cash or in kind. The contribution of local councils to teachers' wages was usually in cash but it could sometimes be in kind, usually board and keep.

²¹ The Moyano Act (Art. 9) established that primary instruction would be free for children whose parents or tutors could not afford it. Nevertheless, a certificate issue by the local authority was required.

²² Surveys and official school statistics were not the only sources of information. The property register (*Cadastre*) compiled between 1749 and 1760 in the Crown of Castile provided information on schools and teachers, which, according to Guereña and Viñao, *Estadística escolar*, 27, made it possible to 'reconstruct the school network of a particular area'. Other authors have taken literacy to mean the ability of the head of the family to sign the declaration for the property register: Begoña Álvarez and Fernando Ramos Palencia, 'Human Capital and Earnings in Eighteenth-Century Castile', *Explorations in Economic History* 67 (2018): 105–33. See also Sara T. Nalle 'Literacy and Culture in Early Modern Castile', *Past & Present* 125 (1989): 65–96; Jacques Soubeyroux, 'La alfabetización en la España del siglo XVIII', *Historia de la Educación* 14–15 (1996): 199–233. Another important source is the *Geographical, Statistical and Historical Dictionary of Spain and its Overseas Possessions* by Pascual Madoz, which includes information on the education infrastructure in the mid-nineteenth century.

The deficient schooling system was the outcome of decades of institutional paralysis. 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 Ordering of Public Education*), but the plans were halted due to political and social instability.²³ During the first half of the nineteenth century, primary schools therefore 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, in an international context where various countries were taking their first steps towards mass schooling, that the Public Instruction Act (PIA), commonly known as the Moyano Act, was passed. This law regulated the education system from 1857 to 1970, when it was replaced by the General Education Act (GEA).²⁴ Indeed, the Moyano Act was one of the great reforms introduced in Spain in the nineteenth century.

Primary education was split into elementary and higher education (Art. 1), with a curriculum being established for both.²⁵ At the same time, primary education would become ‘compulsory for all Spaniards’ (Art. 7) between the ages of six and nine, and free for those whose parents or guardians could not afford it (Art. 9).²⁶ Thus the Moyano Act aimed to give structure and organisation to every level of education. 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 organisations.²⁷ Therefore teachers in primary education were not civil servants. Indeed, Art. 185 established that positions involving financial allocations that did not exceed 2,000–3,000 *reales* (i.e. teachers) required no civil service entrance exam.

Mass schooling, and then universal literacy, faced a variety of problems. A traditional setback, and one of the motivations of the Moyano Act, was the poor infrastructure. In this regard, the passing of the Moyano Act laid down a minimum requirement of number of schools for each *pueblo*, or population entity, 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).²⁸ Communities of at least ‘2000 souls’ should have two complete schools each for boys and

²³ 1821 saw the establishment of General Regulations for Public Instruction, following the Quintana Report, which were not pursued further. From then and until the Public Instruction Act (PIA) of 1857 there was a succession of different plans and endeavours such as the Duque de Rivas Plan of 1836 and, notably, the creation of the Ministerial Board of Public Instruction in 1846.

²⁴ Although the PIA continued until 1970, successive changes were introduced during the 113 years that it remained in force. Compulsory education, for example, in principle from age six to age nine, was extended to age 12 in 1909 and age 14 in 1964.

²⁵ According to Art. 2 of the PIA, primary education comprised six 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.

²⁶ 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 elementary education, it was necessary to provide a ‘certificate issued by the relevant parish priest and endorsed by the town mayor’ (Art. 9).

²⁷ 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’.

²⁸ An incomplete school was one in which not all the subjects on the curriculum were taught.

girls, while those with '4000 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). Should this not be possible, then the establishment of an incomplete or seasonal school was allowed.²⁹

A further effort to foster education was the creation of the Ministry of Public Instruction and Fine Arts in 1900.³⁰ From the mid-nineteenth century and during the early twentieth century, the Spanish economy and society underwent a number of important changes. With rapid population growth came structural change.³¹ It was in this context of far-reaching socio-economic change that the Ministry of Public Instruction and Fine Arts was created, followed two years later by the central government taking over the funding of primary education. Furthermore, several efforts were made to improve the infrastructure. In 1903 a school census was carried out to assess the situation. Based on that report, several schools were built in the following years. Furthermore, compulsory education was extended to age 12 in 1909 and the Department of Primary Education was created in 1911. Finally, the Royal Order of 8 March 1910 guaranteed the right of women to enrol freely in any official education centre.

Data and sources

This article relies on the Spanish Population Censuses of 1860, 1900 and 1930. The first half of the nineteenth century was marked by great political instability. The transition from the *Ancien Régime* to the liberal State coincided with frequent internal as well as external conflicts. In this context, population counts were hampered by serious obstacles, thus interrupting the efforts that had been made by the State during the eighteenth century.³² The situation began to change towards the middle of the nineteenth century when a certain level of political and economic stability was achieved that enabled the State to resume the collection of statistics. This, in turn, led to the creation of the Royal Statistical Commission (*Comisión de Estadística General del Reino*), established by Royal Decree dated 3 November 1856. This Commission compiled the Population Census of 1860, the first modern population census.³³ After various changes in the name of the

²⁹It should be remembered that some municipalities comprise a single town or village, while others are made up of various population centres. This is one of the peculiarities of the Spanish case. Thus, municipalities along the Cantabrian coastline (Galicia, Asturias, Cantabria) are composed of various '*pueblos*', while in other regions there tends to be greater equivalence between towns and municipalities.

³⁰With the Finance Act of March 31, 1900 came the reorganisation of the Ministry of Public Works, and after the Royal Decree of April 18, 1900 came the creation of the Ministry of Agriculture, Industry, Trade and Public Works and the Ministry of Public Instruction and Fine Arts (1900–1936). The Ministry of Agriculture, Industry, Trade and Public Works would revert to being called the Ministry of Public Works from 1905 onwards.

³¹Vicente Pérez Morena, David-Sven Reher and Alberto Sanz Gimeno, *La conquista de la salud. Mortalidad y modernización en la España contemporánea* (Madrid: Marcial Pons, 2015); Leandro Prados de la Escosura, *Spanish Economic Growth, 1850–2015* (Cham: Palgrave-Macmillan, 2017).

³²The first population censuses that were modern, in so far as they counted people instead of the number of families, date back to the eighteenth century, which saw the successive publication of the Aranda Census (1768), the Floridablanca Census (1787) and the Godoy-Larruga Census (1797). For a brief description of the population counts for the first half of the nineteenth century see, for example, Antonia M. Durán Herrera, 'La actividad censal en España durante la primera mitad del siglo XIX en el contexto de las reformas liberales', *Espacio, Tiempo y Forma, Serie V, Historia Contemporánea* 19 (2007): 339–59, and the introduction to the population census of 1860.

³³A population census for 1857 was also published. However, the result of this first attempt was unsatisfactory and it was recommended that those responsible for carrying it out should undertake a new count, which came out in 1860.

organisation and bodies that would be responsible for carrying out the work, the Population Census of 1900 – the second of those covered by this article – was published in 1902 by what was then known as the Institute of Geography and Statistics (*Dirección General del Instituto Geográfico y Estadístico*). In 1932, shortly after the Second Republic was proclaimed, the Institute of Geography, Property and Statistics (*Instituto Geográfico, Catastral y de Estadística*) published the third population census covered by this article, corresponding to 1930.

The basic information presented in these three population censuses (1860, 1900 and 1930) enables us to obtain literacy rates at the municipality level. The different censuses provide figures for the population's level of elementary education, municipality by municipality, categorising the 'total population' according to those who 'can read', 'can read and write' and 'cannot read'.³⁴ This information on levels of education was reported directly by the families themselves on the basis of registration cards (*cédulas de inscripción*). Using this information, we have calculated the literacy rate as the share of literates (those who could read and write) over the total population. This measure differs from that normally used in the literature, because our literacy rate includes children. Sadly, the population censuses do not publish information by age group at the municipal level. For this reason, we cannot exclude those aged 10 years old or less.

Likewise, using three population censuses introduces a territorial-consistency issue. During the period of study, the number of municipalities changed. In Spain, the municipalities are a 'historical product with medieval roots and in constant evolution'.³⁵ The Constitution of 1812 laid down the foundations for the liberal reforms that followed suit, decreeing that in 'the towns there will be *Ayuntamientos* [councils]' (Art. 309), and stipulated that 'an *Ayuntamiento* will be established in those towns that do not have one but need one, with one having to exist in towns which alone or with their district area contain at least one thousand souls' (Art. 310). Then, the nearly 20,000 population entities reported in the Census of 1787 eventually became about 11,300 *ayuntamientos* in the 1840s when the 'Geographical, statistical and historical dictionary of Spain and its overseas possessions' by Pascual Madoz was published. This was when, as a result of the Council Organisation and Functions Act (*Ley de Organización y Atribuciones de los Ayuntamientos*) of 1845, those councils representing fewer than 30 residents were abolished (Art. 70), leaving a total of 9342 and 9364 municipalities in the population censuses of 1857 and 1860 respectively. As for the number of municipalities today, we use the population census of 2001 comprising 8106 municipalities, with their respective codes from the *Instituto Nacional de Estadística* (INE).³⁶

³⁴The population censuses for 1900 and 1930 contain an additional category covering those people whose level of education could not be determined, who are included in the category 'Not known'. However, this category represents a very small proportion of the total: 0.11% in 1900 (20,217 people) and 1.15% in 1930 (269,901 people). One characteristic of the 1860 population census is that it only presents the 'de facto' total population (*población de hecho*), i.e. omitting the 'de jure' population (*población de derecho*), the former being the population considered in this article. In addition, the censuses break down all this information into men and women.

³⁵Jesús Burgueño and Montse Guerrero Lladós, 'El mapa municipal de España. Una caracterización geográfica', *Boletín de la Asociación de Geógrafos Españoles* 64 (2014): 14.

³⁶2001 has been chosen by various studies that, on the basis of the current distribution, have analysed the evolution of the Spanish population at municipal level for the twentieth century as a whole. See, for instance, Francisco J. Goerlich Gisbert, Matilde Mas Ivars, Joaquín Azagra Ros and Pilar Chorén Rodríguez, *La localización de la población española sobre el territorio. Un estudio basado en series homogéneas 1900–2001* (Bilbao: Fundación BBVA, 2006); Xavier Franch Auladell, Jordi Martí-Henneberg and Josep Puig-Farré, 'Un análisis especial de las pautas de crecimiento y concentración de la población a partir de series homogéneas: España (1877–2001)', *Investigaciones Regionales* 25 (2013): 43–65. Ceuta and Melilla are excluded from the analysis, which means that the addition of these two autonomous cities would bring the total up to the 2001 figure of 8108 municipalities. Since then there has been another census (2011), which, in this case, showed a total of 8124 municipalities, i.e. 16 more than in 2001.

The fact that there are differences in the numbers of municipalities means we have to convert the historical figure into today's figure. To homogenise the data, we need to assign a current INE code to all the municipalities that appear in the three censuses. To put it another way, we have to match the more than 9000 municipalities that appear in the censuses to the municipalities they would belong to today and assign them the corresponding current INE code. This homogenisation with the municipalities of today is also necessary because – as far as we know – there are no georeferenced maps showing the historical borders of the municipalities of 1860, 1900 and 1930. In order to be able to illustrate the information for literacy rates at municipal level, we have therefore carried out a two-step procedure to homogenise the municipalities.

First of all, following previous works, the 9364 municipalities of 1860 have been transformed into the 8106 of 2001.³⁷ The same procedure was followed for 1900 and 1930. These sources enabled us to assign a current INE code to the vast majority of the historical municipalities in the population censuses, following their historical pathways. However, in some cases complications arose. We should bear in mind that most changes in municipalities between these dates are the result of mergers or separations. The causes vary greatly: towns absorbing neighbouring municipalities, municipalities that were merged, municipalities that were split from each other, etc.³⁸

For these reasons, in the second step, decisions had to be made regarding a whole series of municipal changes that took place between 1860 and 1930. In order to deal with the fusions and separations that do not have a perfect correspondence to the 2001 municipal distribution, we created 'pseudo-municipalities' that comprise various current municipalities. In this case the problems that the homogenisation process encounters are varied – as are the solutions – and are best illustrated through the use of specific examples.

In 1930, for example, the municipality of Torremolinos was abolished following its incorporation into Málaga (merger). This meant that both the 1860 and 1900 censuses provide data for both Torremolinos and Málaga, but the 1930 census does not, since Torremolinos was then part of Málaga.³⁹ To solve this problem we created a 'pseudo-municipality' known as Málaga-Torremolinos. The same case in reverse would be Junciana, which separated from Gilbuena in 1930. We therefore only know the population (and education level) of Junciana and its characteristics for that year, and not for 1900 or 1860 when the data were included under Gilbuena. To overcome this problem, we created the 'pseudo-municipality' of Gilbuena-Junciana.

On other occasions it may come about that one of today's municipalities did not exist in the past but was created more recently out of other municipalities. This would be the case of Mendaro, created in 1983 by incorporating part of the former territory of both Elgoibar and Mutriku. Given that none of the population censuses from 1860 to 1930 provided data for the municipality of Mendaro (which did not yet exist), we created a 'pseudo-municipality' that covered all three of the municipalities involved (Elgoibar-Mendaro-Mutriku). Along

³⁷ Goerlich et al., *La localización de la población española sobre el territorio* (Apéndice 2. Alteraciones de los municipios entre los censos de 1900 y 2001), and information from the Ministerio de Administraciones Públicas ('Variaciones de los municipios de España desde 1842', 2008).

³⁸ There were also numerous changes in place names, many of them caused by the existence of different languages in Spain and their evolution over time.

³⁹ The municipality of Torremolinos was re-established in 1988, becoming separate from Málaga.

similar lines, in some cases the problem lies in the disappearance of a municipality, when one part of what used to be a municipality is incorporated into another and another part into a second. The most extreme case can be found in the province of Huesca, where various municipalities – Aínsa-Sobrarbe, Biescas, Boltaña, Caldearenas, Jaca, Las Peñas de Riglos and Sabiñánigo – incorporated areas of territory (former municipalities) abolished between 1860 and 1930. To deal with this we created a ‘pseudo-municipality’ that joined them all together. Thus, we obtain a dataset of pseudo-municipalities that is consistent over time.⁴⁰

After these adjustments were carried out, a total of 255 ‘pseudo-municipalities’ had been created. Then, the dataset comprised a total of 7851 municipalities for each year.⁴¹ Each of the ‘pseudo-municipalities’ covers a minimum of two and a maximum of seven municipalities. With the creation of the ‘pseudo-municipalities’, these 7851 municipalities form the basis upon which we carried out the analysis of the evolution of literacy in Spain, using the information provided in the population censuses of 1860, 1900 and 1930.

A first exploratory analysis: the main stages in transition to universal literacy

In this section, we describe how literacy evolved across Spanish municipalities between 1860 and 1930. While the historical information contained in the 1860 population census reflects the legacy of the *Ancien Régime*, it is worth remembering that the Moyano Act was passed in 1857 but primary education was essentially funded by the local community until 1902. In this study we explore two main stages: 1860–1900 and 1900–1930. That said, it is worth stressing that population grew during the whole period of study, but it did so more rapidly in the early twentieth century, as Figure 2 shows. This is indeed important because a growing population put further pressure on the provision of elementary schooling.

Table 2 presents some descriptive statistics. As Table 1 has already illustrated, literacy in Spain improved over the period of study, but especially from 1900 and 1930. While barely a fifth of the population of Spain could read and write in 1860, this had increased to more than a third by 1900. By 1930, almost 60% of the population was literate.⁴² Table 2 also introduces how different was literacy across municipalities. Although these disparities were still sizeable in 1930, territorial dispersion first increased and then declined, as the single and population-weighted standard deviations show.

To complete this overview, Figure 3 shows histograms (frequency of municipalities by percentage of population that could read and write) for each of the population censuses. It can be seen that between 1860 and 1900 literacy improved in certain municipalities, but not in all. In this regard, it appears that, from 1860 to 1900, literacy improved in municipalities where literacy was somewhat widespread in the *Ancien Régime*.⁴³ In fact, at the turn of the twentieth century a large number of municipalities still exhibited

⁴⁰There are various strategies for the homogenisation of municipalities. In our case, when an alteration affects two or more municipalities, we create a ‘pseudo-municipality’ that covers all parties.

⁴¹This figure results from subtracting the 255 ‘pseudo-municipalities’ we created from the 8106 municipalities of 2001.

⁴²Note that, given the nature of the information provided by the population census, we calculate the global literacy rate. If this rate were instead calculated for the population above age 10, the literacy levels would increase to 26.5% (1860), 44.8% (1900) and 74.4% (1930) respectively.

⁴³A potential explanation is gender equality. That is to say, female literacy grew rapidly in municipalities where male literacy was already high.

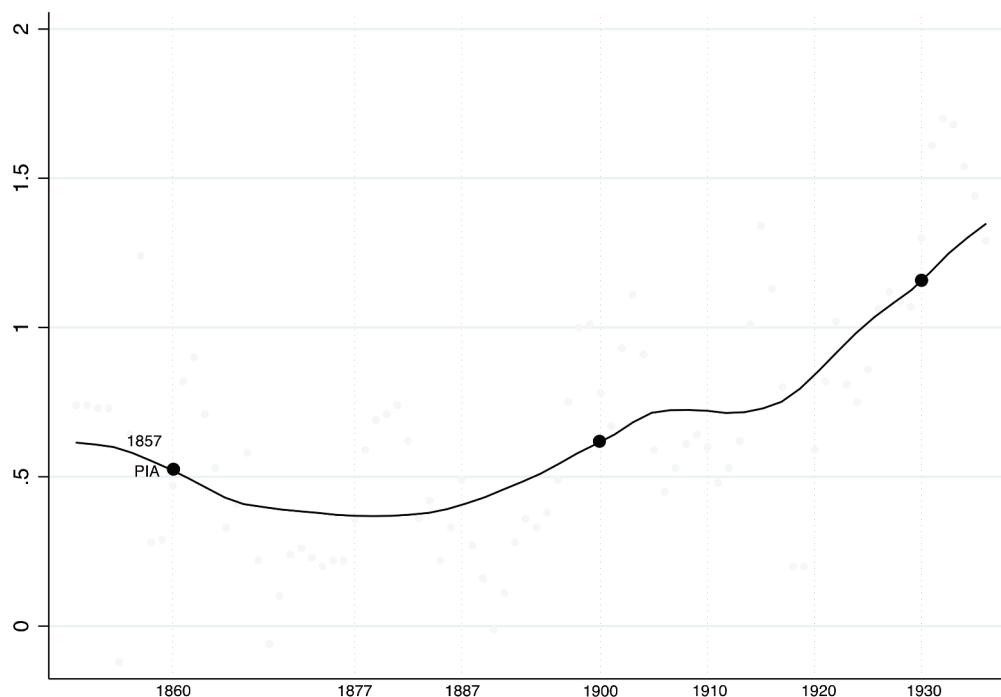


Figure 2. Population of Spain (% annual increase), 1850–1936.

Note: Smoothed average of the annual rates (%) of population growth.

Source: Prados de la Escosura (2016, Table 3); population censuses.

Table 2. Statistical summary (% of population that could read and write), by census, 1860–1930

Census	S. av.	W. av.	Max.	Min.	SSD	WSD	Municipalities	Population
1860	20.20	19.94	70.23	0.49	10.51	10.68	7851	15,645,017
1900	35.51	33.43	83.40	2.44	15.28	15.28	7851	18,594,405
1930	56.47	55.62	89.36	1.47	13.82	14.93	7851	23,563,799

Note: S. av.: simple average; W. av.: weighted average; SCV: simple coefficient of variation; WCV: weighted coefficient of variation.

Source: Population censuses.

literacy rates below the 20–30% threshold. This pattern, however, changed profoundly by 1930, once a large number of municipalities had nearly reached universal literacy.

In brief, of a total population of almost 16 million it is estimated that only around 20% could read and write in 1860. Following previous studies, Castile-Leon and the territories around Cantabria, Alava and Navarre presented the highest levels of literacy in the mid-nineteenth century. At the other extreme were the southern provinces (in the regions of Andalusia, Castile-la Mancha, Murcia and the Valencian Community) along with those in the extreme north-west of the peninsula (Galicia and Asturias).

Map 1 shows the percentage of people in each municipality who could read and write according to the population census of that year, confirming the spatial patterns that had already been anticipated in studies carried out at the provincial level.⁴⁴ The municipal

⁴⁴Núñez, *La fuente de la riqueza*.

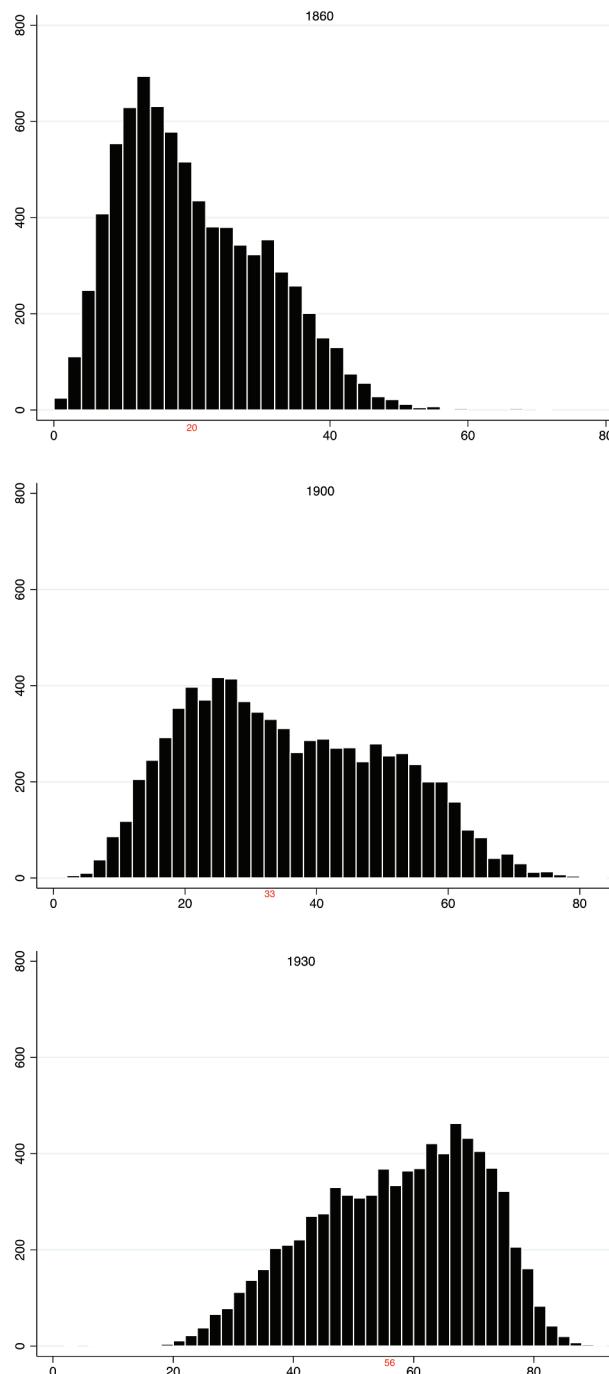
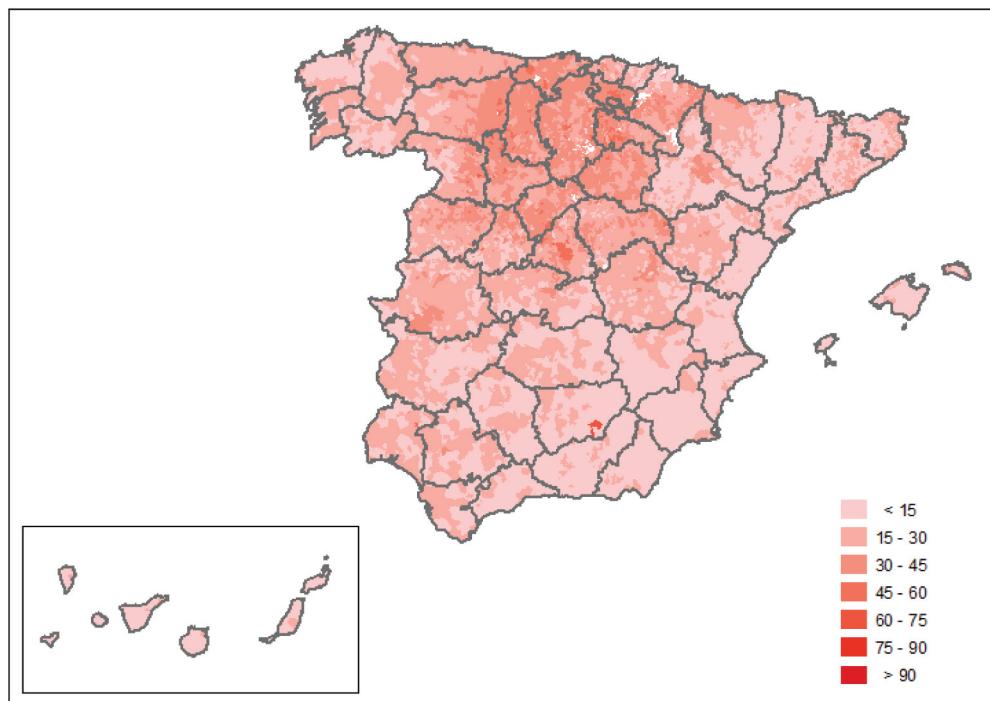


Figure 3. Histogram (% of population that could read and write), by census, 1860–1930.

Note: The histogram distributes the municipalities into 2% bars. The weighted average for each census is marked in red.

Source: Population censuses.



Map 1. Literacy rates in 1860.

Source: Population census.

information thus enables us to identify and study territorial inequalities in greater depth, revealing that while some areas enjoyed literacy rates around 50–60% (in the centre-north and north of Spain), other locations had figures below 10% (in the south and south-east). If we consider the notion of ‘literacy thresholds’, according to which a literacy rate below 30–40% slows down a society’s development and progress, we can only conclude that the legacy of the *Ancien Régime* constituted an obstacle to the advancement of Spanish society.⁴⁵

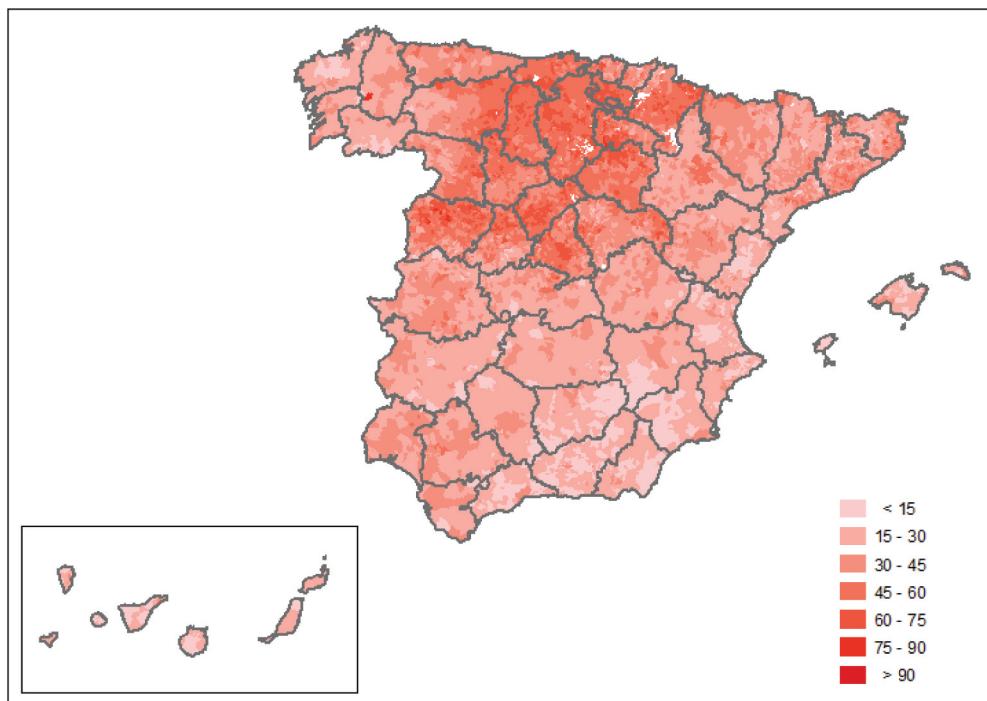
Map 2 shows literacy in each municipality in 1900. Interestingly, the spatial patterns identified in 1860 were reinforced during this first stage. It seems that the Moyano Act, passed in 1857, could not offset the existing imbalances. Indeed, it could be argued that the opposite scenario is the case. Territorial or municipal differences were reinforced or more pronounced at the turn of the twentieth century. That is to say, literacy mainly improved in municipalities where a relatively large proportion of men could read and write. In sum, the legacy of the *Ancien Régime* remained until the early years of the twentieth century.⁴⁶

During the early twentieth century the Spanish economy and society underwent a number of important changes. Population growth accelerated and over the early decades of the century the rate of structural change increased.⁴⁷ The relative importance of

⁴⁵Mary Jean Bowman and C. Arnold Anderson, ‘Concerning the Role of Education in Development’, in *Old Societies and New States*, ed. Clifford Geertz (Glencoe: Free Press, 1963): 247–69.

⁴⁶Rafael Barquín, Pedro Pérez and Basilio Sanz, ‘Literacy in Spain in the 19th Century: An Econometric Analysis’, *Documento de trabajo-AEHE* N° 1615 (2016), for instance, examine the slow progress of literacy during the nineteenth century and argue that the lack of educational investment was at the core of the issue.

⁴⁷Prados de la Escosura, *Spanish Economic Growth*. This was partly because the crude mortality rate decreased notably after 1900: Pérez Moreda et al., *La conquista de la salud*.



Map 2. Literacy rates in 1900.

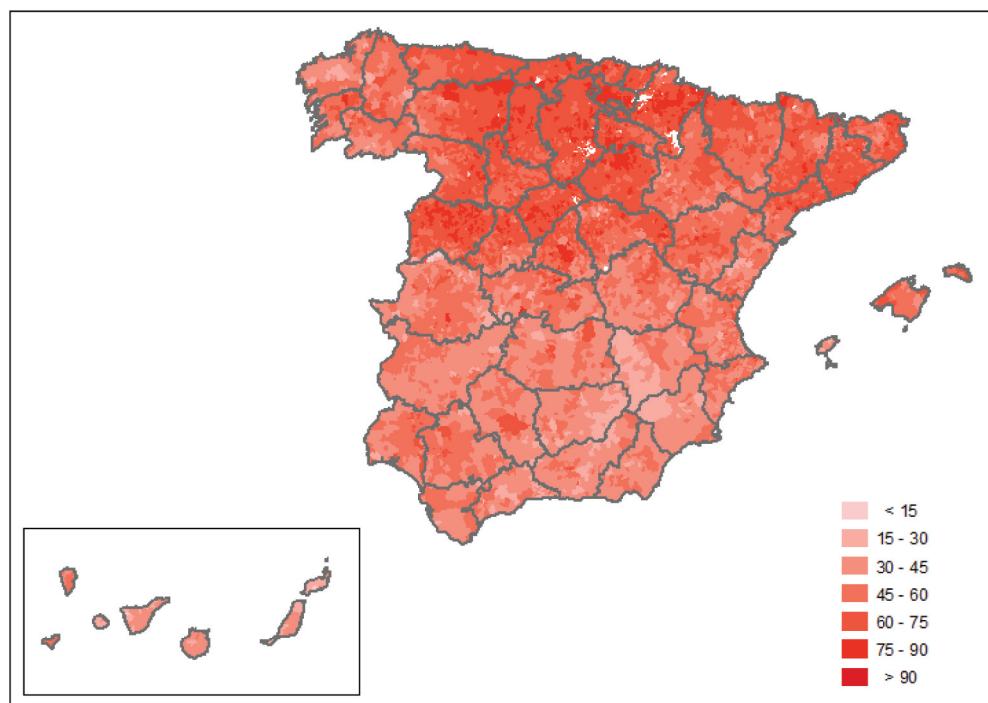
Source: Population census.

agriculture, livestock and fishing, which until then had been the main economic activities, began to decline. There was also a slow but gradual industrialisation. Socioeconomic change stimulated internal migrations from agrarian regions to those where industrial (manufacturing, extractive) activity flourished.⁴⁸ This, in turn, led to a greater spatial concentration of economic activity.⁴⁹ Advances in transport and communication infrastructures (railways, telegraph, etc.) made the movement of goods, people and information easier. In an increasingly urban society in which the press and media were growing in significance and where population counts and administrative procedures were progressively more frequent, knowing how to read and write became more and more necessary. Indeed, illiteracy could have become a social stigma that could have changed the existing incentive structure.

In this context of far-reaching socioeconomic change, the need or desire to learn to read and write was accompanied by improvements in the education system. Although it

⁴⁸See Javier Silvestre, 'Internal Migrations in Spain, 1877–1930', *European Review of Economic History* 9 (2005): 233–65; Javier Silvestre, 'Temporary Internal Migrations in Spain, 1860–1930', *Social Science History* 31 (2007): 539–74. Moreover, international emigration also increased. Blanca Sánchez Alonso, 'Those Who Left and Those Who Stayed Behind: Explaining Emigration from the Regions of Spain, 1880–1914', *Journal of Economic History* 60 (2000): 730–55, noted the disparity in external emigration from Spanish provinces. Between 1911 and 1913 almost a third of emigrants were from Galicia, although that region was home to only 10% of the Spanish population. See, for instance, Martín Fernández-Sánchez, 'Mass Emigration and Human Capital over a Century: Evidence from the Galician Diaspora', mimeo (2019), for a clear-cutting study on human capital formation and the Galician diaspora. At the other extreme, emigrants from Aragon and Extremadura accounted for less than 2% of the total, while their respective populations represented around 5%.

⁴⁹Díez-Minguela et al., *Regional Inequality*.



Map 3. Literacy rates in 1930.

Source: Population census.

is extremely difficult to disentangle the effects of all these changes, the evidence shows that literacy improved rapidly between 1900 and 1930. Map 3 shows how literacy evolved at the municipal level.

In short, this first exploratory analysis suggests that the early efforts made with the passing of the Moyano Act in 1857 had no immediate impact. Indeed, the municipal data show that literacy levels improved during this stage in those very municipalities that already had higher levels in 1860. It is only with the start of the twentieth century that convergence can be somewhat observed. It would therefore seem that the legacy of the *Ancien Régime* contributed decisively to determining the different levels of literacy within Spain.⁵⁰

Geographical differences in the transition to universal literacy

The literature, using provincial data, usually points out that territorial inequality in literacy tended to decrease during the period analysed here, or, to put it another way, that literacy levels in Spanish provinces converged.⁵¹ Certainly, the spread of literacy caused the distance

⁵⁰For potential explanations of the legacy of the *Ancien Régime* see Francisco J. Beltrán Tapia, 'Enclosing Literacy? Common Lands and Human Capital in Spain, 1860–1930', *Journal of Institutional Economics* 9 (2013): 491–515; Francisco J. Beltrán Tapia and Julio Martínez-Galarraga, 'Inequality and Education in Pre-Industrial Economies: Evidence from Spain', *Explorations in Economic History* 69, no. 3 (2018): 81–101, for potential explanations of the territorial disparities in literacy rates.

⁵¹David-Sven Reher, 'La teoría del capital humano y las realidades de la historia', *Papeles de Economía Española* 73 (1997): 254–61, notes that the gradual growth of the Spanish education system boosted literacy levels in the south (an area that started from low education levels), whereas there was a more moderate improvement in the north (an area characterised by more widespread literacy).

between extremes to narrow. However, a detailed analysis of how regional inequality evolved taking into account the distribution as a whole was missing. From this standpoint the narrowing gap between regions may not have been so intense if the setting up of the education system was carried out to a greater degree and was more effective in those regions that were already developing (like Catalonia, for example, which occupied an intermediate position in the literacy ranking) than in those that were lagging behind (like Extremadura and Galicia, for example, which occupied the bottom positions).⁵²

In this section, we explore in greater depth the evolution of territorial inequality in literacy using the new set of information at municipal level. Specifically, we discuss the possible existence of a pattern of territorial convergence in literacy levels and the potential impact of the changes made in primary education on inequality in education between territories. In this regard Table 2, which presents information on the levels and evolution of territorial inequality, provides a series of stylised facts. The first and possibly the most striking is that, in parallel with the advance of literacy, territorial disparities grew, especially between 1860 and 1900. The simple standard deviation (SSD) for the distribution, which includes literacy rates for the population of Spain as a whole, increases from a value of 10.51 in 1860 to 15.28 in 1900, and then falls to 13.82 in 1930.⁵³

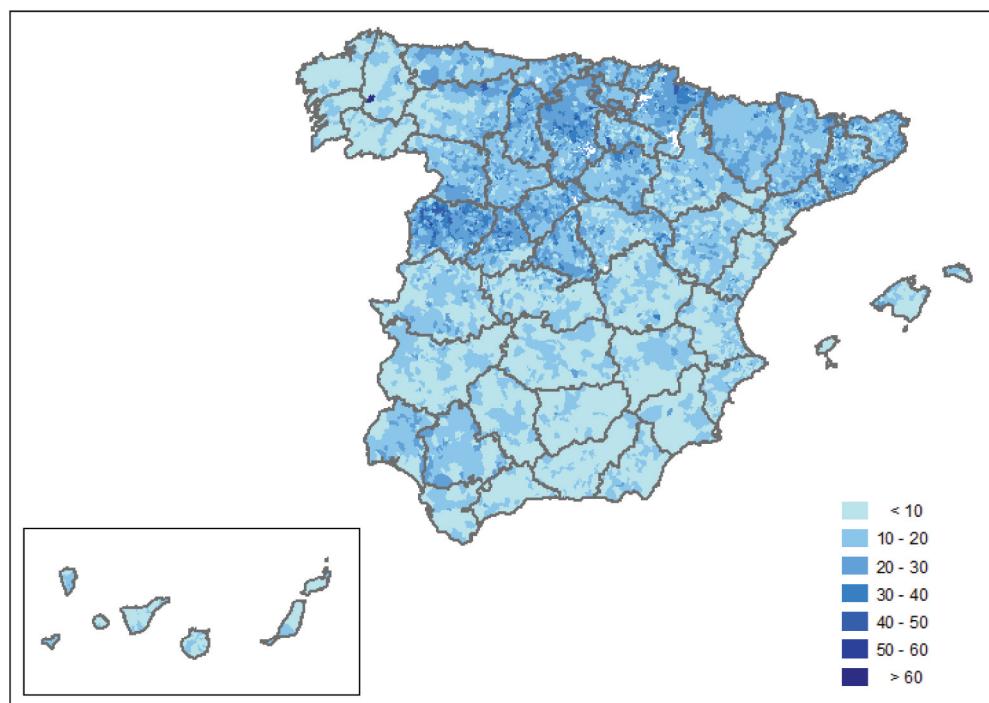
Nevertheless, and although there is convergence, this decrease in the average literacy gap must not hide an additional fact, which is that the distance between the extremes does not fall continuously. The ratio between maximum and minimum municipal literacy rates (columns 4 and 5) fell considerably between 1860 and 1900, but then increased between 1900 and 1930. Although average literacy levels along with their maximum values grew rapidly, some municipalities did not participate in the process and the distance between the extremes of the distribution widened. Later we shall provide new evidence about how far this was true in terms of the municipalities affected.

The third noteworthy fact has to do with the rate at which territorial inequality decreased. The speed of convergence increased between 1900 and 1930, i.e. with the transition to a model in which the State took over primary school funding. In comparative terms, it can be argued that the model in which primary education was funded by the local community, developed in the *Ancien Régime* and maintained during the nineteenth century, tended to preserve the existing territorial differences. Then, with the creation of the Ministry of Public Instruction and Fine Arts, followed by several policies and efforts aimed at encouraging literacy, territorial disparities rapidly declined. In order to visually illustrate the geography of this, Maps 4 and 5 provide evidence of the change in literacy levels (measured in absolute terms) in the 7851 Spanish municipalities in both stages: 1860–1900 and 1900–1930.

As Map 4 shows, literacy growth, since the passing of the Moyano Act, concentrated mainly in municipalities that already had relatively high literacy rates in 1860, such as Castile-Leon, Navarre, La Rioja, Alava and Madrid. Significant increases (of between 10

⁵²Reher, *La teoría del capital humano*. See also Jordi Nadal, 'El factor humà en el retard econòmic espanyol. El debat entre els historiadors', *Revista Econòmica de Catalunya* 29 (1996): 9–14. In the case of Catalonia, Joan R. Rosés, 'Measuring the Contribution of Human Capital to the Development of the Catalan Factory System (1830–1861)', *European Review of Economic History* 2 (1998): 25–48, argued that human capital stock in the early nineteenth century resulted from on-the-job training and informal education instead of formal schooling.

⁵³The weighted standard deviation (WSD) follows a similar trajectory. In Figure 3, this rising dispersion can be clearly observed in the histograms.



Map 4. Increase in literacy rates (percentage points), 1860–1900.

Source: Population censuses.

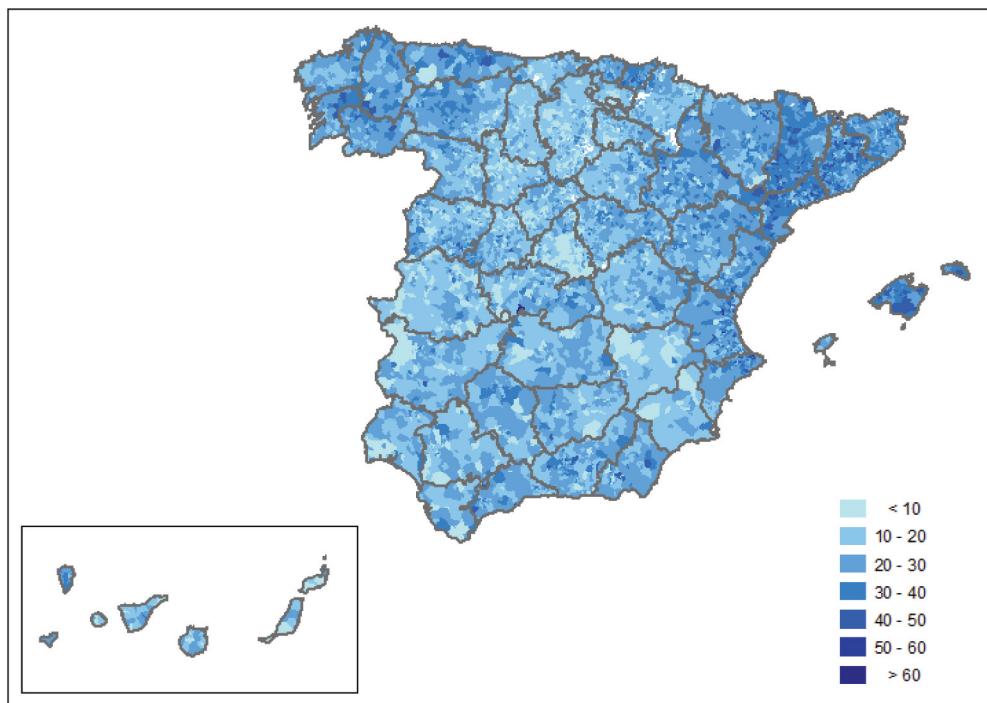
and 20 points) are also revealed in different municipalities located in areas where literacy rates at the beginning of the same period were low, such as Andalusia (especially in the provinces of Cadiz and Seville), Extremadura, Castile-La Mancha and the coastal areas of the Valencian Community. In all these areas, however, the growth of literacy in some municipalities occurred in parallel with the slow growth in many other municipalities in the same region.

Yet, this map radically changes in the period 1900–1930. The municipalities that registered the greatest increases are no longer the traditional ones, and it is in areas with intermediate levels of literacy that the most significant increases are observed. More specifically, it is worth stressing the advances of the municipalities of the Mediterranean coast, especially those in Catalonia, the Balearic Islands and the Valencian Community, together with those in Aragon, mainly along the River Ebro, and the Basque Country, especially in Gipuzkoa and Bizkaia. Furthermore, this pattern matches the areas that experienced greater economic dynamism.⁵⁴

Given that literacy rates are bounded, ranging from 0.49% to 90.65% in the database, it would be reasonable to believe that absolute increases would tend to be more relevant in places that started from lower levels.⁵⁵ But this was not usually the case between 1860 and 1900. In fact, remarkable improvements are not found in

⁵⁴Reher, *La teoría del capital humano*; Díez-Minguela et al., *Regional Inequality*.

⁵⁵In the database, and by construction, the highest literacy rate observed was 90.65%. It is worth remembering that literacy rates are computed as the proportion (%) of the total population that could read and write. That is to say, children or population aged 10 years old or less are included.



Map 5. Increase in literacy rates (percentage points), 1900–1930.

Source: Population censuses.

municipalities with low literacy rates but in those with intermediate rates and characterised by greater economic dynamism. Increasing internal migratory flows, growing urbanisation and rapid structural change are likely to have affected the expected return on investment in education more strongly than in less dynamic areas of the peninsula. It could therefore be argued that there was a significant relationship between the uneven advance of literacy and socioeconomic change.⁵⁶

In order to explore these hypotheses in greater depth, we provide below, in Figure 4, evidence of the relationship between literacy levels and growth in both stages (1860–1900; 1900–1930). As Maps 4 and 5 have suggested, it seems that the process of convergence of literacy levels would only have come about to a significant degree as part of the spread of literacy during the early twentieth century. Bearing this in mind, Figure 4 clearly shows a strong negative correlation between the initial level of literacy and the absolute improvement over the period between 1900 and 1930, but not before. In fact, during the first stage a positive correlation arises, which implies that advances in literacy occurred mainly in more literate municipalities.⁵⁷

⁵⁶The method of constructing the variable presented here could upwardly bias the values obtained for those populations that received literate adult population, since this received population would have a lower proportion of people aged under 10 and a higher volume of adult-age literacy: Francisco J. Beltrán Tapia and Santiago de Miguel Salanova 'Migrants' Self-Selection in the Early Stages of Modern Economic Growth, Spain (1880–1930)', *Economic History Review* 70 (2017): 101–21. However, the migration flows in Spain were concentrated in a limited group of populations and of low intensity at least until the 1920s: Silvestre, *Temporary Internal Migrations*.

⁵⁷Figure 4 also shows a number of municipalities where literacy fell. Measurement error, selective migration and extraordinary changes in population structure might explain this pattern.

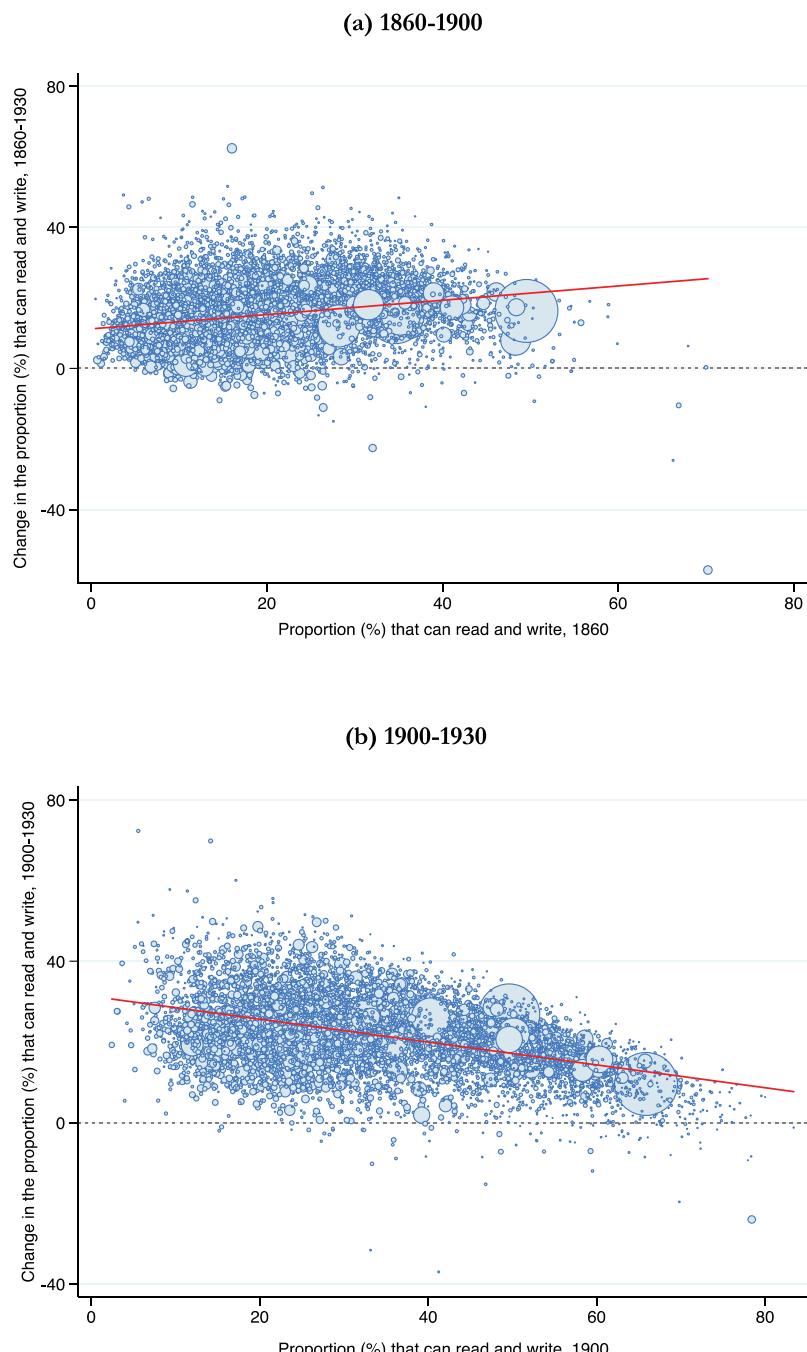


Figure 4. Convergence of municipal literacy: (a) 1860–1900; (b) 1900–1930.

Note: The solid red line represents the linear fit. Municipalities are population-weighted in the initial year, 1860 (above) and 1900 (below).

Source: Population censuses.

Conclusions

This study provides new evidence on the transition to universal literacy in Spain from 1860 to 1930. To this end we constructed a novel dataset with historical information at the municipal level, which enabled us to delve deeper into this matter. In sum, literacy in nineteenth-century Spain exhibited substantial variation. For example, municipalities located in the northern half of the peninsula, especially in Castile-Leon and Cantabria, had high levels of literacy, in some cases reaching the levels of those recorded in certain parts of Western Europe. In the south-east, however, illiteracy was rampant. Besides, the fact that regional differences were especially stark should not hide that disparities within provinces were also important.

Under the Moyano Act, passed in 1857, the proportion of people who could read and write increased. This, however, was not a steady process. Using municipal data several important issues arise. First, the *Ancien Régime* calls for further research and thought. By 1860, there seem to be sizeable differences in literacy across municipalities. Second, the Moyano Act had little, if any, effect in offsetting these disparities, at least between 1860 and 1900. In fact, literacy essentially improved in places where a greater share of the population could read and write in 1860. Considered as a whole, these results do not bear testament to the effectiveness of the Moyano Act, but neither are they surprising, given that the funding of primary education was left in the hands of the local communities at a time of severe financial restrictions. Moreover, although the Moyano Act established compulsory education between ages six and nine, its implementation was rather limited given the high levels of absenteeism.

By 1900, illiteracy was rampant in some parts of Spain, which motivated a call to action on primary education. With the creation of the Ministry of Public Instruction and Fine Arts, further efforts were made to overcome several issues (low levels of spending on education, insufficiently qualified teachers, deficient infrastructures, etc.). Eventually, the State took over primary education (in particular teachers' wages) and schooling was made compulsory up to age 12. Equally, socio-economic change deepened. Although it is extremely difficult to single out a particular mechanism, it appears that supply and demand went hand-in-hand raising the average level of literacy within Spain.

As regard territorial disparities, this study points to the *Ancien Régime*. It is still not clearly understood what drove the sizeable disparities that existed in 1860. Besides, the uneven performance, in terms of literacy, proved to be very persistent, and the passing of the Moyano Act and the modest efforts made by the State in the second half of the nineteenth century were insufficient to offset these imbalances. Still, literacy seems not to be closely related to socioeconomic progress. Although the leading industrial territories (Catalonia, Basque Country) almost reached universal literacy by 1930, several territories that were relatively literate in 1860 did not undergo such profound socio-economic change. Regardless, this study hopes to stimulate further research interest in the history of education.

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Notes on contributors

Francisco J. Beltrán Tapia is Associate Professor of Economic History at the Norwegian University of Science and Technology, Norway. His research is located at the intersection between economic history and historical demography, especially regarding education, health and gender discrimination.

Alfonso Díez-Minguela is Assistant Professor of Economic History at the Universitat de Valencia, Spain. His broad research interests include history, economics and geography; in particular, he studies the historical roots of economic development in Spain.

Julio Martínez-Galarraga is Associate Professor of Economic History at the University of Valencia, Spain. His research is focused on the fields of regional economics, economic geography, inequality and education from a historical perspective.

Daniel A. Tirado-Fabregat is Professor of Economic History at the University of Valencia, Spain. His broad research interests include the historical roots of regional economic development and inequality.

ORCID

Francisco J. Beltrán Tapia  <http://orcid.org/0000-0002-7354-5699>

Alfonso Díez-Minguela  <http://orcid.org/0000-0001-6141-3042>

Julio Martínez-Galarraga  <http://orcid.org/0000-0002-3876-3121>

Daniel A. Tirado-Fabregat  <http://orcid.org/0000-0002-7717-2674>

Appendix A



Map A1. Spanish provinces.

Source: own elaboration.