Last Generations and Households of Stem Family in Southern Europe. A case study of Catalonia (Spain) 19th -20th centuries.

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Abstract.

This paper analyzes the evolution of household structures in five Baix Llobregat municipalities (Catalonia) between the mid-19th and mid-20th centuries, focusing on the Stem family system's adaptation in agrarian and industrial contexts. This system, characterized by primogeniture and co-residence of the heir with parents, was widespread in pre-industrial Europe and remained strong in Catalonia until the late 19th century. While industrialization is often seen as the main driver of its decline, recent studies suggest it played a role in adapting industrialization. This study supports this view, showing the system's resilience even in early industrialized municipalities until 1950.

This paper examines the evolution of household structures in five Baix Llobregat municipalities (Catalonia) from the mid-19th to mid-20th centuries, focusing on the resilience of the Stem family system in agrarian and industrial settings. Characterized by primogeniture and co-residence of the heir with parents, this system, prevalent in pre-industrial northern and central Europe, was deeply rooted in Catalonia from the 10th century and only began declining in the late 19th century (Casa de Velázquez, 1986; Ferrer Alòs, 2003, 2005; González, 1991; Maluquer de Motes Bernet, 1998; To Figueras, 1993). The traditional view links its fall to industrialization, arguing it hindered industrial growth and then vanished (Fauve-Chamoux & Ochiai, 2009; Reher, 1998; Todd, 1985; Wall, 1995), while recent research suggests it adapted to and even facilitated industrialization (Borderías & Ferrer-Alòs, 2017; Gruber & Szołtysek, 2012). This study contributes to this debate by analyzing industrialized and rural towns, revealing the Stem family's persistence until 1950, even in municipalities with early industrialization, rail connections, and migration growth.

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This paper focuses on the analysis of the evolution of household structure between mid-19th and mid-20th centuries of 5 municipalities in the Baix Llobregat region in Catalonia, Spain, paying special attention to the reproduction and adaptation of the Stem family system in agrarian and industrial contexts.

The Stem family system is characterized by the impartibility of the household patrimony following the primogeniture rule of inheritance for preserving the family linage, which translates into the co-residence in the parental home of the heir (firstborn son) and his wife and children with the head and his wife. The heir would take the position of head of the household after the decease of his father. This system was widely spread in pre-industrial northern and central Europe, and Catalonia is one of the regions where it was most prevalent; it started consolidating in the 10th century and only began its fall in the second half of the 19th century (Casa de Velázquez, 1986; Ferrer Alòs, 2003; Ferrer i Alòs, 2005; González, 1991; Maluquer De Motes Bernet, 1998; To Figueras, 1993). Yet, this system has fallen into disuse, and households today show a nuclear composition in their majority.

The main agent driver of this change in family structure has been argued to be industrialization. In the open debate regarding the relationship between this family system and the process of industrialization, the traditional argument suggests that this family system delayed the process of industrialization and ultimately changed abruptly once industrialization was adopted (Fauve-Chamoux and Ochiai, 2009; Reher, 1998; Todd, 1985; Wall, 1995); while, on the other side, recent studies suggest that the stem family played an important role in the process of industrialization, adapting it to the family structure and thus prevailing throughout the process (Borderías and Ferrer-Alòs, 2017; Gruber and Szoltysek, 2012). This study fits as a contribution to these recent studies. We analyze the household structure of five municipalities of one of the regions in Spain that showed an earlier proto-industrialization (beginning of 18th century) and industrialization (mid-19th century), and compare early industrialized towns with others that remained mainly rural during the period studied, the results highlight the strong resilience of stem family system, being highly significant till 1950 even in the municipalities that present an early industrialization, early development of a railroad connection and increase of their population due to migration.

Introduction:

Stem family is characterized by this aforementioned rule of primogeniture for inheritance (only the first male born inherits the family property) and a multigenerational household in which the heir remains living in the parental house after his marriage, bringing his wife to the parental home. Also the unmarried siblings, aunts and uncles of the heir can live in the household. The heir would take the position of head after his father passing, sustaining the members of the household and the family property. In this family system the family house where the linage resides has a strong significance and value to the individuals. Due to the strong focus in the persistence of the household lineage that this family system roots in, stem family system seems to have been extremely persistent in Europe and many areas of Asia, it become the most extended family system in northern and central European regions in the pre-industrial time (Rijpma and Carmichael, 2016; Todd, 1995), among those, the region of Catalonia in Spain. The prevalence of this system during the 19th century led the developers of the field of European historical demography to believe that Stem family system itself (alongside with the extended households) was indeed the norm of the pre-industrial period in all Europe (Play, 1871). The debate of European family homogeneity in the pre-industrial time is long overcome, but the relevance and persistence of Stem family system is still the focus of proliferous research, which is now the case of this paper.

And the key to this fascination with the Stem family is linked to theorizing its change. The households of the regions with the old stem family look different today (mostly nuclear households with a very small prevalence of multigenerational living arrangements (Iacovou and Skew, n.d., 2011)[1]. This system was characterized by its stability and resilience that made this system survive over seven hundred years, and yet the theorization regarding how and when it turned into the current nuclear family remains a topic of discussion.

The first and more salient argument regarding its fall focuses on industrialization as the shock that this family system couldn't survive (Goode, 1970; Minge-Kalman, 1978; Stanfors and Goldscheider, 2017). This traditional argument estates that the family based on the nuclear household is less bonded to responsibilities with the land or the household, and thus more mobile, which translates in more efficient for the industrial world. This implies that not only the areas with nuclear households would adopt industrialization fastest, but also that the areas with extended households would change towards nuclear ones. Others argue that it was the spread of the enlightenment ideas (Allen, 1999; Botting, 2006; Le Play, 1874; Witte, 2014), or the combination of the changes of modernization in the society (Habakkuk, 1955; Janssens, 2003; Tilly, 2017; Wall, 2001).

Challenging the traditional argument, recent literature suggests that stem family system may have had a more active role in their context and in the development of industrialization, being more resilient to the economic changes than what was first considered, being a instrumental piece for the economic development

[1] Most European countries show lower than 5% of multigenerational households. In Catalonia three-generational households were between 4% & 3% in 2007, and has now decreased below 2,5%. Data from INE, consulted at IEC (https://www.idescat.cat/pub/?id=ed&n=2646&by=mun - https://www.ine.es/prensa/ech_2020.pdf).

rather than an impediment for it (Nimkoff, 1960; Rao, 1973). The literature on the history of industrialization of Catalonia seems to agree with that perspective, highlighting some crucial points regarding the role of family in the process of industrialization of the region. Also, authors such as Julie Marfany (Marfany, 2016) or Cristina Borderías and Llorenç Ferrer-Alòs (2017) argue that the stem family structure was instrumental in supporting the industrialization process in Catalonia, particularly by providing a flexible and abundant labor force for the textile industry and shaping the model of industrialization to adapt it to the social structure in which this stem system was embedded. Whether these findings regarding the Catalan Sem family can or not be associated to all the regions in Europe with stem family system, they highlight the need to interpret family as a more active factor of the environment, rather than as a mere result of the economic circumstances.

The lack of availability of historical data to conduct a longitudinal analysis on the period of change was the main limitation for approaching the nuances of the change of family structure, but recent work as the one carried by Joana Pujadas Mora and her team with the database used for this study makes this evolutionary study possible. The Baix Llobregat database (Pujadas-Mora et al., 2022, 2019) is an excellent resource to study the adaptation of this family type to industrialization and with so getting closer to identify the ways in which the legacies of this medieval family structure operate.

The main questions that drive this work are: Was stem family system resilient through the industrialization process or changed abruptly once implemented? When does the change towards nuclear households start?

The five municipalities included in this study (Sant Feliu de Llobregat, Collbató, Santa Coloma de Cervelló, Sant Vicenç dels Horts, and Castellví de Rosanes), present some crucial differences regarding the process of industrialization and the improvement of communications (railway) which enable to address the impact that these elements had over household structure, and thus, analyze the resilience and change of this family formation over time. The entire region presented an early proto industrialization in the 17th and 18th centuries (Ferrer i Alòs, 2012; Marfany, 2016; Ogilvie and Cerman, 1996; Thomson, 1996), and also an early industrialization compared to the rest of the Spanish territory (in which nuclear households predominated before industrialization) taking place from the beginning of the first half of the 19th century (Martínez-Galarraga and Prat, 2016; Rosés, 2003a; Smith and Díaz-Andreu, 2003).

This work examines the evolution of household structure using descriptive methods using the censuses between 1857 and 1955 of the 5 municipalities mentioned on the area of Baix Llobregat, situated near Barcelona, in Catalonia, Spain (Pujadas-Mora et al., 2022, 2019). Whereas agriculture prevailed as the main economic sector for the region, only two of the municipalities included in the study remained rural during the period studied, other two of the municipalities present an early development of industry (textile and concrete), and the last one is an example e of the paternalistic industrial typology common in Catalonia, the industrial colony (dedicated to cotton).

History of the Stem family system:

The literature of European pre-industrial family systems has identified several household/family types across Europe[2], some of the variables that have been used to address the differences among family structure and practices in that period are: the household generational composition (how many generations live in the same household, how many married couples), marriage and childbearing age, fertility rate, headship of the household, the presence of servants in the household, inheritance practices, marriage contracts (dowry), etc.

To illustrate as example, Emmanuel Todd (2011, 1995, 1985) describes 4 main pre-industrial family systems in the pre-industrial Europe from the combination of two dimensions: 1) extended (more than two generation living in the same household) versus nuclear households (only two generations living in the same household around a married couple, children emancipate from the parental home to form a new family unit); 2) egalitarian versus inegalitarian inheritance systems (inegalitarian if there was only one heir, egalitarian if there was an equal partition between siblings). The four family systems according to his classification are: Absolute nuclear (nuclear and inegalitarian), Nuclear egalitarian, Communitarian (Extended and egalitarian) and Stem (extended and inegalitarian). This paper focuses on the last one, Stem family system.

Stem family system has been broadly documented, and most of the authors that describe pre-industrial family have identified this system. It was indeed the most common in the pre-industrial period, and for long believed to be the characteristic European family formation in the pre-industrial period , till further research discovered the existence of nuclear households in the pre-industrial time, as well as more nuanced differences between family practices (Kertzer, 1991; Kertzer and Barbagli, 2001 Vol 2, Introduction).

As referred in the introduction, Stem family is recognized by inegalitarian inheritance, rooted in the rule of impartible property, to solve the choice of who among the sons should get the family property, the title of heir is given to the first male son. The heir will not only inherit the parental property but carry on the lineage of the family taking over his father role as head of the household after his passing. The household structure in this family system is extended, since the heir and his wife and children live also in the parental house, as well as the unmarried brothers and sisters of the heir and head of the household. This system was the most common in the pre-industrial Europe, but, how did it originated? And why did it differ from the other family systems in Europe?

Consolidation of different pre-industrial families

The different pre-industrial family systems got consolidated in Europe during the Middle Ages and had a strong influence from the ancient roman laws and the agrarian systems that developed from the land property distribution of each region. Ancient Roman civilization developed a complex system of law regarding inheritance, apart from the evolution of these laws, the nuances of its complexity and the regional

[2] We can find a broad literature describing the differences of family organization across European regions in the pre-industrial period (Banfield, 1967; Bott, 1957; Hajnal, 1982; Laslett, 1983; Murdock, 1967; Play, 1871; Reher, 1998; Todd, 1995, 1985).

differences in its broad territory[3], there are two basic elements of this law that have a direct connection with the family systems. First, the possibility (and preference) of writing a legal will, in which at least one heir had to be nominated as the successor of the deceased and thus take over his legal responsibilities. This reinforced the idea of continuity of the legacy of the deceased (paterfamilias) and his power over the future of his patrimony. And second, and most important, the declaration of a minimum share of the inheritance for those family members under the care of the deceased, which stablished a clear limit to the single heir will and was the base of inheritance distribution in the absence of a written will. (Aloy, 2017; Mainar, 2015; Wickham, 2009). This minimum share has been the base of the "legitimate share" on the current legal system in Spain (Aloy, 2017).

In this roman heritage we see already the roots of the two sides of the inheritance dimension that Todd uses for classifying pre-industrial family systems, the legitimacy of the denominated heir and the legitimacy of the partition among the rest of descendants of the deceased.

After the fall of the roman empire the legal institutions that used to organize family structure, inheritance and marriage collapsed. With the lack of formal institutions that regulated inheritance and marriage, laws developed differently from region to region, reinforcing local customs that adapted to the economic and societal nuances of each region (Di Renzo Villata, 2018; Salvi, 2018; Sperling, 2004; Wall, 1983; Weigel, 2008, 2008). With the expansion of feudalism and aristocracy in Europe after the 10th century, primogeniture rules started to spread. First, as the notorious preferred system for noble families and royalty, and later also along the peasant families in the zones where family economy was based on owned or rented family farms (thus, small property and low land centralization). After the 11th century primogeniture rules were spread and recognized across Europe, coexisting with areas of more egalitarian customs (Augustins, 2002; Bertocchi and Bozzano, 2019; Brodrick, 1872; Goody, 2000, 1989; Harris, 1977; Huning and Wahl, 2021; Shuker and Abrutyn, 2016)

Thus, important differences in family structure consolidated across the European territory. The areas based on agrarian systems that relayed on small property, were associated to impartible inheritance and primogeniture, and thus, to the stem family system. In this way, we can date the origin of this system in Europe back to the 11th century. According to the literature on the history of the Catalan family structure (Fargas Peñarrocha, 2009; Ferrer i Alòs, 2005; Peñarrocha, 2001), the Stem family seems to have been consolidated in Catalonia between the 10th and 12th centuries, and only started its fall during the second half of the 19th century (To Figueras, 1993).

[3] There were regional differences in law systems during the ancient time in the roman empire, the law of the provinces versus the law of Rome. Local province laws and roman law were coexisting, even in the areas that have been noted as less Romanized, as England (Birley, 2005; Thomas, 1984), roman law had a significant and lasting effect (Korporowicz, 2012); in the same line in those provinces with stronger roman influence, as is the case of France or Spain, still preserved in their province laws some Gallic, Iberian and Celtic customs that could vary even within their territory co-existing with the Roman law. (Ando, 2018; Eberle, 2016; Mousourakis, 2015; Richardson, 2015)

A model of reproduction of the Stem family.

The basic model of reproduction of this system of primogeniture and multigenerational living arrangement is based on the assigned roles depending on birth order, and a dependency on the social structure by marriage strategies. The first-born son will live in the household of his parents, as well as his wife and children, and he will become head of the household when his parents pass away. In absence of a son, in Catalonia, the position was taken over the first-born daughter, called "Pubilla". The same will happen to the first-born son of the heir, that will also become an heir. The Second-born (expression that refers to all the heir's brothers), if married[4], will emancipate to form a new household (counting with fewer resources than his brother) to form his own nuclear family, and start a new circle of the stem lineage following the same model with his first-born son. The head (the father and later the heir) had to provide for the rest of the members of the household, which meant to provide for them economically (by managing the agrarian production of the property) and socially, securing not only the maintenance of the family patrimony, but also the social status of the second-born sons and daughters (mostly through marriages with well positioned heirs or pubillas; by choosing a military or ecclesiastical career; or remaining in the household unmarried if the head could not provide a sufficient dowry to a well-positioned marriage). The daughters moved into her husband home after marriage, receiving a dowry that represented her price in the marriage market and a contribution to the household she was moving into. The economic system associated to this family system is the agrarian exploitation based on the small property.

Thus, this family system relied in the social order associated to collective coordination to maintain status and social class. The main goal of the family strategies developed in this system was to maintain the same social class, either through a favorable marriage, through postponement of marriage (working for some time to accumulate resources and be able to marry in a more favorable position), or to stay single in the parental home. The descendant tendency on social class was associated to the brothers of the heir, which in an economy based on the family production would get fewer chances of maintaining the social class if they didn't marry a "pubilla"(Borderías and Ferrer-Alòs, 2017).

While this system is easily recognizes in the nobility and royalty, in the areas denominated as Stem family system, this model was used by all social classes, adapted to their needs (Ferrer i Alòs, 1998). The data indicates that in the societies that showed this system in Europe, about 40% of the households showed an multigenerational structure. The true numbers are hard to reach, since as part of the life course of the household, the stem family could show a nuclear structure (stem households would show a nuclear structure in the gap between the death of the grandparents and the marriage of the grandson, refereeing to the son of the heir). Several formulas have been employed to recognize areas of stem family system, Fauve-

[4] "If married" asses to the fact that in the medieval times the destinies for the non-heirs did not often include the option of marriage. Parents would arrange the marriage of their daughters to other families first-borns, to ensure that they will have a property and welfare; and marry their first-borns to a woman who will move into the parental house. In the case of the second born sons, they could either stay in the household unmarried and work at the family farm or choose a life as a priest or in the military. Similar for the daughters that they could not find a good marriage for, either stay at the family house unmarried or choose a religious path.(Amengual-Bibiloni and Pujadas-Mora, 2020; Chacón and Bestard, 2017; Sheehan, 2019)

Chamoux (1996) settled the threshold in a quarter of the households in a given society (25%), Wachter et al. (2013) suggest after a simulation a higher number, between 29 and 44% of the households.

Whereas the studies that focuses on this family system look at the household, and not at the total population, assuming that these households were of bigger size than the nuclear ones, one could expect to see a higher percentage when looking at the amount of people that lived in stem households compared to the nuclear ones.

Change of the Stem family system.

The classical approach to the change of the stem family system, as it was referred in the introduction, focusses on the functionalistic approach to family structure, authors such as Spencer (1975, 1873) or Goode (1970), predicted that stem family system would collapse with the impact of industrialization, since the extended structure of the household and rigid roles of the system would not be efficient for the economic structure of the industrial role, in which more individual mobility, as the one associated to nuclear households, would be the most adaptable to the industrial social order. Thus, according to this approach, on the industrial world, the previous agrarian rigid order in which stem family relied on would collapse, forcing families to change into the efficient nuclear form. Indeed this is an argument that still today is used to address family change (Minge-Kalman, 1978; Stanfors and Goldscheider, 2017).

Whereas this approach interpret the strategies of reproduction of the stem family system as a sign of rigidity in the system of reproduction of social order, Le Play (1871) interpreted this family system differently. He considered that this was the most balanced household and family structure, since the figure of heir preserved the tradition and stability of the family lineage (sustaining a rigid role associated to duties with the land), whereas the less restricted role of the other sons allowed for mobility on the modern economy.

Following this idea, a more recent approach presented by Nimkoff (1960) and later by Rao (1973) challenges the traditional functionalistic argument, suggesting that the more equal accumulation of capital of the areas with stem family system and the free labor resulting from the bigger household size would indeed provide some advantages for industrialization, especially compared to areas with nuclear egalitarian family system, where inequalities were higher and the agrarian system was based on large exploitations. These advantages would be based on a higher chance of investment in modernization due to the higher accumulation of capital by family in the stem household, and the surplus of unemployed people in societies that were still mainly agrarian. The stem households contained typically at least two women, which implied that the housework was divided, and thus, at least one of the women (as well as the unmarried brothers and sisters of the heir) would get the free time needed to allow for taking over other tasks and work from home in in the production of proto-industrial goods such as textile (which would be also possible since families could afford the investment on the machinery needed to conduct such work). Later on, the same profiles that enabled this small-scale production would have the mobility to work in local factories at larger scale without compromising the structure of the household. Thus, this argument suggest that industrialization is not a

necessary and sufficient factor for producing "nuclear" family form, and that family should not be seen as a mere dependent variable on its relationship with the economic system.

The works of Barrera González (1990; 1991), the specific issue regarding the family structure of the Pyrenees (Casa de Velázquez, 1986), Marfany (2016, 2010), Borderias and Ferrer Alós (2017), and Pujadas-Mora et al. (2018) support this argument in the Catalan context, indicating that the multigenerational structure of the Stem family not only persisted through the first industrialization process in Catalonia, but also played an important role in this industrialization process.

These works provide a new sight to understand the relevance and resilience of this family system, adapting to economic changes that were promoted by the family system itself. Whether this argument can be generalized to all the areas with Stem family system in Europe, as the work as Minkoff or Rao suggest, is still an open topic of discussion[5]. But these late studies present evidence of how this argument seems to be valid for Catalonia.

Stem family is more than the multigenerational household structure, as it was mentioned, the indivisible inheritance settled in the figure of the heir, and the unequal and less favorable position of the brothers of this heir, are also important characteristics of this family system.

Looking at these characteristics is where the first documentations of the change of the stem system in Catalonia is found. Ferrer-i-Alòs (2005) states that the second-born sons were getting fewer alternatives to make a living in the new society and made use of the improved legal system to claim for their "legitimate" [6] portion of inheritance form mid 19th century, the migration and the availability of land also led some wealthy families to accumulate more property and change the inheritance strategy towards partible portions rather than accumulation over the heir. Rosa Ros (2009; 2012) addressing the inheritance strategies of the region by the different occupation profiles, also states that the primogeniture remained practiced till the second half of the 19th century, but the change towards more use of partible inheritance started in towns in the second half of the 18th century (among artisans, merchants, or sailors) and starts to be noticeable in the rural areas much later, in the second half of the 19th century.

These changes described coincide with the period of industrialization of the region, as well as the development of a railway system and with the beginning of the demographic transition, which are strong societal changes that the institution of family had to adapt to. Population growth, rural exodus, urbanization, expansion of education, and the rise of the cost of the dowry in the marriage market were some of the factors that affected the old social structures, making it hard to preserve the stability of the old model

[5] There is also literature about family change that points at how industrialization changed the household composition towards the nuclear household in some areas of Europe (Goode, 1970; Minge-Kalman, 1978; Stanfors and Goldscheider, 2017), as other works that point towards a longer persistence of the multigenerational household structure (Brennan et al., 1982; Curtis et al., n.d.; Evans and Lee, 2015; García, 1990; Habakkuk, 1955; Norris, 2016; Seward et al., 2005). Also, Kertzer (2002, p. 49), mentions how in the areas of stem system in France the system of primogeniture change, choosing second and third sons as heirs due to the preference of the heirs to seek fortune on new opportunities without being bonded to the parental property.

[6] Legal term that has its origins in the roman legal system (Aloy, 2017)

(Barrera González, 1990; Bertocchi, 2006; Borderías and Ferrer-Alòs, 2017; Casa de Velázquez, 1986; Ferrer Alòs, 2003; Ferrer i Alòs, 2005; Hughes, 2001).

What is interesting, is the resilience of the stem family system to those changes, suggesting than rather than an abrupt change, the family system adapted and evolved in line with the new socioeconomic context, developing new strategies coherent with the internal rules of the family system.

The works of Barrera González (1991) and Borderías and Ferrer-Alós (2017) These seem to provide the clearest image of the process of change of the Stem family system in Catalonia. Their work suggests that while the inheritance practices may have started to change earlier, the multigenerational living arrangement persisted through industrialization. Even in the Industrial Towns, as Borderías and Ferrer-Alós (2017) and Pujadas-Mora et al. (2018) show with the case of Sant Feliu de Llobregat (municipality also included in the sample for this paper), industrialization seems to have had no major impact on family structure, even the immigration that arrived as factory workers with the time also showed a multigenerational living arrangement. Moreover, Barrera González (1991), conducted a qualitative study to address when the stem family changed in the rural municipalities of the interior of Catalunya, pointing that the change of household structure seemed to appear only in the second half of the 20th century, driven by what seems an ideational change combined with the change of occupational opportunities (new couples refused to live in the parental home, mostly women demanding a new household as part of the marital agreement, and heirs refusing to take the responsibilities associate to the role as other occupational options were more economically profitable).

The evidence in these works shows how the stem family seemed to adapt to the environment, first by changing the rule of inheritance (which started earlier, in the period that could be understood as proto-industrialization, from the mid-18th till the mid-19th century), later adopting industrialization maintaining the household structure, adopting new strategies to the occupational opportunities during the early period of industrialization. Household structure only seems to have been changed later, after the openness of the economic system to the international arena in Spain in the last phase of the Franco regime.

Besides what these mentioned works suggest, only the work of Pujadas-Mora et al. (2018) shows a longitudinal approach to documenting these changes. The goal of this paper is to describe the population changes (in terms od population growth and decline) alongside the household structure in a longitudinal perspective during the period of mid-19th and mid-20th centuries using the Ball Database (Pujadas-Mora et al., 2019).

The next section is dedicated to the historical context and the development of societal changes that affected the five municipalities included in this study.

Historical and economic background:

This study includes data from 1857 to 1955. During that period Spain was marked by significant political, social and economic changes. The political instability was marked by two civil wars: the second Carlist War,

which ended in 1876, and the Spanish Civil War between 1936 and 1939. Along these violent events, the country encountered important political shifts such as the restoration of the Bourbon monarchy (1874-1931), the end of the colonial empire (1898), a short dictatorship (Primo de Rivera (1923-1930) followed by a short period of the democratic republic (1931-1936), and a fascist dictatorship (Franco's regime between 1939 and 1976). These political changes set Spain in a state of economic backwardness, in which proto-industrialization and industrialization appeared late and localized in a few regions, showing great development disparities in its territory. Spain industrialized later than other European regions, only from the mid-19th century in the regions of Catalonia (textile), Basque Country (iron and steel), and Asturias (coal). The rest of the country remained mostly agricultural, and infrastructure, such as the development of Railroads, was mostly developed to connect the industrial areas with the capital, Madrid. Also, the closeness and isolation of the country within Franco's regime limited the possibilities of industrial growth; the dictatorship settled a period of autarchy that set the country in a long economic crisis that lasted till the decade of 1950, when the country started to open up to the international market receiving economic aid from the United States of America (Escosura et al., 2011). Indeed, after 1950, when Spain lived what in the economy has been called "the golden age" (1950 to 1974), when the GDP per capita increased seven times more rapidly than during the previous hundred years, is also in this period when Spain shift form an economic system in which agriculture still represented the 30% of the GDP, to a system in which industry and services predominated (Figure 1 displays the graph of the evolution of the real GDP per capita in Spain, the graph was obtained from (De La Escosura, 2007, p. 149), and Figure 2 shows the share of each economic sector to the Spanish GDP over time, the graph was obtained from (Prados De la Escosura, 2017, p. 9)).

Figure 1. Real per capita GDP, Spain 1850 to 2000. Graph from : (De La Escosura, 2007, p. 149)

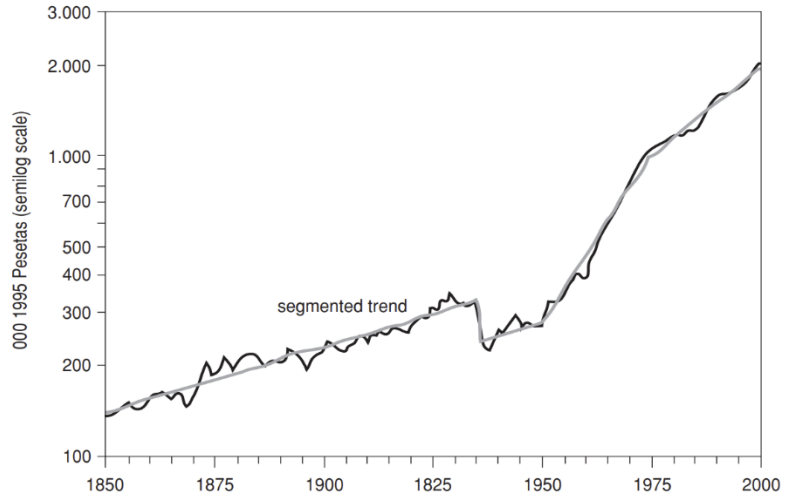
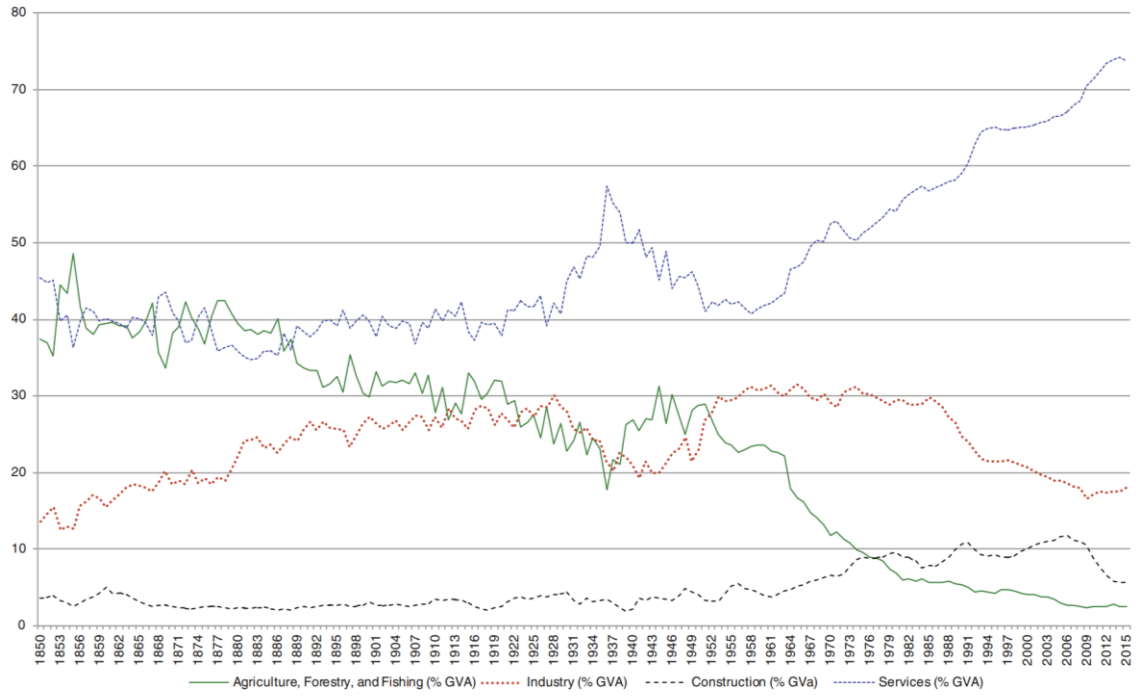


Figure 2 GDP composition from the output side (%) (current prices). Graph from: (Prados De la Escosura, 2017, p. 9)



Regardless of the delay in the Spanish economic development and regional diversity, Catalonia was situated among the five most profitable industrial regions in the sector of textile in Europe (Carreras, 2019; Marfany, 2016; Rosés, 2003a, 2003b; Stanfors and Goldscheider, 2017). From the early 18th century Catalonia (especially Barcelona) developed a wealthy cotton manufacturing sector, showing aspects of proto-industrialization even before the other industrial regions in Spain (Ferrer i Alòs, 2012; Marfany, 2016; Thomson, 1996), characterized by the dispersion of technology sus as the spinning mill. From this early proto-industrialization, the region became an important industrial center during the 19th century (Martínez-Galarraga and Prat, 2016). This higher development level is also associated to areas whit small and medium family farms (as it is the case for the north of the Spanish territory), where land ownership was more equally distributed among the population in contrast with the areas with large land owners, in which the majority of the population were unskilled agricultural day laborers without land property. This differentiation in development from the rest of the Spanish territory is also reflected on levels of literacy and numeracy, Catalonia showed in the period studied an above-average level of numeracy compared to Spain and other south Mediterranean countries as Portugal or Italy (Pujadas-Mora and Pérez-Artés, 2024).

The Baix Llobregat and the five municipalities:

The Baix Llobregat region, situated just southwest of Barcelona, experienced significant economic transformations from the mid-19th century to the mid-20th century. Initially characterized by a predominantly agrarian economy focused on the cultivation of cereals, wine, and olives, the arrival of the railway in the mid-19th century marked a crucial moment in the region's industrialization and modernization. The railway not only improved the connection to Barcelona but also enabled the transportation of goods

and labour, laying the groundwork for the establishment of various industries in the areas of textile, tiles and bricks (Calvo, 1999; Pujola, 1997; Tribó, 1994). During the second half of the 19th century the wool and cotton industry started to expand in the areas close to Barcelona alongside the riverbanks (since the factories used hydraulic power), including the Baix Llobregat (Carreras i Odriozola, 1990; Pujadas-Mora and Pérez-Artés, 2024). By 1861, 21.83% of the total number of spindles and 12.68% of the cotton looms in Catalonia were settled in Baix Llobregat. And by 1930 the numbers had risen to 41.21% and 37.81% (Nadal i Oller and Sudrià, 1992, p. 115; Pujadas-Mora and Pérez-Artés, 2024, p. 873).

Thus, by the early 20th century the textile industry had become a dominant force in the region. As industrialization progressed, towns in the Baix Llobregat experienced urbanization, leading to significant demographic shifts as workers migrated from rural areas (mostly internal migration from other provinces in Catalonia) in search of employment (Rodríguez, 2005; Valverde, 1999). This growth was accompanied by the rise of labour movements, reflecting the increasing socioeconomic disparities in the region (Giral, 1985; i Parcerisa, 2005). The impact of the Spanish Civil War (1936-1939) and subsequent Francoist repression further shaped the region's economic landscape, hindering industrial growth during the early Franco era but setting the stage for recovery and expansion in the post-war period and specially from the second half of the 20th century (Smith and Díaz-Andreu, 2003).

In the agrarian sector, the Baix Llobregat region also show remarkable prosperity associated to the cultivation of vineyards, orchards, fruit trees and rice. This prosperity in the crops production is associated with an early modernization of the irrigation system with the development of two systems of irrigational canals (the "Infanta" canal from 1820 and the "Canal de Riego de la Derecha del Llobregat in 1855), which include coverage for three of the municipalities studied in this paper: Sant Feliu de Llobregat, Sant Vicenç dels Horts and Santa Coloma de Cervelló. (Alba Molina and Aso Pérez, 2008; Pujadas-Mora and Pérez-Artés, 2024, p. 874; Rocamonde Lourido and Sabaté, 2019)

The rise of productivity associated to the irrigational improvements triggered an increase of investment in the region and with, so the Barcelona bourgeoisie and nobility started a process of concentration of property ownership to exploit the land (Codina i Vila, 1995). The high productivity on this sector was only affected by the phylloxera plague, affecting the wine industry in Baix LLobregat between 1878 and 1890, and creating an agrarian crisis that had important demographic consequences (Badia-Miró et al., 2010; Colomé Ferrer et al., 2010; Colomé Ferrer and Valls-Junyent, 2012; Ferrer-Alòs, 2019).

The municipalities included in this study show diverse profiles regarding the process of industrialization and modernization, while Sant Feliu and Sant Vicenç dels Horts present an early industrialization that turned them into industrial towns with population growth and early train connection to Barcelona, Castellví and Collbató remained agrarian though this period, without railway connection and lost population over time. And the fifth municipality, Santa Coloma, is a well know example of an industrial colony, when the

colonia Güell opened in 1890, the municipality gained train connection with Barcelona and increased its small population. Below we describe the specific development of each municipality[7].

Sant Feliu de Llobregat

Sant Feliu de Llobregat emerged as a key industrial centre in the Baix Llobregat region, transitioning from its agricultural roots in the 19th century to a hub of textile and brick production in the 20th century (Calvo, 1999; Padró i Margó, 2005). The establishment of the railway line connecting the town to Barcelona in 1855 is a clear example of this transformation, which facilitates the movement of individuals, materials and goods. In 1961 three textile factories opened in the municipality, Can Bertrand, Can Güell, and Can Corrons, from that moment the textile industry became the backbone of Sant Feliu's economy, producing cotton and wool fabrics (the bigger factory, Can Bertrand, which in a first stage presented a similar structure to an industrial colony, just counting with fewer services to their employers and integrated in the urban centre of the town, opened in 1861 and by 1873 was a pioneer in the implantation of a steam engine, its rapid growth and productivity situated the factory as one of the biggest textile concentrations of Europe, by the end of the 19th century had over 500 employers, most of them women (Padró i Margó, 2005; Torres, 2002)). By 1921 the municipality counted with a total of 625 looms and 25.500 spikes dedicated to the textile work, and the population had increased significantly, growing from approximately 2,500 inhabitants in 1857 to around 5,000. This rapid industrialization not only reshaped the local economy but also contributed to social challenges, including overcrowding and labour unrest, which led to organized workers to advocate for better working conditions (Carbonell Porro et al., 1993; García Larios, 1997). The post-Civil War period saw Sant Feliu navigating the complexities of recovery under Francoist policies, yet it continued to develop as an industrial town well into the mid-20th century. (Argilés and Baix Llobregat, 1994; Carbonell Porro et al., 1993)

Sant Vicenç dels Horts

Sant Vicenç dels Horts experienced a more gradual and delayed transition from agriculture to industrialization than Sant Feliu de Llobregat. The municipality's economy remained primarily agrarian till the first half of the 20th century. In 1860 more than half of the land was dedicated to the wine production, 30% to cereals, and the rest to olive trees, fruits and vegetables. But by 1970 the land dedicated to agriculture had reduced 60%, and the production had changed to fruits and vegetables (GEOTOP, 1982, p. 51). Industries only arrive to the municipality from 1910, with the opening of the textile factory Comamala, that would count with only 16 looms (Rotés, 2011). Two years after, in 1912, the train line arrived, and between 1916 and 1918 three more factories opened in the municipality: the factory Costa Mallol, Camps and Cements Molins, this last one, dedicated to ceramics became very prosperous. Is during the first decades of the 20th century that wealthy families from Barcelona settled in the municipality. At the time some small

[7] Most of the documentation to recreate the history of each municipality was obtain from news and mentions of the municipalities on the publications of the "Centre d'estudis comarcals del Baix Llobregat", accessible from: https://www.cecbll.cat/ ; Most of them included in two publications resulting from the annual didactic meetings of the association in 1994 and 1984. (Argilés and Baix Llobregat, 1994; Carbonell Porro et al., 1993)

workshops (as Cal Manyà) dedicated to metallurgy also opened, but their production would be at small scale till 1960 with the opening of the Miquel Ross foundry. (Alcázar, 1999; GEOTOP, 1982) Is during the decades of 1950 and 1960 that more industries settle in Sant Vicenç dels Horts and the population growth from 3.323 inhabitants in 1950 to 20.181 in 1981. (Argilés and Baix Llobregat, 1994; Carbonell Porro et al., 1993)

Santa Coloma de Cervelló

Santa Coloma de Cervelló underwent significant economic change with the establishment of the Colonia Güell, an industrial colony founded by Eusebi Güell in 1890. This community was designed to support the textile industry, providing housing, social services, and educational facilities for workers, thereby fostering a self-sufficient environment. The industrial colonies were common in Catalonia; indeed, they are understood as an example of the Catalan industrialization. The concept of industrial colony was born in the second half of the 18th century, consisting of a workers village constructed and managed by the owner of the company, the first examples appeared in Great Brittain such as the workers village of Yorkshire or the New Lanark in Scotland. The model of industrial colony expand across France and Italy, but is Catalonia the region that shows the highest concentration of this industrial model in the late 19th century (Rotés, 2011). The adoption of this industrial model in Catalonia was regulated by a law form 1855 that was first addressed to the agrarian exploitations, also later in 1866 with a law that regarded the use of water to power the factories, and finally in 1868 by a law that addressed directly the conditions of industrial colonies. This law granted the factories a tax exemption and a free use of the mineral and water resources if the company settled in a rural area and provided services and infrastructure to the workers. Thus, in the colonial industries the company had to provide materially and socially to the workers, which translated in not only providing housing and public spaces for them, but also a number of services such as schools, hospitals, shops, religious services and social and cultural activities. This law ensured better conditions for the workers of the colonies than to the workers on the other industrial models at the time, this paternalistic approach relied in the pre-existent rural work dynamic of the region and was originated to avoid strikes and revolts among the workers. The social dynamic within the colonies has been often referred as "industrial feudalism", whether in some cases workers experience extreme control and segregation from the non-industrial towns in which the colonies were settled, in others the companies applied a loyalty policy allowing the workers to participate in the social organization of the colony and improving the services and applying family policies to ensure the continuity of the workers (i Closas, 2005; Rotés, 2011).

The Colonia Güell, that opened in 1890 was dedicated to textile and counted with 625 looms and 25.500 spikes in 1923 (Padró i Margó, 2005, p. 75), it had a similar volume of production as the entire municipality of Sant Feliu, counting only with 1.132 inhabitants combining the municipality and the colony (the total number of workers ranked between 500 and 1000 during the period in which the factory was operative). The factory was powered by a steam engine instead of hydraulic power as it was most common for the other colonies in Baix Llobregat. The colony was collectivized and managed by the workers themselves during the Spanish Civil war (1936- 1939) and was returned after to the Güell family. In 1945 the colony

was sold to the family Bertrand I Serra, but the production and organization of the colony was preserved. The colony maintained its traditional production and did not expand during the decade of 1960, moment of fastest urban growth in the region. Is in that decade when the population of Santa Coloma (village) surpass for the first time the population of the colony. In 1976 the industry ceased its activity due to the crisis in the textile sector, the workers got the chance of buying their households, and the factory was sold by sections. In 1990 the colony was declared as site of historical and cultural interest, restored and opened to visitors given its impressive architecture designed by famous modernist architects such as Antoni Gaudí. (Català Massot, 2008; Tarragó i Cid, 2006)

The municipality of Santa Coloma, counted with around 200 inhabitants[8] before the inauguration of the industrial colony and its economy was based on agriculture (wine, olives, cereals…). The arrival of the colony changed deeply the social structure of the town, as well as its process of modernization and growth.

Collbató

In contrast to its industrialized neighbours of the south, Collbató maintained a predominantly agricultural economy throughout much of the 19th and early 20th centuries. Situated at the foot of Montserrat mountain, the town economy revolved around vineyards and olive groves, with some artisan productions. The absence of a direct railway connection limited industrial development and kept Collbató relatively isolated. Modernization in the town occurred slowly, with improvements in road infrastructure and some small-scale quarrying of local stone. In 1925 it was opened in the municipality an artisan workshop of pipe organs (Blancafort, 2006). The town's isolation from major industrial activities as well as the irrigation canals of the south contributed to the gradual population loss that the municipality experienced during the period studied, passing from 791 inhabitants in 1880 to 418 in 1950. As the rest of the region, Collbató experienced population growth at the end of the 20th century due to immigration and its proximity to Barcelona. The immigation from southern Spain arrived in a first moment (Musset, 2019), and international in the last decades, reaching 1.020 inhabitants in 1990 and 4.000 in 2010[9].

Castellví de Rosanes

Castellví de Rosanes maintained a predominantly agricultural economy throughout the period studied, as a matter of fact, the municipality opened its first industrial perimeter in 1980. The economic activity of the municipality was based on viticulture, olive cultivation, and livestock farming. As Collbató, Castellví did not receive a direct railway connection, neither was part of the irrigational canals that increased the agricultural productivity of the provinces in the south of the region. As a result, the town experienced slow modernization, with small-scale improvements in infrastructure (Cabana, 2014). The population remained stable, with about 300 inhabitants during the period studied. As with Collbató, the population starts growing from 1990, mainly due to the construction of residential urbanizations within the territory of the

[8] (S. C. de C. Sitio web del INE: www.ine.es, n.d.)
[9] (C. Sitio web del INE: www.ine.es, n.d.)

municipality but separated from the urban limits of the town. Today the municipality counts with 2000 inhabitants[10].

Data and Methods:

The data used for this paper is census-like data linked at individual level on 5 municipalities of the Catalan region of Baix Llobregat between 1857-1955 using the BALL dataset (Pujadas-Mora et al., 2022, 2019). The database is constructed with a combination of the data that comes from the "padrons" (which are local population registers that were carried by the municipal authorities without a homogenized format but that contained information similar to the modern censuses) with the formal national censuses[11]. The data was harmonized to construct a dataset in which all the municipalities are included. In each municipality individuals have been linked across time providing information about their household composition, marital status and kinship relation towards the head of the household. The BALL Database is built within the project "NETWORKS"[12] by Alícia Fornés from the Center for Computer Vision and Joana Maria Pujadas-Mora from the Center for Demographic Studies, both at the Universitat Autònoma de Barcelona.

Figure 3. Map of Spain, Catalonia, and the region of Baix Llobregat. (Source:(Pujadas-Mora et al., 2019, p. 31))

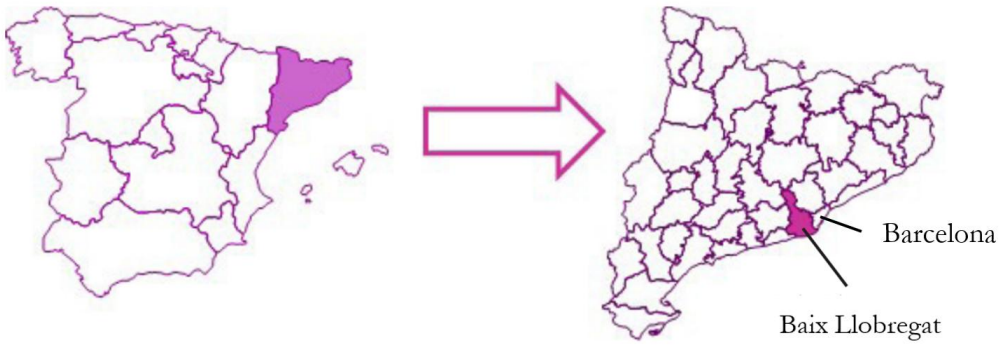


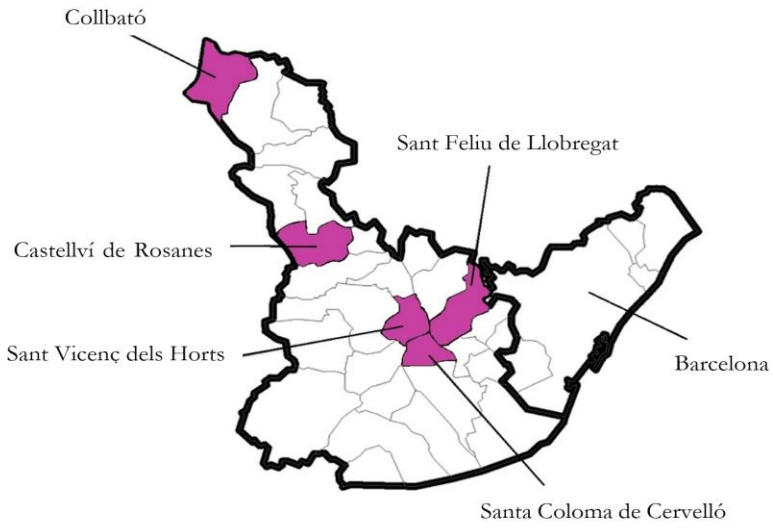
Figure 3 shows the geographical location of the region to which the five municipalities belong to in the Spanish and Catalonian maps. And Figure 4 the specific location of each municipality within the region.

[10] (C. de R. Sitio web del INE: www.ine.es, n.d.).

[11] The national censuses data in the database correspond with the years: 1857, 1900, 1910, 1920, 1930, 1940 and 1950. Municipalities recoded the information at individual level to elaborate an aggregated summary document that included the sum of population in a municipality with information regarding the occupation, literacy, age, civil status… the individual files were typically destroyed once the inform was send to the national authority, but some of the municipalities in Spain, as is the case as the ones included in this study, kept the original files, enabling its digitalization and inclusion in the database.

[12] "NETWORKS": Technology and citizen innovation for building historical social networks to understand the demographic past.

Figure 4 Map of the situation of the municipalities in Baix Llobregat. (From(Pujadas-Mora and Pérez-Artés, 2024, p. 873))



It is important to note here that the objectives that drove the collection of data on these "padrons" (to which we will refer as censuses along the text) were statistical, administrative and fiscal (to know the inhabitants in order to collect taxes, military recruitment, provision of public services and civil registers), thus, this data was not originally collected for academic purposes. Even if the digitalized data was harmonized, we encountered some issues to properly categorize family structure that were due to the different decisions made by the census takers on each year that affected the identification of household structure. The two more relevant issues were: first, that in some years the census takers gave a different household identifier to nuclear families that were living in the same household, mostly separating parents from his young married son and wife and children (this is the case for Castellví de Rosanes in the censuses of 1930 and 1936; Collbató on the census of 1900; Sant Vicenç dels Horts in 1921, 1930, 1950; Sant Feliu 1900 and 1940; and Santa Coloma in 1901 and 1940). And second, the misclassification of the variable identifying the kinship relationship with the head (sons and daughters in law coded as "sons", "daughters" or "others", brothers and sisters coded as "other", or wives coded as "mother"), these misclassifications also appear to be localized in specific censuses, which indicate that in some years the census takers noted more details regarding kinship than others.

These classifications mistakes regarding the household were easily recognizable since once plotted the different household composition of each census one could see that in those specific years almost all the households were coded as nuclear, where in the previous and consecutive years the numbers remained very similar. On a first sight one could think that family structure fluctuated heavily across time, but it was hard to believe that in a period of 5 years almost all extended households disappeared to come back 5 years later. Also, on these years the growth in the number of households didn't match the growth in the population, indicating that the increase of households was a result of splitting the previous households. To correct the classification, since individuals were followed across time, if the individuals were marked in a multiple

household in the census before and/or the census after the anomaly, and their residence address was the same as the other individuals with whom they shared household ID in the previous or consecutive census, we re-coded them again under the same household ID.

And for correcting the kinship classification we used the surnames of the individuals. In Spain individuals have two surnames, the first one as the first surname of the father, and the second as the first surname of the mother. This enables to a better identification of kinship relations of the individuals in the household. Thus, we re-classified the sons and daughters as sons or daughters in law if they were classified as married and didn't share the surnames of the other unmarried sons or daughters in the household. And a similar measure to re-code the individuals coded as "other", changing them as "familiar" if they share at least a surname, or brother or sister if they had the same surnames as the head. Still some individuals appeared only with one surname, thus we keep them on the previous classification of "other".

Table 1 shows the years with available data for each municipality, including the population and number of households in each municipality[13].

Regarding the methods, this is a descriptive study that address the household structure over time. The typical method used for visualizing the data is plotting the census household composition of each year using the classification made by Eugene A. Hammel and Petter Laslett (1974). This classification is the most used to identify household structure in demography, it consist in 5 categories: 1) "Solitaries", including the households of individuals living alone; 2) "No-family", households composed by individuals that don't have a kinship connection, or that is not rooted around a married couple (single individuals living together, either brothers, cousins or unrelated individuals); 3) "Nuclear household", households composed by only one married couple and their unmarried children; 4) "Simple extended family", which include households composed by a married couple and relatives apart from their children (either a married couple and a widowed parent, or grandchildren or unmarried siblings, cousins or uncles of the head); 5) "Multiple household", including at least two married couples (either a couple and the husband or wife's parents, or at least one married sibling and his/her spouse, or other married relatives with their respective family). The presence of service living in the households does not affect the classification (with the exception of households with people living alone), thus categories 2 to 5 may include servants in the household without affecting the inclusion on one or other cathegory. A more precise table for the household classification of Hammel-Laslett is found in the Appendix.

[13] We removed form the sample the institutions of education, that included in the same "household" dozens of children under the care of a few adults (two schools located in Sant Vicent dels Horts between 1906 and 1924, and Sant Feliu del Llobregat between 1935 and 1950). We decided to exclude them because the children in these institutions did not appear in any family household in any other census year, and we didn't wanted oversize the household category in which they would have ben included. In any case their inclusion did not change the overall picture for the household composition.

Table 1. Summary of the census data by year and municipality. Total number of residents and total number of households by year.

	COLLBATÓ		CASTELVÍ		SANTA COLOMA		SANT FELIU		SANT VICENÇ	
YEAR:	Pop.	H.	Pop.	H.	Pop.	H.	Pop.	H.	Pop.	H.
1857	0	0	0	0	0	0	2.471	533	0	0
1866	0	0	357	64	0	0	0	0	0	0
1878	0	0	0	0	0	0	2.747	660	0	0
1880	791	168	0	0	0	0	0	0	0	0
1881	0	0	0	0	0	0	3.002	597	0	0
1889	812	170	0	0	0	0	3.118	645	0	0
1896	686	147	0	0	0	0	0	0	0	0
1900	703	156	0	0	0	0	0	0	0	0
1901	0	0	0	0	542	127	0	0	0	0
1905	665	146	0	0	0	0	0	0	0	0
1906	0	0	0	0	0	0	3.606	804	0	0
1910	808	164	0	0	0	0	3.807	866	0	0
1915	0	0	0	0	0	0	4.329	936	0	0
1916	796	171	0	0	0	0	0	0	0	0
1920	560	141	0	0	0	0	4.352	918	0	0
1921	0	0	0	0	0	0	0	0	2.097	534
1924	745	175	283	60	1.132	259	5.569	1.081	0	0
1925	0	0	0	0	0	0	0	0	1.985	409
1930	531	138	279	63	0	0	6.383	1.458	2.950	783
1935	0	0	0	0	0	0	0	0	3.129	716
1936	525	138	273	62	1.311	323	7.020	1.458	0	0
1940	474	132	281	69	1.218	329	6.720	1.675	2.98	763
1945	425	125	242	47	1.167	307	0	0	0	0
1946	0	0	0	0	0	0	0	0	3.014	790
1950	418	148	268	60	1.222	308	0	0	3.323	1.030
1955	0	0	0	0	0	0	0	0	3.717	1.168
TOTAL	8.939	2.098	1.983	425	6.592	1.653	59.036	11.631	23.195	6.193

Pop. refers to total population in the census; H. refers to the number of households.

As it can be seen, this classification separates the households that could be recognized as Stem between the category 4 and 5, whether it could seem easy to construct a simpler variable to identify only stem family, separated from the multiple households when the rule of only the married heir co-residence in the household is broken (thus, separate the stem family from the cases where another married son or relative lives in the household), it is not such a simple task given the variability that the variable of kinship shows for some years. There is a significant number of individuals to which kinship we could not identify using the surnames, and we included in the category 5 all the households that had at least 3 married people and that contained at least one individual coded as "other", or as "familiar"[14]. This lead to appreciate bigger

[14] For some of the cases one could understand that those familiars were indeed sons or daughters in law, but the identification of those individuals was difficult using the surnames, specially if they had no children of their own in

changes between the censuses among the categories 4 and 5. Also, using Laslett classification provides the advantage of comparability with other similar studies. To facilitate the interpretation of stem family system, we would analyze as stem family both categories 4 and 5.

Traditionally the household composition has been addressed taking the household as unit of study, by presenting tables with the number of households on each category, and percentage of the total number of households that they represent. We acknowledge that it is an easy approach to identify the family system in census data and makes easier the comparison between populations, but, agreeing with the argument presented by Kertzer (Kertzer and Barbagli, 2002, p. 68 Ch. 2) we consider that this approach may not properly capture the real household structure of the population. Extended and multiple households would be bigger than nuclear or simple ones, thus, presenting the household as unit of analysis instead of the individual won't tell us the amount of population living in each type of household. Also, this approach may not capture well the population growth or loss, since a nuclear household of 5 (a couple and 3 children for example) would still count as one household if children emancipate and only the couple remain in the household; in the same case, an extended household of 5 individuals (the couple, 2 children, and the wife of the first son, as example) would count as one household, even if other family members (for example, unmarried first cousins of the heir) would move into the household. Thus, to have a more realistic approach to how many people lived in different households, we take the individual as unit of analysis. This approach allows to visualize population growth and shows a more realistic image of the percentage of population that were living in each type of household.

Thus, the method that we use to describe the data is by plotting in a bar graph the population by census year and indicating in different colors the household type in which each percentage of the population lives. Each bar represents the amount of population and each color in the bar represents a different household type. By breaking down the population into these distinct family types, the graphs provide a comprehensive view of how household dynamics have evolved in each municipality alongside with the population decrease and growth, offering insights into the broader social and demographic changes that have occurred. The use of stacked bar graphs facilitates an intuitive understanding of both the absolute population size and its internal division by family type, which makes easier the analysis of temporal variations in household structure.

The appendix include the traditional approach with the tables with the number and percentages of households in each category by year, and the graphs representing the percentage of households of each type by municipality.

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the household. The surnames could also lead to cousins and nephews, or brothers in law. To avoid misclassification of kinship, we maintained the cases hard to identify as "familiar".

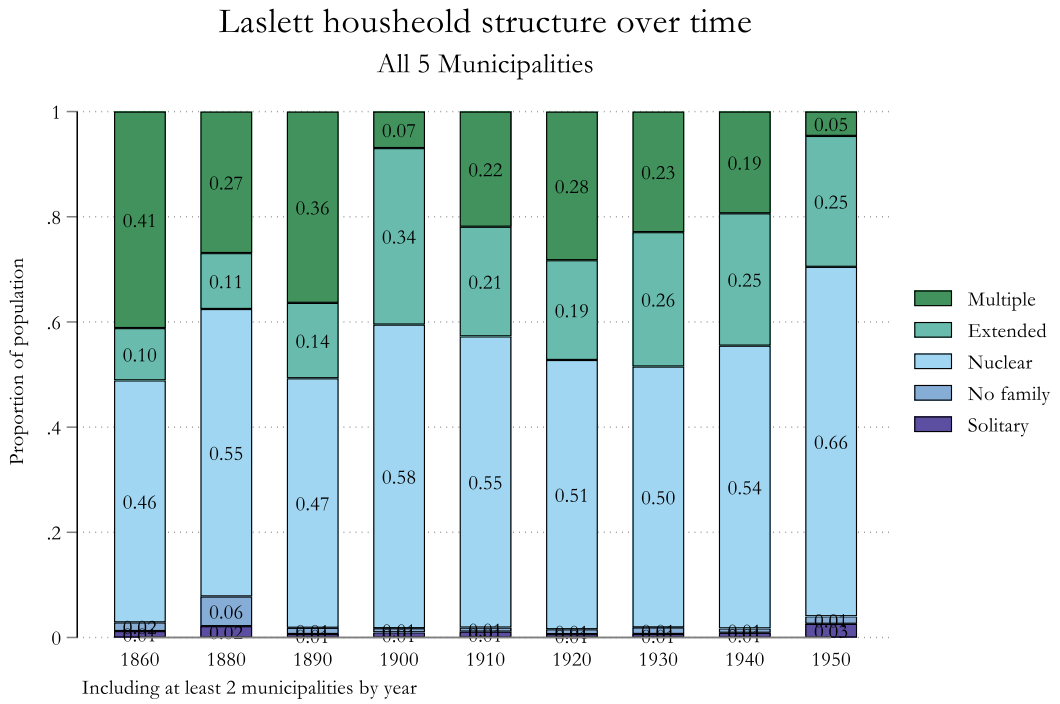
Analysis:

Before showing the data, its relevant to highlight some important dates in the process of development of the municipalities under study. The timeline presented below serve as a summary of the section dedicated to the specific context of each municipality:

- **1855**: Railway connection with Sant Feliu de Llobregat.
- **1860s**: Textile industry begins in Sant Feliu de Llobregat.
- **1870s-80s:** Phylloxera vineyard crisis.
- **1890**: Textile industry established in Santa Coloma de Cervelló (Colonia Güell).
- **1912**: Railway line built to Santa Coloma de Cervelló (Colonia Güell) and Sant Vicenç dels Horts.
- **1912-18**: Brick and textile industries open in Sant Vicenç dels Horts.
- **1936-39:** Spanish Civil War.

Graph 3.1. shows the change in the family structure over time. The graph aggregates data of at least two municipalities in each year and shows the percentage of population in each household type by year. With this graph we can appreciate the evolution of household structure over time, but not the population growth (as there is great variation between the population size of each municipality, we present in this graph the aggregate proportions on each household type on the population included in each time cut). As we can see, besides some fluctuations in 1880 and the first decade of the 20th century, household structure seems to be rather stable, between 40% and 45% of the population was living in extended households till the decade of 1950. Is only during the last observed years that the population living in extended households reach the lowest point with a 30% (which corresponds to 22% of the households if we look at the equivalent table for the proportion of households in the Appendix). It is interesting to note that this stability on the proportion of population in Stem households seems to agree with the argument presented by Borderías and Ferer-Alós (2017), even when the migrant families could appear in a first moment as nuclear households, they seem to adopt the traditional extended structure over time. The immigration that the municipalities received during the period studied before 1960, (in Sant Feliu, Sant Vicent and Santa Coloma), was regional, coming from other areas within Catalonia in its majority (and thus, where Stem family was also the norm), with a small proportion coming from southern Spain (in the south, nuclear households with egalitarian inheritance was the norm, the number of immigrants from other Spanish regions only raised significantly from 1950).

Graph 1. Proportion of population living in each household type over time, data aggregates the 5 municipalities, at least 2 in each year.



Thus, what we see in this graph seems to be stability rather than a gradual change. Knowing that the biggest demographic and economic changes only happened after 1950, and that the current numbers of extended households are below 5% (Iacovou and Skew, 2011) we could interpret this decrease of population living in extended households in 1950 as the beginning of the fall of the stem system.

To this general view of the data follows the analysis of each municipality. We present first the municipalities with industrial growth, Sant Feliu de Llobregat and Sant Vicenç dels Horts, then Santa Coloma del Cerveró (example of industrial colony), and finally rural municipalities of Collbató and Castellví de Rosanes.

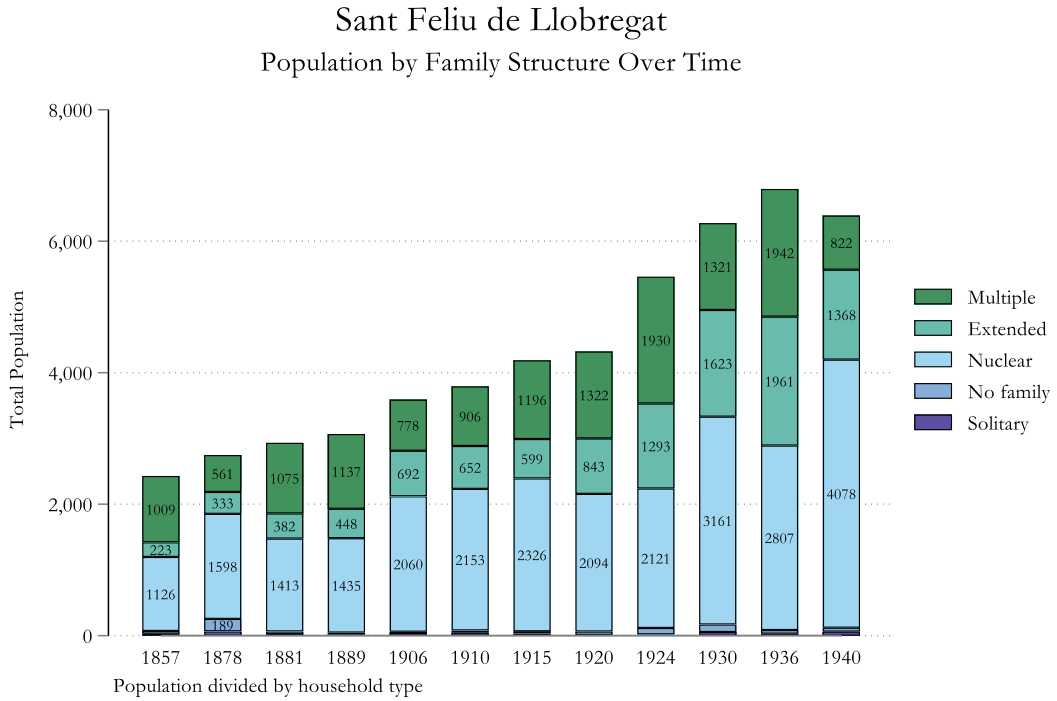
Sant Feliu de Llobregat

Graph 2 shows the population change and the amount of population living in each household type in Sant Feliu de Llobragat between 1857 and 1940. The complementary Table 2 shows the percentage of population in each household type.

We can see that the population grew at a gradual rate till 1936 with a small pause for the censuses of 1881 and 1889, probably due to the agrarian crisis on the vineyard sector, and the loss of population in the census of 1940 which we understand as a result of the Spanish civil war. But over time, with some small fluctuations, the household structure seems to have been relatively stable with about 50% of the households with a nuclear structure and 50% with a Stem one, people living alone and in no-familiar houses seems to be the minority, with about 2% of the population in each census. Only in the census of 1878 there appear

to be a significant 7% of the population living in households with no family[15]. There seem to be some relevant variances over time, from 1906 to 1915 the data show a lower proportion of people living in extended households, around 40% compared to above 50 % of the previous years. Then we see a bigger increase of the population in 1924 (almost 1000 people), which could be attributed to a rise of immigration, but contrary to what one could think, rather than seeing an increase of population living in nuclear or no-family households, we see an increase of multiple households (category 5, which could indicate that the new population could have been either moving with extended family, or most likely living as lodgers renting a room on family households). Then in the following census, in 1930, we see that the population increase by 800 people, and the percentage of stem households decrease by 10%, increasing to 50% the percentage of nuclear households. Again in 1936, population the percentages reverse back to a similar distribution as 1924, even after another increase of the population of 700 people. What is interesting is that in the last observation, in the post-war period (1940), the number of individuals living in Stem households decrease, reaching the lowest with only 34%. Being this is the last observation, its hard to identify if this is the beginning of the fall of the Stem household structure or rather another fluctuation on the pattern of reproduction of the stem family. Also, this observation may include the close effects of the civil war (as we see in the first decline in population on the municipality since 1857), thus, reading this change in household structure as a pattern of decrease of Stem family may not be appropriate.

Graph 2. Evolution of the population by family structure and year. Sant Feliu de Llobregat.



[15] This could be due to migration of workers to the factories that later settled familiar households, or a miscoding of their real living arrangements. More than half of these individuals were not identified over time or were missing information relative to their surnames, making impossible to track them in the previous or following census in order to re-classify them.

Table 2. Percentage of population by household type in Sant Feliu de Llobregat.

SANT FELIU DE LLOBREGAT

CENSUS YEAR	Household type 1	2	3	4	5	Total
1857	1.19	1.73	46.36	9.18	41.54	100.00
1878	2.40	6.88	58.17	12.12	20.42	100.00
1881	0.75	1.43	48.16	13.02	36.64	100.00
1889	0.49	1.04	46.79	14.61	37.07	100.00
1906	1.11	0.56	57.38	19.28	21.67	100.00
1910	1.21	0.90	56.79	17.20	23.90	100.00
1915	0.81	0.76	55.55	14.31	28.56	100.00
1920	0.28	1.18	48.45	19.50	30.59	100.00
1924	0.37	1.78	38.84	23.68	35.34	100.00
1930	0.88	1.83	50.37	25.86	21.05	100.00
1936	0.44	0.81	41.31	28.86	28.58	100.00
1940	0.97	0.92	63.83	21.41	12.87	100.00
TOTAL	3.72	1.63	56.96	17.33	20.37	100.00

It is important to highlight here, that the household marked as Extended, the category 4 in the Laslett classification, shows only households that are composed by Stem family households (a couple living with at least one parents of one of the spouses; a couple living with at leas one married son or daughter; or a couple living with unmarried extended family such brothers, cousins or uncles). The high persistence of this extended households show the resilience of the Stem family system in its most basic form. Whereas the category 5 includes "others" and married "familiars". Given the complexity of the data source, it's hard to address with full reliability that all the individuals coded as "others" are not family members previously living in the household, yet the high increase of the multiple households that the data show especially in the years with higher population increase could be interpreted as a way to accommodate the incoming immigrants in the municipality as lodgers in the households of the municipality, especially if there was low availability of private independent housing.

Sant Vicenç dels Horts

In the graph 3 we see the population growth and household structure of Sant Vicenç dels Horts between 1921 and 1955, and in the table 3 the percentages of the population living in each household structure as displayed in the graph.

As it appears, the data available for this municipality starts from 1921, after the main industries settled in the municipality and the opening of the railway, but we see also 15 years further in time that we could with the case of Sant Feliu. We see that in this case the population does not appear to grow as gradually as we see in Sant Feliu, with some small fluctuations the population appear to grow in two periods, from 1925 to 1930 and from 1950 to 1955. The proportion of people living in Stem households (categories 4 and 5, extended and multiple) appears to be lower in this municipality, but still persistent over time, with an average

of almost 30% of the population in the overall period covered, complementarily, the proportion of nuclear households also appear to be bigger, being close to 70% in overall.

The data also show some fluctuations, but a pattern of decrease of the Stem households is more visible than in the case of Sant Feliu. The nuclear household that seemed to predominate already form 1921, show a clear rising pattern, only reduces in 1925, 1935, and 1955, but in this last observation we see that instead of increasing the Stem household structure, what increases is the number of individuals living alone or in non-familiar households, which could be interpreted as a change towards the modern household structure linked to the changes of the "golden years" of economic development that occurred in the second half of the 20th century. We not only see a gradual increase of the proportion of individual living in nuclear households, but in the censuses of 1950 and 1955, there is an increase of people living alone with no precedent in the municipality.

Equivalent to this pattern we see the reduction on the proportion of the population that lived in Stem households, only in 1935 we see a higher number of individuals living in extended or multiple households than in nuclear ones (50% versus a 48%). Even though, the rise in this proportion is mainly due to the increase on the people living multiple households (category 5). Which again could be interpreted as individuals renting a room in family houses, even though this interpretation may not be as supported as it was in the case of Sant Feliu, since there does not appear to be linked to an increase of population in the municipality. Yet, from 1940 we see again a decrease in population, most likely due to the effects of the Spanish civil war, this detriment in the population growth is visible also in the census of 1946.

In overall, Sant Vicenç dels Horts present a more clear pattern of dissolution of the Stem household structure, yet showing high percentages of population living in this household type, which at its lowest still present a 20% of individuals.

Graph 3. Evolution of the population by family structure and year. Sant Vicenç dels Horts.

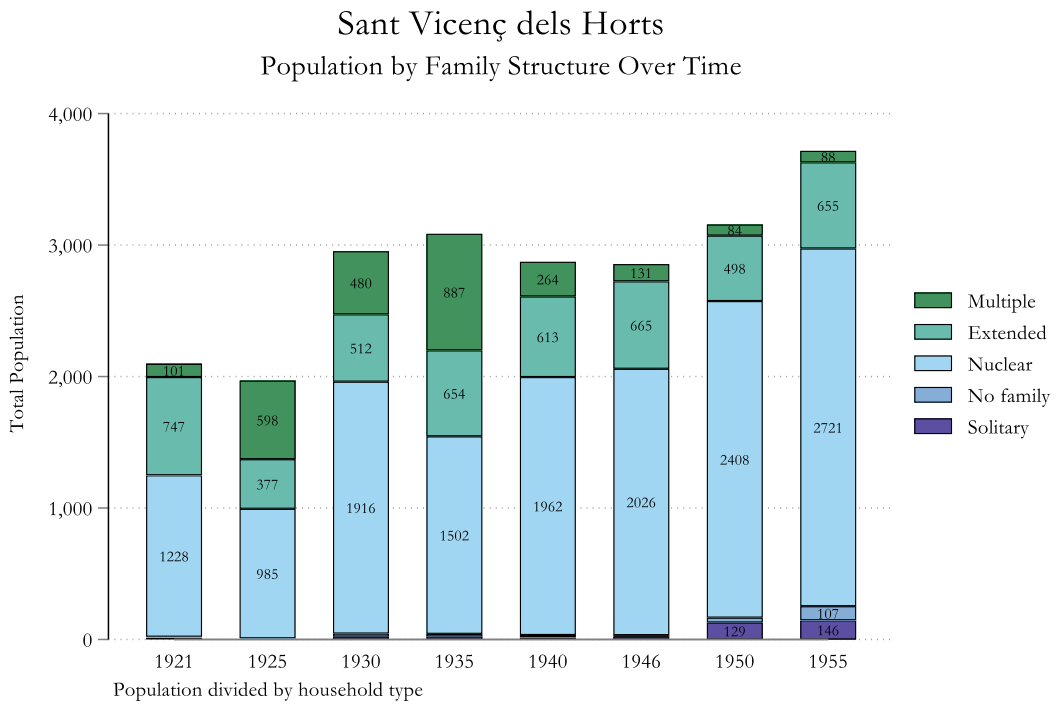


Table 3. Percentage of population by household type in Sant Vicenç dels Horts.

SANT VICENÇ DELS HORTS.

CENSUS YEAR	Household type 1	2	3	4	5	Total
1921	0.72	0.29	58.56	35.62	4.82	100.00
1925	0.20	0.25	50.03	19.15	30.37	100.00
1930	0.75	0.78	64.88	17.34	16.25	100.00
1935	0.75	0.65	48.67	21.19	28.74	100.00
1940	0.59	0.59	68.29	21.34	9.19	100.00
1946	0.77	0.39	70.96	23.29	4.59	100.00
1950	4.09	1.17	76.30	15.78	2.66	100.00
1955	3.93	2.88	73.20	17.62	2.37	100.00
TOTAL	1.85	1.00	67.80	17.74	11.61	100.00

Santa Coloma de Cervelló

Below in graph 4 and table 4 is displayed the population growth and household structure for the municipality of Santa Coloma de Cervelló from 1901 to 1950.

The data starts from 1901, eleven years after the opening of the Colonia Güell, and eleven years before the inauguration of the train station. We see that the population growth only took place within this period, which is due to the increase of the population of the colony after the railway arrival to the town in 1912. The population reach its peak in 1936, decreasing during the post-war period, and increasing timidly in 1950, after the change of ownership of the colony from the Güell family to the Bertrand. We see that the

limited population growth seems to be linked to the capacity of the colony, that never went though an extension of its facilities. The municipality itself does not appear to have developed any other industries or economic activities, even after the arrival of the railway, setting the municipality in a point of equilibrium between two communities, the colony (counting with around 1000 workers), and the inhabitants of the village (around 200 people).

We see that in overall most of the population lived in nuclear households across all the censuses, being 1901 the year with the higher percentage (74%), and the post-war census of 1940 being the second, with a 62% of the population living in nuclear households. The other years the percentage of individuals living in nuclear households remained close to 55%. Knowing that the population of the municipality outside the colonia was around 200 individuals (less than half of the sample for 1901) and that in the early 1900 the proportion of stem households in Collbató and Sant Feliu where around 55%, if we attribute the same population structure to the municipality of Santa Coloma, we could deduce that the high proportion of nuclear households of the census of 1901 was due to the new households established in the colony. Just 23 years later, the proportion of nuclear households had reduced from 74% to 55%, indicating that the population in the colony adopted the Stem household structure (which is not surprising since most of the individuals of the colonies where originally from Barcelona and Tarragona). In 1950, contrary to what we saw in the example of Sant Vicenç, is the year in which we see a higher proportion of population living Stem households, reaching a 48%. This indicates that the close paternalistic industrial system of the colony preserved and reinforced the reproduction of the stem family better than the conventional industrial system.

Graph 4. Evolution of the population by family structure and year. Santa Coloma de Cervelló.

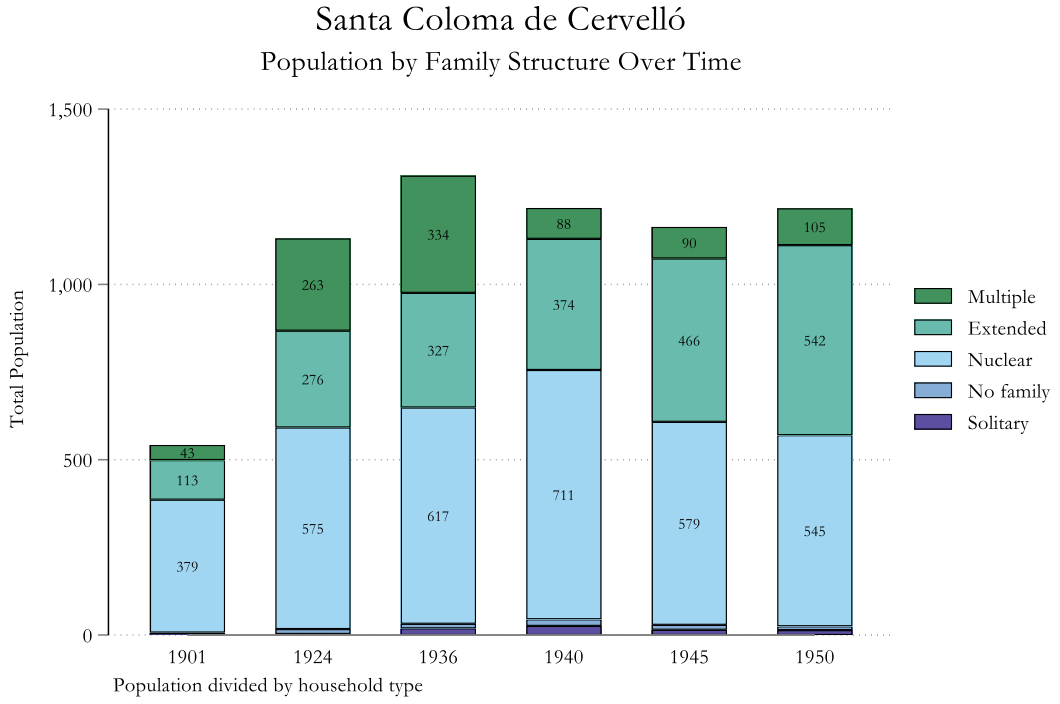


Table 4. Percentage of population by household type in Santa Coloma de Cervelló.

SANTA COLOMA DE CERVELLÓ

CENSUS YEAR	Household type 1	2	3	4	5	Total
1901	1.57	1.57	74.80	16.54	5.51	100.00
1924	1.16	1.16	55.21	22.78	19.69	100.00
1936	5.88	0.93	55.11	19.81	18.27	100.00
1940	7.90	1.82	62.31	22.49	5.47	100.00
1945	4.90	1.31	55.88	31.37	6.54	100.00
1950	4.56	0.98	52.77	34.85	6.84	100.00
TOTAL	4.78	1.27	57.78	25.50	10.66	100.00

Collbató

Graph and table 5 show the evolution of the population by household type in Collbató between 1880 and 1950. As we can see, the municipality loss almost half of the population during these 70 years, from almost 800 individuals in 1880 to 400 in 1950. We see the first population drop in 1896, which could be a consequence of the phylloxera crisis at the endo of the 19th century, and then recovered in 1910. We can also see a sudden population drop in 1920, which is likely to be a mistake by the census taker, since most of the individuals missing in that year appear in the census of 1916 and 1924. In 1930 is when we start seeing the clear path to population decline, when population drop to 500 inhabitants, gradually decrease to 400 in 1950. We can also see that the household structure seems to fluctuate over time, with periods with higher proportion of nuclear households followed by periods with a reduction of it. In overall we could see a decrease path on the proportion of population that live in Stem households over time, even if this path is not as clear as it was in the case of Sant Vicenç.

Graph 5. Evolution of the population by family structure and year. Collbató.

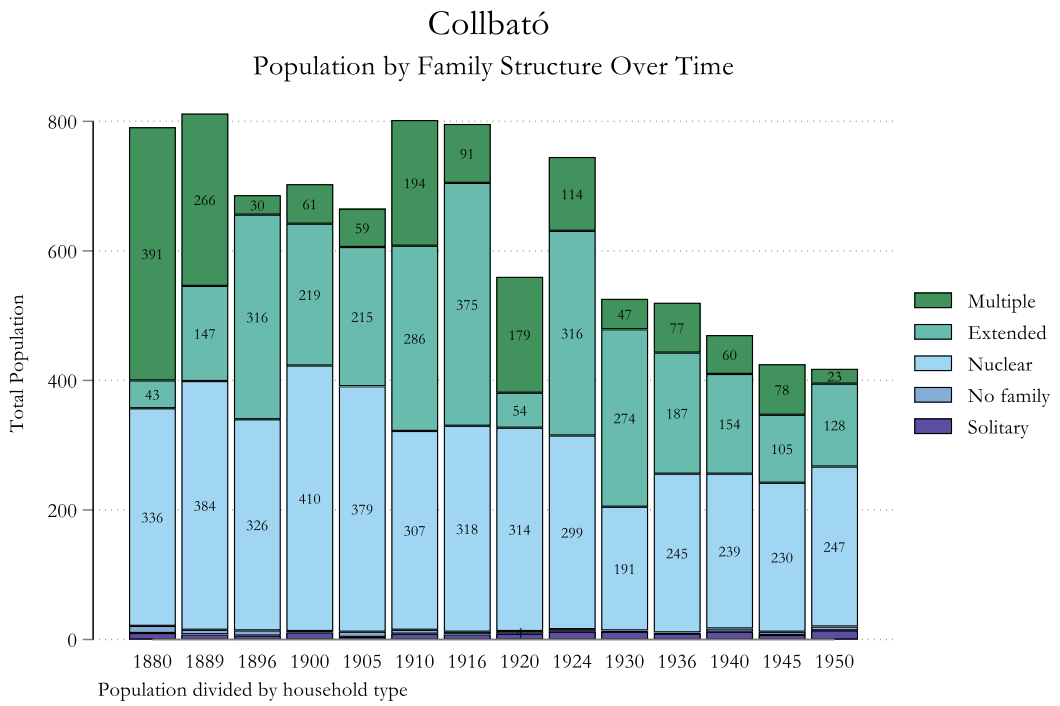


Table 5 Percentage of population by household type in Collbató.

COLLBATÓ

	Household type					
CENSUS YEAR	1	2	3	4	5	Total
1880	1.26	1.39	42.48	5.44	49.43	100.00
1889	0.99	0.86	47.29	18.10	32.76	100.00
1896	0.87	1.17	47.52	46.06	4.37	100.00
1900	1.56	0.28	58.32	31.15	8.68	100.00
1905	0.60	1.20	56.99	32.33	8.87	100.00
1910	1.12	0.75	38.28	35.66	24.19	100.00
1916	1.01	0.50	39.95	47.11	11.43	100.00
1920	1.61	0.71	56.07	9.64	31.96	100.00
1924	1.61	0.54	40.13	42.42	15.30	100.00
1930	2.28	0.38	36.31	52.09	8.94	100.00
1936	1.73	0.38	47.12	35.96	14.81	100.00
1940	2.55	1.06	50.85	32.77	12.77	100.00
1945	1.65	1.18	54.12	24.71	18.35	100.00
1950	3.35	1.44	59.09	30.62	5.50	100.00
TOTAL	1.47	0.83	47.37	31.61	18.72	100.00

From 1880 to 1896 we see that over 50% of the population live in Stem households (categories 4 and 5), then in the following two censuses, in 1900 and 1905, the proportion decreases by 10% to around 40% of the population living in Stem households. Then, from 1910 till 1936, the proportion rise again to around

60%, and from the post-war period we see a gradual decline from 44% to 35% as well as an increase on the proportion of people living alone. Is in 1950 when it reaches its lowest proportion of individuals living in Stem households, and the highest proportion of individuals living alone.

Castellví de Rosanes

Graph and table 6 show the evolution of population and household structure for Castellví de Rosanes between 1866 and 1950. We see a decline in population from 350 individuals in 1866 to 240 individuals in 1945, and a small increase to 268 in 1950. In this municipality we see a first moment of population decrease in a period of 50 year from 1866 to 1924. This is the smaller of the municipalities included in this study, with less than 300 inhabitants. We will comment using the percentages as we presented the other municipalities, but given the size of the sample, a change of 20 individuals already represents almost 10% of the sample, thus the interpretations of the changes in this municipality should have into account the big variations that account for the sample size.

In general terms we see a high persistence of the Stem family system (between 40 and 50% of the population appear to live in this household structure over the time studied), this of course is expected given the characteristics of this small rural village. Yet we see what appears to be a tendency of increase of the nuclear households from 1925 till 1936, rising gradually from 50% to 61%, and from the post-war an opposite tendency of decrease of this household structure, from 54% in 1940 to 41% in 1950. Contrary to what we observed in the case of Collbató, in the post war period there appear to be a reinforcement of the Stem household structure rather than the shift towards the nuclear household. Yet we see that tendency is mitigated in 1945, year that shows less population that 1940 and 1950, so rather than a tendency of decrease from 1940, we could interpret it as a tendency of increase if we depart from 1945, since we see that there were indeed 23 more people living in nuclear households in 1950 than in 1945, also one less people living in a stem household.

The tendencies that we can identify are indeed very small having into account the small sample size (only around 60 households in the entire municipality). The variance in the number of households is indeed very small, between 47 counted in 1945, and 69 counted in 1940. The gap between these two years (also counting with the fact that individuals that appear in both 1940 and 1950 but not in 1945, indicates that there may be a mistake in year 1945, in which those individuals were not included in the census by the census taker.

In any case, in overall we see that in this municipality, household structure seems to be pretty stable over time, nothing unexpected given that the municipality did not experience any drastic population growth or decline between 1924 and 1950 and it remained an agrarian village.

Graph 6. Evolution of the population by family structure and year. Castellví de Rosanes.

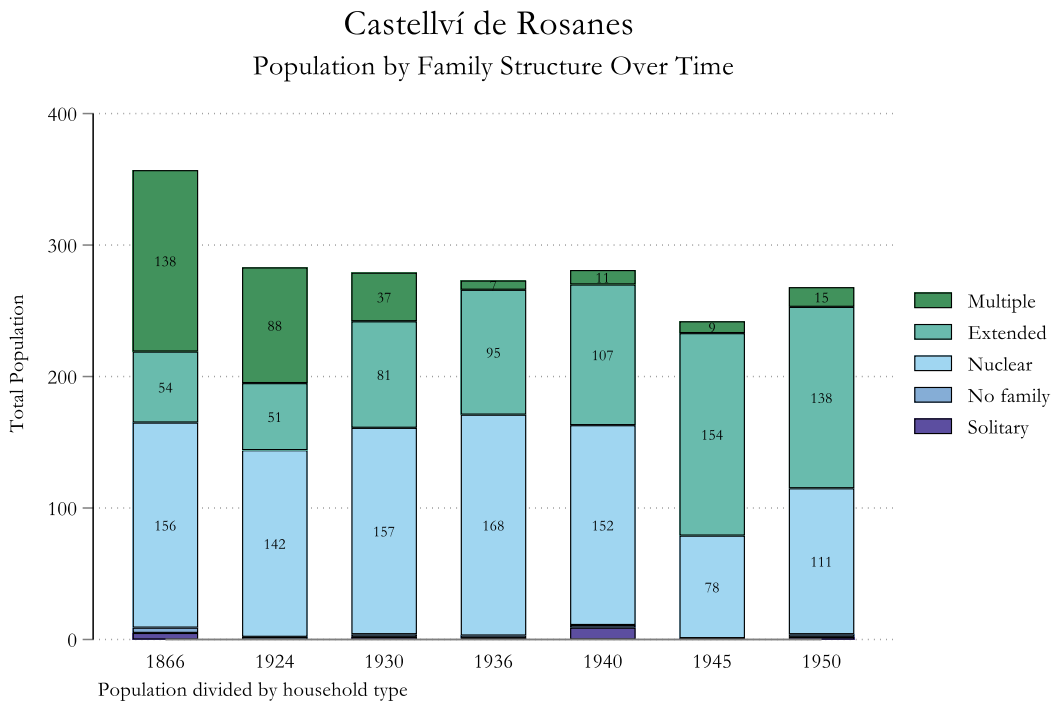


Table 6. Percentage of population by household type in Castellví de Rosanes.

CASTELLVÍ DE ROSANES

	Household type					
CENSUS YEAR	1	2	3	4	5	Total
1866	1.40	1.12	43.70	15.13	38.66	100.00
1924	0.00	0.71	50.18	18.02	31.10	100.00
1930	0.72	0.72	56.27	29.03	13.26	100.00
1936	0.37	0.73	61.54	34.80	2.56	100.00
1940	3.20	0.71	54.09	38.08	3.91	100.00
1945	0.41	0.00	32.23	63.64	3.72	100.00
1950	0.75	0.75	41.42	51.49	5.60	100.00
TOTAL	1.01	0.71	48.61	34.29	15.38	100.00

Overall results

In overall, the municipalities seem to have preserved the extended household structure that characterize stem family over the first phases of industrialization. Indeed, the percentage of people that lived in these extended and multiple household structures does not seem to vary significantly on industrialized contexts compared to rural ones. The stem household structure survived even starting the second half of the 20th century, being only from 1950 when we can start appreciating a small change on the patterns that seem to lead to the nuclearization of the household arrangements.

With the fluctuation of the data over time and accounting for population growth and loss, we can see that the natural life course of the household presents some adaptations to the political and economic contexts.

The changes on household structure does not appear to be abrupt, and rather slow adaption dynamics that difficult the task to identify irreversible changes, is only because of the current data (that indicates the almost extinction of the multigenerational household) that the tendencies of the 1950s can be addressed as the beginning of the fall.

With the data presented, it can be set that the Stem family system seem to have favoured the process of industrialization, and also to have adapted to the new industrial system maintaining the household structure for quite long, which indicates that this medieval family system, at least in Baix Llobreagat could be addresses as post-industrial and set its fall only when the country opened to the global market and invested in the service sector in the late second half of the 20th century.

Conclusions and discussion.

In this paper we have focused on the arguments regarding the change of the pre-industrial Stem family system, the traditional argument which address that this family system should be incompatible with industrialization (Goode, 1970; Minge-Kalman, 1978; Stanfors and Goldscheider, 2017), and thus, we should expect a later adoption of industrialization and the breakdown of the family structure once industrialization is adopted. While a more recent argument suggest that Stem family system not only would be more resilient to industrialization but also play a greater role in its early adoption (Borderías and Ferrer-Alòs, 2017; Marfany, 2010; Nimkoff, 1960; Rao, 1973).

Through the descriptive analysis of 5 municipalities over 100 years on one of the first industrialized regions in Spain, we have provided evidence for the second argument, showing how the municipalities with Stem family systems not only preserved its structure during the early industrialization period, but till the mid-20th century. Also, the family structure seems to have played an important role in the process of industrialization, as it can be seen in the example of the industrial colony, where the Stem household structure seems to survive without showing decrease tendencies even in 1950. Whereas its true that the clearer pattern of decrease of this household structure is shown in the case of Sant Vicenç, municipality that present a conventional industrial system. The case of Sant Vicenç can be interpreted as the effects predicted by the traditional argument, meaning that the conventional industrial system would eventually change the family structure towards the nuclear household. But still the percentages of people still living in the Stem households by 1955 are over 20%.

Attending to the result of this study, we agree with the argument presented by Andrés Barerra Gonzalez (1990, pp. 365–377 Epílogo), whereas he focuses on the population loss and fall of the stem family in the small rural villages of the Catalan Pyrenees, we believe that the fall of the stem family in the Industrial areas such as Baix Llobregat are due to similar if not the same reasons that led to the fall of the stem family in the rural context that he studied. The interviews that he present highlight that the reproduction to the heir system becomes a challenge specially after 1960, when the agrarian exploitations do not seem as appealing

to the young generations and prefer to emigrate, and for those who stay (even the second-born sons taking the role of the heir when their older brother refuses its position) set some condition to the parents, as setting an independent household after marriage. This indicates that apart from the increase of the labor options available to the new individuals, there appear to be a clear ideation change that led to the change on household composition, and with so the eventual fall of the Stem family system. If that is the case, we could address that this ideational change is what led the fall of the Stem system also on the industrial regions situated closer to Barcelona. This approach would also agree with the other analysis of the change of the Stem family that focuses on inheritance rather than in household structure, as is the case of the work of Ferrer I Alós (2005) regarding the first documented changes towards a more equal distribution of inheritance taking place already in the second half of the 18th century.

This study also shows that by looking at the individual level rather than the household level, we can gain a better picture of how resilient this family system was, over 50% of the population experienced that household structure, whereas looking at household level, it shows proportions between 20 and 30%, which could let us think that this system was weaker than it was.

Moreover, when looking also at the dynamic fluctuations of the household structure over time, it's necessary to highlight the potential risks of using micro census data looking only at one moment in time. If we account for data at the household level and look at the peak of a trend that is cyclical, or part of the natural household life course, we could miss classify a census as an example of a weak Stem system or as an example of the "fall" of the system, when it is just in a moment of adaptation.

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Appendix :

1. Hammel-Laslett classification of households:

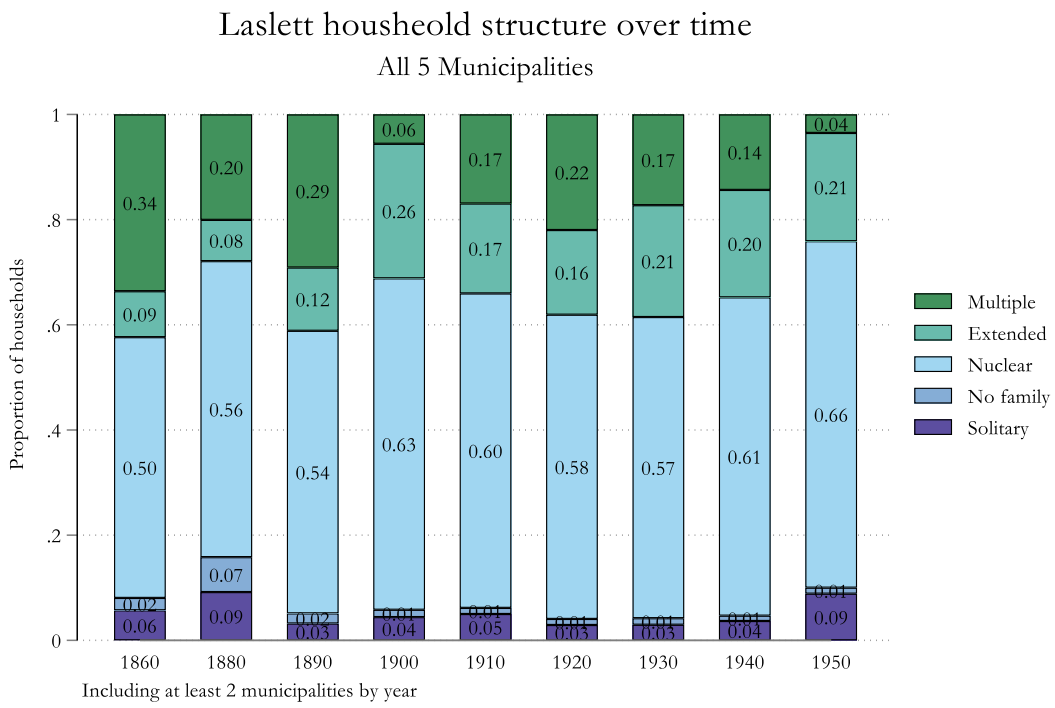
Table AP.3. 1 Classification of households by Peter Laslett and E.A.Hammel ((Hammel and Laslett, 1974, p. 96)

Composition of Households—SAMPLE CLASSIFICATORY TABLE

Categories	*Classes*	*Total percent*
1 Solitaries	1a Widowed 1b Single, or of unknown marital status	
2 No family	2a Coresident siblings 2b Coresident relations of other kinds 2c Persons not evidently related[1]	
3 Simple family households	3a Married couples alone 3b Married couples with child(ren) 3c Widowers with child(ren) 3d Widows with child(ren)	
4 Extended family households	4a Extended upwards 4b Extended downwards 4c Extended laterally 4d Combinations of 4a-4c	
5 Multiple family households	5a Secondary units UP 5b Secondary units DOWN 5c Secondary units lateral 5d *Frérèches* 5e Other multiple family households	
6 Incompletely classifiable households[1,2,3]		
	(continued next page) TOTALS	100%

2. Proportion of households All municipalities combined:

Graph AP.3. 1.Proportion of households of each type over time, data aggregates the 5 municipalities, at least 2 in each year.



3. Proportion of households in Collbató.

Graph AP.3. 2 Proportion of households of each type by year in Collbató.

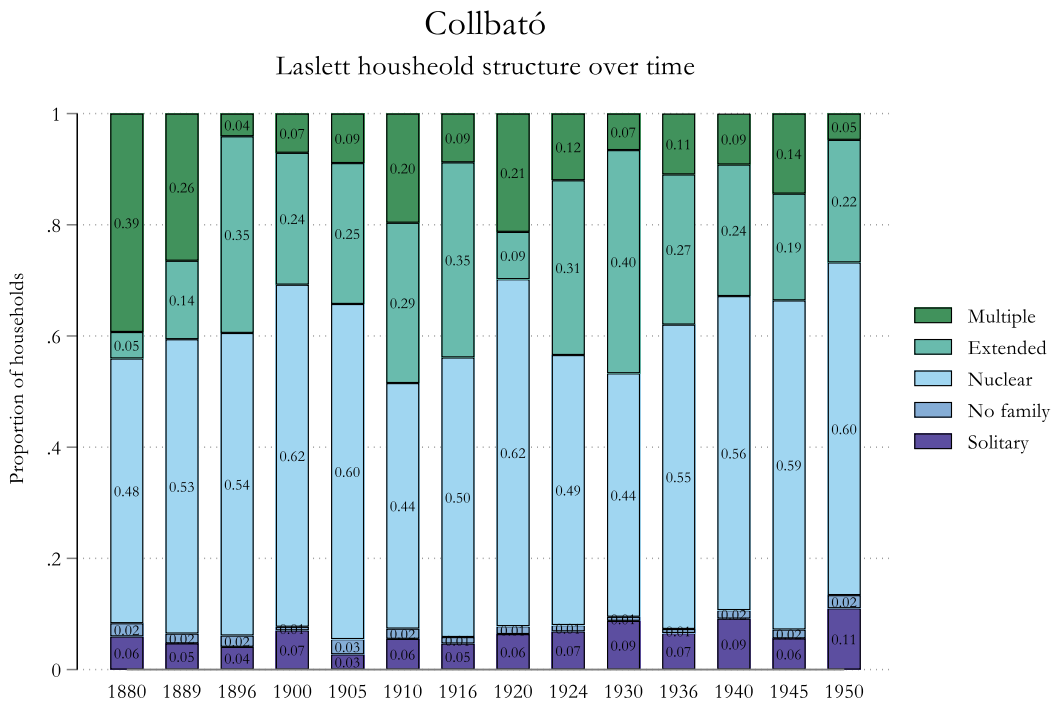


Table AP.3. 2 Households by year and family type. Collbató.

	Household type					
Census year Collbató	1	2	3	4	5	Total
1880	10	4	80	8	66	168
	5.95	2.38	47.62	4.76	39.29	100.00
1889	8	3	90	24	45	170
	4.71	1.76	52.94	14.12	26.47	100.00
1896	6	3	80	52	6	147
	4.08	2.04	54.42	35.37	4.08	100.00
1900	11	1	96	37	11	156
	7.05	0.64	61.54	23.72	7.05	100.00
1905	4	4	88	37	13	146
	2.74	2.74	60.27	25.34	8.90	100.00
1910	9	3	72	47	32	163
	5.52	1.84	44.17	28.83	19.63	100.00
1916	8	2	86	60	15	171
	4.68	1.17	50.29	35.09	8.77	100.00
1920	9	2	88	12	30	141
	6.38	1.42	62.41	8.51	21.28	100.00
1924	12	2	85	55	21	175
	6.86	1.14	48.57	31.43	12.00	100.00
1930	12	1	60	55	9	137
	8.76	0.73	43.80	40.15	6.57	100.00
1936	9	1	75	37	15	137
	6.57	0.73	54.74	27.01	10.95	100.00
1940	12	2	74	31	12	131
	9.16	1.53	56.49	23.66	9.16	100.00
1945	7	2	74	24	18	125
	5.60	1.60	59.20	19.20	14.40	100.00
1950	14	3	76	28	6	127
	11.02	2.36	59.84	22.05	4.72	100.00

Total	131	33	1124	507	299	2094
	6.26	1.58	53.68	24.21	14.28	100.00

First row has *frequencies,* and second row has *row percentages*

4. Proportion of households Castellví de Rosanes.

Graph AP.3. 3. Proportion of households of each type by year in Castellví de Rosanes.

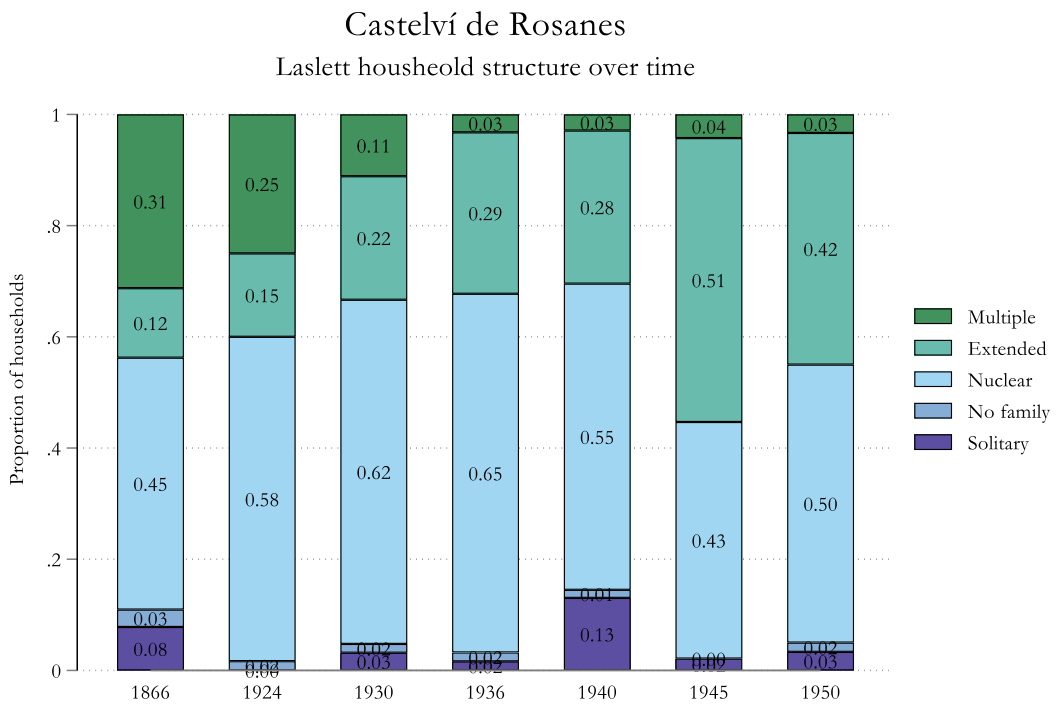


Table AP.3. 3. Household structure by year and type Castellví de Rosanes.

Census year - Castellví de Rosanes	Household type					
	1	2	3	4	5	Total
1866	5	2	29	8	20	64
	7.81	3.12	45.31	12.50	31.25	100.00
1924	0	1	35	9	15	60
	0.00	1.67	58.33	15.00	25.00	100.00
1930	2	1	39	14	7	63
	3.17	1.59	61.90	22.22	11.11	100.00
1936	1	1	40	18	2	62
	1.61	1.61	64.52	29.03	3.23	100.00
1940	9	1	38	19	2	69
	13.04	1.45	55.07	27.54	2.90	100.00
1945	1	0	20	24	2	47
	2.13	0.00	42.55	51.06	4.26	100.00
1950	2	1	30	25	2	60
	3.33	1.67	50.00	41.67	3.33	100.00
Total	20	7	231	117	50	425
	4.71	1.65	54.35	27.53	11.76	100.00

First row has *frequencies* and second row has

5. Proportion of households in Santa Coloma.

Graph AP.3. 4 Proportion of households of each type by year in Santa Coloma de Cervelló.

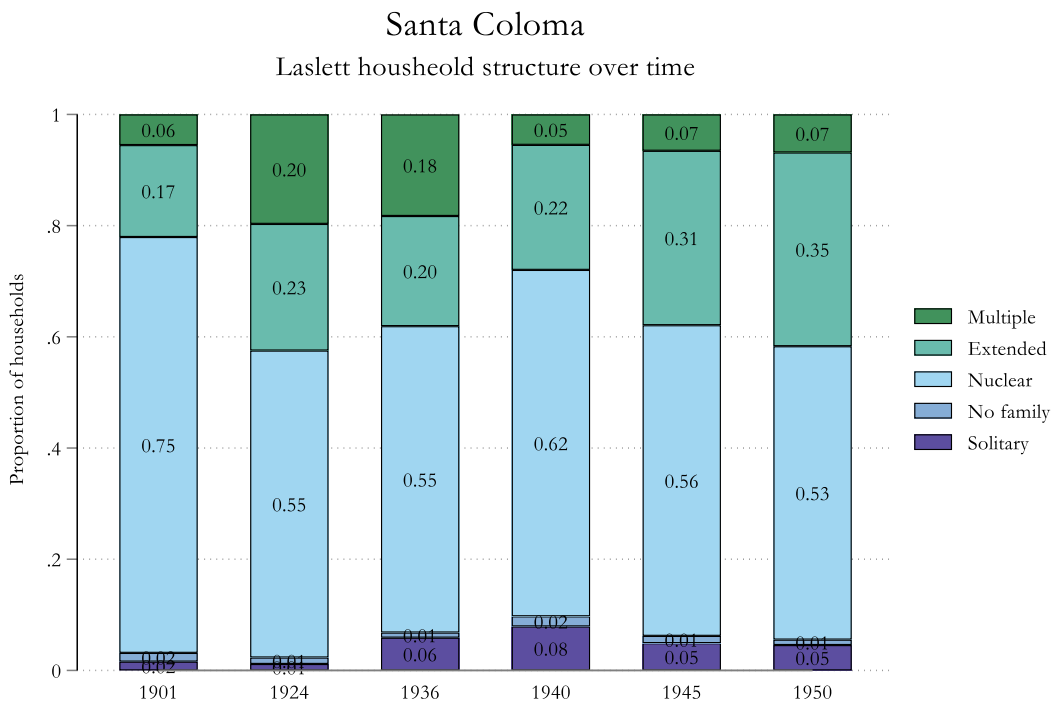


Table AP.3. 4. Households by year and family type. Santa Coloma de Cervelló.

Census year Santa Coloma de Cervelló.	Household type					
	1	2	3	4	5	Total
1901	2	2	95	21	7	127
	1.57	1.57	74.80	16.54	5.51	100.00
1924	3	3	143	59	51	259
	1.16	1.16	55.21	22.78	19.69	100.00
1936	19	3	178	64	59	323
	5.88	0.93	55.11	19.81	18.27	100.00
1940	26	6	205	74	18	329
	7.90	1.82	62.31	22.49	5.47	100.00
1945	15	4	171	96	20	306
	4.90	1.31	55.88	31.37	6.54	100.00
1950	14	3	162	107	21	307
	4.56	0.98	52.77	34.85	6.84	100.00
Total	79	21	954	421	176	1651
	4.78	1.27	57.78	25.50	10.66	100.00

First row has *frequencies* and second row has *row percentages*

6. Proportion of households in Sant Feliu.

Graph AP.3. 5 Proportion of households of each type by year in Sant Feliu del Lobregat.

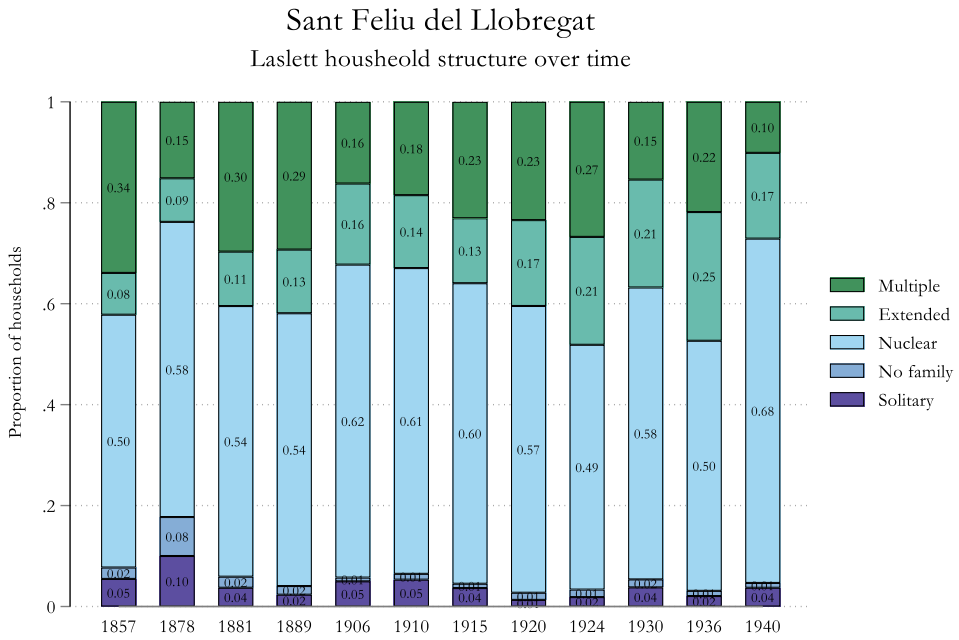


Table AP.3. 5 Households by year and family type. Sant Feliu de Llobregat.

Census year Sant Feliu de Llobregat.	Household type					
	1	2	3	4	5	Total
1857	29	12	266	44	180	531
	5.46	2.26	50.09	8.29	33.90	100.00
1878	66	51	386	57	100	660
	10.00	7.73	58.48	8.64	15.15	100.00
1881	22	13	318	64	176	593
	3.71	2.19	53.63	10.79	29.68	100.00
1889	15	11	347	81	188	642
	2.34	1.71	54.05	12.62	29.28	100.00
1906	40	6	498	129	130	803
	4.98	0.75	62.02	16.06	16.19	100.00
1910	46	10	524	125	160	865
	5.32	1.16	60.58	14.45	18.50	100.00
1915	34	8	555	120	215	932
	3.65	0.86	59.55	12.88	23.07	100.00
1920	12	13	521	156	215	917
	1.31	1.42	56.82	17.01	23.45	100.00
1924	20	16	522	230	288	1076
	1.86	1.49	48.51	21.38	26.77	100.00
1930	55	23	841	311	224	1454
	3.78	1.58	57.84	21.39	15.41	100.00
1936	30	15	719	370	317	1451
	2.07	1.03	49.55	25.50	21.85	100.00
1940	62	16	1140	284	169	1671
	3.71	0.96	68.22	17.00	10.11	100.00
Total	462	572	6670	1971	3089	12764
	3.62	4.48	52.26	15.44	24.20	100.00

First row has *frequencies,* and second row has *row percentages*

7. Proportion of households in Sant Vicenç dels Horts.

Graph AP.3. 6. Proportion of households of each type by year in Sant Vicenç dels Horts.

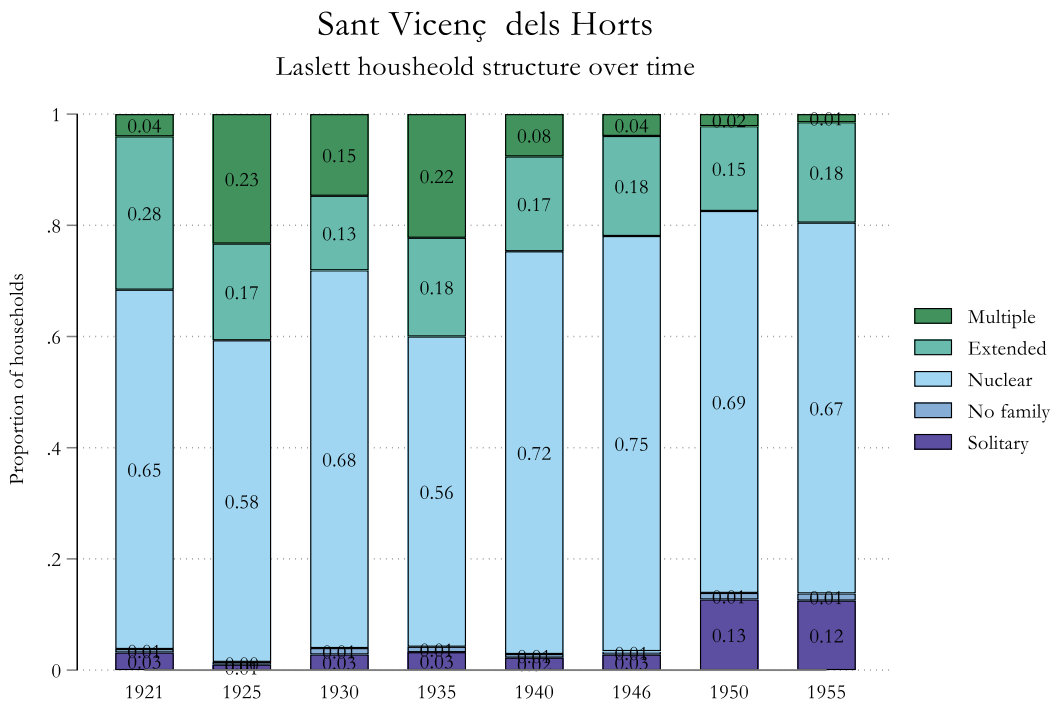


Table AP.3. 6. Proportion of Households of each type by year. Sant Vicenç dels Horts.

Census year	Laslett family type					
Sant Vicenç	1	2	3	4	5	Total
1921	15	3	307	131	19	475
	3.16	0.63	64.63	27.58	4.00	100.00
1925	4	2	236	71	95	408
	0.98	0.49	57.84	17.40	23.28	100.00
1930	22	9	532	105	115	783
	2.81	1.15	67.94	13.41	14.69	100.00
1935	23	7	399	127	159	715
	3.22	0.98	55.80	17.76	22.24	100.00
1940	17	5	552	130	58	762
	2.23	0.66	72.44	17.06	7.61	100.00
1946	22	5	589	142	31	789
	2.79	0.63	74.65	18.00	3.93	100.00
1950	129	12	698	155	22	1,016
	12.70	1.18	68.70	15.26	2.17	100.00
1955	146	15	779	211	17	1,168
	12.50	1.28	66.70	18.07	1.46	100.00
Total	378	58	4,092	1,072	516	6,116
	6.18	0.95	66.91	17.53	8.44	100.00

First row has *frequencies,* and second row has *row percentages*