Occupational prestige and fathers' influence on sons and daughters

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Abstract

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Keywords: Gender inequality . Intergenerational social mobility . Occupational prestige . Fathers' influence .

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Introduction

There is increasing interest in the social sciences in the study of intergenerational social mobility, referring to the study of the lack of persistence of socioeconomic status across generations within the same family (see Blanden 2013; Erikson and Goldthorpe 2002). The seminal studies by Atkinson (1981), Atkinson et al. (1983) and Becker and Tomes (1979, 1986) spurred a great deal of research, surveyed in Eriksson and Goldthorpe (1992, 2002), Solon (1999, 2002) and, much more recently, in Bjorklund and Jantti (2009), Black and Devereux (2011) and Torche (2015). Persistence has commonly been appraised by computing the level of intergenerational elasticity, obtained from a regression model in which the child's status is regressed on the parental status, with the estimate of the corresponding coefficient capturing status persistence. High elasticities indicate low social mobility: children from a family of lower status are likely to have relatively low status as adults; analogously, the elite positions in society tend to be preserved across generations. The opposite is inferred from estimating low elasticities.

The present work aims to provide evidence of the intergenerational transmission of socioeconomic status in Spain. Whereas there exists an extensive literature on intergenerational mobility in the cases of the UK, the US, and Nordic countries, evidence for other European countries is quite scarce, with Spain being an example. Intergenerational persistence has basically been addressed in Spain through the estimation of intergenerational earnings elasticity (Sánchez-Hugalde 2004; Pascual 2009; Cervini-Pla 2013, 2015). Average estimates in these studies have been in the range 0.35-0.45, which has put the Spanish case in the mid-range of an international ranking. The dearth of adequate data has hampered the estimation of robust values for intergenerational elasticity of socioeconomic status in Spain. A first caveat is that intergenerational mobility in earnings has been estimated from cross-sectional or short-sample databases, which only provide information on annual earnings, although socioeconomic status is better approximated by measures of permanent income. Second, parents' information has rarely been provided for the children's generation once they have left home, and in these rare cases, information about parents' earnings is lacking; rather, it has been inferred from data on occupational and/or educational attainment (Cervini-Pla 2013, 2015). Intergenerational elasticity has then been estimated by two-sample, two-stage least squares (TS2SLS), which often yields upwardly biased estimates (Francesconi and Nicoletti 2006; Jerrim 2017). Third, certain other studies have measured intergenerational elasticity using just a few categories of educational or occupational attainment (Caparros 2016; De Pablos and Gil 2016).

Our work offers a complementary study of intergenerational mobility, using occupational prestige as a measure of socioeconomic status. Specifically, this was accomplished by comparing the

occupational prestige of individuals, at the moment of the interview, to that of their father when the individual was sixteen. Our approach provides additional evidence and addresses certain limitations encountered by the relatively scarce, prior work in Spain. In particular, some of the advantages of our approach are that occupational prestige is a more stable and more accurate measure of permanent socioeconomic status than annual earnings, that co-residence bias is not present in the estimation, and that an ample set of occupational categories (over 200) is considered.

From an international perspective, the case of Spain is interesting, because it can stand for the case of Mediterranean/Southern countries in Europe (Trifiletti 1999; Arts and Gellisen 2002). Regarding social mobility, Mediterranean countries tend to be less meritocratic, and family ties are especially important in diverse spheres of life, as for example, in the labour market, where many jobs are filled through social referrals. Empirical studies have shown that the Mediterranean/Southern countries exhibit higher intergenerational elasticities of income than Nordic and Continental European countries, in line with those of Liberal/Anglo-Saxon countries (see Cervini-Pla 2015; Esping-Andersen and Wagner 2012; Jerrim 2017).

Apart from focusing on the Spanish case, an important contribution of our study is the use of occupational prestige as a measure of socioeconomic status. Various authors - Ermish et al. (2006), Francesconi and Nicoletti (2006) and, more recently, Blanden (2013, 2015), Caparros (2016), and Raitano and Vona (2015a) - highlighted some of the advantages of occupational prestige. First, occupational prestige reflects the occupation's "contribution to society" and gathers a variety of occupational characteristics that are valued by individuals (wages, educational attainment, skills), thereby providing a complementary view of social mobility, compared to simple monetary indicators. Second, it is argued that prestige is a more stable indicator of socioeconomic status than annual earnings, and is more easily retrieved from interviewed individuals in surveys asking retrospective questions about parents' characteristics (Ermish et al. 2006). This approach is especially appealing for studying the Spanish case, given the lack of large-scale longitudinal data on earnings. Third, in contrast to studies that use a reduced number of occupations or social classes (fewer than ten) representing qualitative variables, the use of occupational prestige allows us to consider this as a continuous quantitative variable, facilitating the estimation of intergenerational elasticity based on typical regression equations. For Spain, the only prior study following a similar approach was that of Carabaña (1999), with data from 1991. Since that year, many changes have occurred, and it has become essential to analyse the evolution of intergenerational mobility in Spain with more recent data.

In particular, cross-sectional information for years 2007 to 2010 was used. It is worth noting that, during this period, the world economy saw a sharp downturn in growth leading to a dramatic decline in employment. The Spanish case was outstanding as almost two million jobs were lost, causing the

unemployment rate to soar from 8% in 2007 to near 20% in 2010. Employment opportunities sharply narrowed over this period, suggesting the need to addressing the consequences of the advent of the Great Recession on the mechanisms of intergenerational transmission.

An additional contribution of our study is that we focused on differences in intergenerational mobility by gender and over time. International studies have routinely shown that women are more socially mobile than men, since their intergenerational elasticity is lower than that of men. We tested this by considering the gender of workers in the current generation. A second concern refers to the analysis of the evolution of the intergenerational transmission of status throughout the life cycle. In particular, differences across age groups are usually presented as potential indicators of change over time. A lower estimated elasticity among more recent generations would indicate that the influence of parents' social position is losing importance in determining the socioeconomic status and occupational prestige of sons and daughters (Cervini-Pla 2013; Davia and Legazpe 2017). In this respect, this study split the sample into three large age groups, to capture potential changes in the intergenerational transmission of prestige during the life cycle. In this way, the evolution of the labour market over time and the institutional set-up could be approached.

Individual characteristics and job occupational information were obtained from the Quality of Working Life Survey (*Encuesta de Calidad de Vida en el Trabajo*, ECVT hereafter), a national database, while occupational prestige data came from a SIOPS-type, Spain-focused scale PRESCA2, elaborated by Carabaña and Gómez-Bueno (1996).[1] The ECVT is a survey of employees only, thus we studied intergenerational transmission exclusively among workers. Transition matrices and descriptive evidence were used to show how the occupational prestige of sons and daughters is related to that of their fathers, and regression analysis was employed to estimate intergenerational occupational elasticities.

Results confirmed that mobility in Spain was in the medium range, from an international perspective, and was higher for daughters than for sons. An important final contribution of our study is that this result was robust to different specifications, after considering the influence of mothers, the age of respondents, and the calendar year, the overall pattern remained. Mobility weakened over time and it remained higher for daughters. With respect to studies using other measures of socioeconomic status in Spain, the point estimates were somewhat lower, suggesting that TS2SLS may be upwardly-biased. Specifically, our estimates showed that a 10% change in father's occupational prestige was associated with a one-third percent change in their offspring's occupational prestige in the same direction.

[1] SIOPS: The Standard International Occupation Prestige Scale (Treiman 1977). The main advantage of PRESCA2 over SIOPS is that the former provides a cardinal measure of occupational prestige, whereas the latter is merely ordinal. See below, in the "Data sources" subsection, for more details.

The structure of the paper is as follows. The next section discusses the interpretation of social mobility and the theoretical framework, which is the context of our study. The interest in studying social mobility for Spain and the review of prior research in this country is offered in the third section. Following that, the concept of occupational prestige is defined, the databases are briefly described, a descriptive analysis is carried out, and the analytical model is presented. Social mobility is examined in the "Results" section through the presentation of transition matrices and the estimation of intergenerational prestige elasticities. A series of additional exercises are carried out to check the robustness of the results, and the final section presents our conclusions.

Theoretical Framework

Social mobility

Intergenerational persistence suggests that children from a family of lower status are likely to have relatively low status as adults, indicating insufficient equality of opportunity (Blanden 2015; Capellari 2016; Palomino et al. 2019). In a society where the relative position of an individual in the social hierarchy that is directly and fully inherited from that of the parents is considered unfair, an increase in intergenerational mobility is desirable (Bjorklund and Jantti, 2009). A debatable question is how mobility is defined. Whereas a strict definition of social mobility requires upward or downward movements through a system of social hierarchy or stratification, thereby representing a change in social class, a weaker concept need refer only to a change in some indicator of socioeconomic status (earnings, income, occupation) but not necessarily a change in social class. Studying mobility through changes in the hierarchy of social classes has typically been addressed through contingency tables showing movements from origin-to-destination class positions (Erikson and Goldthorpe 1992, 2002), with recent contributions suggesting the study of stratification changes among micro-classes/occupations (see, for example, Weeden and Grusky 2005; Johnson et al. 2009; Lungu et al. 2013). Occupations have been seen as an important conduit for social reproduction, and have allowed for the establishment of a hierarchy that is more open and universalistic than the property-based class system (Peng 2001; Johnson et al. 2009). For economists, although earlier developments of socioeconomic transmission were based on income (Becker and Tomes 1979, 1986), a variety of indices of socioeconomic status have been used to compute correlations or regression coefficients across individuals or over periods of time, including occupational categories (see, among others, Ermish et al. 2006; Hellerstein and Morrill 2011).

Observed mobility patterns differ when either socioeconomic status or social class is used (see Blanden 2013, for a detailed discussion). Intergenerational mobility in social class seems to have remained essentially unchanged during recent decades, such that the constant flux hypothesis (Eriksson and Goldthorpe 1992) is supported by a number of studies (Esping-Andersen and Wagner 2012), among which Spain is included (Carabaña 1999; Marqués-Perales and Herrera-Usagre 2010).[2] Whenever indicators of socioeconomic status have been used instead of social class, a certain degree of mobility has been observed, with marked differences across countries (Bjorklund and Jantti 2009; Blanden 2013; Corak 2013; Jantti and Jenkins 2015; Jerrim 2017). An explanation for this differential behaviour, regarding the consideration of social class or indicators of social status, has relied on the increase in variability of labour market outcomes for individuals within the same social class, mainly due to observed technological changes and the tertiarization of economies (Blanden 2013, Johnson et al. 2009; Raitano and Vona 2015a; Weeden and Grusky 2005).

In this article, we focused on social mobility measured through changes in socioeconomic status. Despite the fact that social mobility, expressed in these terms, appears to increase over time, a significant correlation still exists between the indicators of socioeconomic status of parents and those of their children, so that the family background is still of great importance in the individual's work-life achievement (Erikson and Goldthorpe 1992; Bowles and Gintis 2002; Blanden 2013).

Transmission of social status

One interesting topic of study is the mechanism/s through which parental background is transmitted to children's outcomes. Thus, there are direct channels by means of investment in human capital - formal education and extra-curricular activities, both of which have cumulative effects on educational investments, but also quality of schools, field of study, contact with culture and knowledge - or monetary involvement (direct aid, loans, gifts, and others, such as investments in health or care). Other direct ways through which parents may transmit some of their characteristics to their children are unobservable in nature, such as inheritable features related to intelligence, motivation, values and preferences, and others related to soft skills - attractiveness, psychological traits, or relational capacities (Franzini and Raitano 2013; Davia and Legazpe 2017). Parents may directly influence children by the allocation of occupations (Hellerstein and Morrill 2011; Long and Ferrie 2013) or employers (Corak and Piraino 2011). More indirectly, nurture may also play a role in the transmission

[2] In Nordic countries and, to a lesser extent, in certain Continental countries, a re-emergence of mobility based on meritocracy seems to be observed (Esping-Andersen and Wagner 2012).

of status from parents to their children, through family networks, social contacts, or neighbourhood factors (Loury 2006; Pellizzari 2010).[3]

Raitano and Vona (2015a,b) undertook two cross-country studies for a selected sample of European countries, using a homogenous database, the European Union Statistics on Income and Living Conditions, EU-SILC, 2005 wave, to shed some light on the mechanisms driving social persistence. Identification was achieved through cross-country differences that allowed controlling for different welfare systems. The authors found that most such transmissions were channelled through education and occupation (see also Palomino et al. 2019). Particularly, in Nordic countries, intergenerational elasticity was reduced to zero and, in Continental countries, elasticities became non-significant, when these determinants were controlled for. A welfare system supporting good public education, and public policies favouring redistribution may be behind these results. In contrast, in the UK and Ireland, on the one hand, and in Italy and Spain, on the other, persistence was found, once controls for education and occupation were included. In the case of Southern countries, the authors argued that family connections and social networks played an important role in parental background shaping children's outcomes (see also, Pellizzari 2010).[4]

Persistence is less acceptable as the dependence of family ties increases, whereas it is more acceptable if it is mediated by differences in abilities and values, such as educational attainment or inheritable traits. In consequence, it is expected that, over time, nurture and social relations should have a lower weight in social transmission. An important goal of our study was to determine whether younger generations show higher levels of mobility. If this were the case, it could be argued that public policies aiming at greater equality of opportunity, coupled with technological and digital advances, the tertiarization of the economy, and cultural changes have all favored a reduction in intergenerational elasticity. The estimation of intergenerational elasticities for broad age groups attempts to investigate this issue.

Gender differences

Social mobility is usually studied from fathers to sons, ignoring the role of mothers and daughters. The progressive incorporation of women into the labor market during recent decades has given rise to an increase in work considering both genders. A standard result in the literature has been that transmission is stronger from fathers to sons than from fathers to daughters, which has led to the notion that women are more mobile than men. This has been a common result, even when using

[3] The issues of sibling correlation, assortative mating, and marriage patterns, as well as the intra-household division of labour have been matters of interest in recent studies on family ties (Blanden 2015, Cappellari 2016).

[4] For the UK, highly heterogeneous schooling systems may reinforce different qualities of the human capital of parents (Raitano and Vona 2015a,b).

different indicators of socioeconomic status (income, education, occupation) and across countries (Couch and Dunn 1997; Dearden et al. 1997; Österberg 2000; Schwenkenberg 2014). For the specific case of occupations, it has also been observed that there is a stronger link between fathers and offspring than between mothers and offspring; and a stronger link between mothers and daughters than between fathers and daughters; i.e. intergenerational transmission appears to be clearer for individuals of the same gender than for cross-gender combinations (Carmichael 2000, for the UK; Di Prieto and Urwin 2003, for Italy; and Nguyen et al. 2005, for the US). Parents of the same gender may act as a role model for the children, or may constitute the gender aspiration. Nevertheless, daughters are more likely to enter their father's occupation than any other occupation, and this probability has increased substantially over time in the US (Hellerstein and Morrill 2011).

The issue of participation is a serious concern when considering differences across genders, since female participation is lower than that of males.[5] Thus, some of the literature exploring gender differences in social reproduction has investigated the transmission of family income rather than individual income. Chadwick and Solon (2002) for the US and Hirvonen (2008) for Sweden have shown lower intergenerational elasticity in family income of parent-daughter pairs, compared to parent-son pairs, confirming again the greater social mobility of women. These studies have estimated intergenerational elasticity as being somewhat higher than have studies using individual earnings, since the influence of assortative mating leads to marriage homogamy and makes society more immobile (Ermish et al. 2006; Hirvonen 2008).

Although estimating intergenerational mobility in terms of earnings or income has an additional problem, regarding the widely-known gender pay gap, considering occupations for measuring mobility is also not without its problems. Specifically, the phenomenon of occupational segregation reflects the fact that men and women are unequally distributed across occupations, such that their allocation is, in general, not totally random, but they have different sets of occupations to which they can be assigned. Women more frequently work in jobs related to services, such as clerical, personal care, or teaching, with men mostly occupying managerial positions, as well as unskilled and skilled positions in manufacturing or construction.

The need for the study of occupational segregation in labor economics or sociological research is undisputed because it may reflect a condition of gender discrimination if women are systematically attached to jobs with worse conditions (lower wages, higher temporary and part-time rates, or with fewer opportunities for further training or promotion). In terms of prestige, much of the literature has focused on whether female occupations are indeed undervalued relative to male occupations. The so-

[5] Although female participation has markedly increased during recent decades, notable differences still exist between men and women in participation: interruptions due to maternity and child rearing are almost exclusively borne by mothers, hence likely influencing participation and future prospects in career achievement.

called “devaluation theory” (England 1992) states that female-dominated occupations present lower values of wages and/or occupational prestige than do male-dominated occupations, simply because they are filled by women. Empirically, the devaluation theory has been tested against other alternatives (e.g., human capital theory, institutionalism, relative attractiveness, compensating differentials theory, work orientation/preferences) following different approaches, with empirical evidence being non-conclusive (see England et al. 2007; Garcia-Mainar et al. 2018; Hakim 2003; Levanon et al. 2009; Magnusson 2009; Polavieja 2008).

Regarding the relationship between gender-occupational segregation and intergenerational mobility in occupations, it must be noted that two general patterns usually hold: first, that men and women express more interest in gender-congruent occupations than in crossing gender boundaries; and, second, that it is more acceptable for women to cross those gendered occupational boundaries than for men (Crawley 2014; DiDonato and Strough 2013; Rudman and Phelan 2010). To the extent that male-dominated occupations are associated with higher levels of wages and/or prestige, women may find it profitable (benefits are higher than costs) to access integrated or some male-dominated occupations more often than men to access female-dominated occupations.

England (2010; 2011) argued that younger generations of women take their mothers as reference, so that career progress is accomplished when occupations with greater wages or occupational prestige than their mothers are achieved. Women whose mothers were in occupations with low or medium levels of wages and/or occupational prestige moved to more valued occupations, but only among those that were female-dominated occupations (nursing, education, social work) because of gender essentialism (see also Charles 2011). Women whose mothers already were in high level occupations could only progress if they entered integrated or some male-dominated occupations, such as managerial, professional, or the law. For the case of men, gender essentialism leads them to gravitate toward male-dominated occupations. Because these occupations are dispersed across the entire distribution of wages and/or occupational prestige, men are reluctant to seek employment in integrated or female-dominated occupations. This supply-side view of intergenerational progression in occupational segregation is complemented by demand-side perspectives such as employer-discrimination (Bergmann 2011; Reskin and Maroto 2011), co-worker discrimination (Bergmann 2011; Crawley 2011) or loss of relevance in employment of male-dominated occupation, especially in the medium levels (McCall 2011). These elements limit the agency of workers to choose occupations.

Polavieja and Platt (2014) considered several of these possibilities in studying how preferences of young individuals for sex-typed occupations determined the occupation they eventually chose as adults. In particular, these authors investigated the way that parental socialization affects the agency of young individuals in occupational choice when they reach the labor market. They concluded that

a certain degree of intergenerational transmission of sex-typed occupations existed, basically through a process of behavioral sex-role learning. Thus, young individuals having preferences for sex-typed occupations were more likely to work in sex-typed occupations as adults. This general result was nuanced in the case of those individuals whose parents worked in more highly-valued occupations. In particular, female aspiration for sex-typed occupations declined, thereby favoring their participation in integrated or male-dominated occupations, such that it became more likely for women to cross boundaries than for men. An additional finding in Polavieja and Platt's (2014) study is that agency was also relevant, such that both motivation and autonomy (the two indicators of preference used by the authors) led females to move to more valued occupations, whereas in the case of males only autonomy, but not motivation, could lead them to aspire to cross boundaries.

The general conclusion that can be drawn from this literature is that the range of occupations that can be filled by women broadened, reducing the ties to parental background and hence facilitating mobility. This situation has been favored by the aforementioned factors related to tertiarization, cultural changes, and public policies, all of which spurred women's participation in the labor market, as well as the decline in occupational segregation. In an environment in which female participation has been continuously increasing, as is the case of Spain, it may happen that the prospects of women for achieving occupations of higher prestige are somewhat greater than those of men, thereby increasing the chances of daughters in new generations of upward mobility, as compared to sons. An important aim of our study was to compare social mobility across genders to shed light on a distinct behavior between men and women.

The Case of Spain

Why study the Spanish case?

First, as observed in other countries, social class mobility in Spain is low (Carabaña 1999; Marques-Perales and Herrera-Usagre 2010), but not so when mobility is expressed as change in socioeconomic status (earnings, education, or occupations). In particular, international cross-country studies put the Spanish case, along with others such as France and Japan, in the mid-range of an international ranking of the more mobile countries (Nordic European and Oceanic countries, Germany, and Canada) and the less mobile (the US, the UK, and developing countries such as South Africa and Brazil).[6] Moreover, it has been found that Spain presents slightly higher mobility than other Southern/Mediterranean countries such as Italy or Portugal (Cervini-Pla 2015; Esping-Andersen and Wagner 2012; Raitano 2015). Second, shared with this group of countries, welfare state benefits are

[6] For international rankings, see Blanden (2013), Corak (2013) or Jerrim (2017).

complemented with extensive family networks to cover social risks. The importance of family ties has been seen in later emancipation, low levels of external childcare, and the accession to employment through social referrals (Cervini-Pla 2015; Davia and Legazpe 2017), with these circumstances being important determinants of occupational allocation in Spain.

A third important feature is the slackness of the Spanish labor market, where accession to employment is strongly problematic, seen from a European perspective. The high unemployment rate (over 25% during the Great Recession) has favored the expansion of self-employment, and of part-time, temporary, and other flexible contracts that has widened the differences in job conditions between insiders and outsiders. This has encouraged the segmentation of the labor market, in which social contacts and networks have become relevant for accessing (stable) employment. Also, in occupational segregation, inequality, and over-qualification Spain stands out over other European countries. Fourth, as noted in the previous section, gender differences in the labor market exist, with some data reflecting this. Despite the significant increase in women's participation since the 1980s, the female employment rate is currently around 55%, 15 percentage points below that of men (see Appendix). Furthermore, women are now disproportionately concentrated in jobs with less-preferred working conditions.[7]

Finally, since the 1960s, public education has expanded. A strong financial effort has been made to broaden secondary education and develop the higher education system. The share of employees (aged 25-64) with higher-level studies has risen from less than 10% in 1980 to near 35% today, with greater increases in the case of women (De Pablos and Gil 2016). Simultaneously, education reforms have introduced later tracking at school: the 1970 (General) Education Law extended compulsory education from 12 to 14 years old; and LOGSE (*Ley Orgánica de Ordenación General del Sistema Educativo*, passed in 1990) from 14 to 16 years old, both leading to the separation of education in later stages.

Prior research in Spain

A handful of studies has focused on intergenerational persistence in Spain through the estimation of intergenerational earnings elasticity. They differ in the data sources, the samples and years used, and in the way they control for the various biases that arise in estimations. Notwithstanding that, there are common findings: mobility is higher for younger generations, and evidence for gender mobility is

[7] Temporary, part-time, and unemployment rates are, respectively, 26.0%, 9.5% and 12.5%, for men and 27.7%, 27.6% and 15.8% for women (Labour Force Survey, 2019: II quarter). According to the 2014 wave of the Wage Structural Survey, average hourly wages were €16.68 and €13.12 for men and women, respectively. As for 2017, the Gini index for income inequality was 0.35 (0.31 for the Eurozone, World Bank), whereas the Duncan index for occupational segregation was 0.50, and over-education was above 25% (Garcia-Mainar et al. 2015).

mixed. Average estimates in such these studies have been in the range 0.35-0.45, which has put the Spanish case in the mid-range of an international ranking. Sanchez-Hugalde (2004) estimated intergenerational earnings elasticity with data from the Spanish Family Expenditure Survey for years 1980 and 1990, using annual income to proxy permanent income, and instrumenting parents' income with occupation and years of education. The overall intergenerational elasticity was 0.60 for the 1980 sample and 0.40 for the 1990. The reduction over time was only observed among men, decreasing from 0.64 to 0.32, with elasticity among women slightly increasing, from 0.62 to 0.67. Pascual (2009) used disposable yearly income from the 2001 wave of the European Community Household Panel as a measure of permanent income for sons and daughters, and all the waves (1994-2001) to construct several-year averaged earnings as proxy for parents' permanent income. OLS and IV estimates were in the range 0.32-0.41 between fathers and sons and around 0.30 between mothers and daughters; cross–gender estimated elasticities were not significant.

In two studies, Cervini-Pla (2013, 2015) combined the 2005 Survey of Living Conditions (the Spanish component of the EU-SILC), to collect information from the offspring and their parents' characteristics, with the Spanish Family Expenditure Survey of 1980, to impute parents' permanent earnings from educational and occupational categories, in order to use a TS2SLS estimator. In both of these studies, permanent income was proxied by the annual earnings of the selected individuals around their 40s. In Cervini-Pla (2013), the sample was divided between those in the range of 30-40 years old and those in the 40-50 range, to study the evolution across cohorts. Furthermore, this study controlled for employment selection using a Heckman type participation equation to estimate an elasticity of 0.43 between fathers and sons (0.50 between mothers and daughters) for those in the range 40-50 years old, declining to 0.38 (0.37) for those between 30-40 years old. In Cervini-Pla (2015), assortative mating was controlled, using family income to proxy daughters' earnings, obtaining estimated elasticities for individuals 30-50 years old in the same range (0.42 for sons and 0.39 for daughters).

Other studies measuring intergenerational transmission considered alternative indicators of social status. With information from the 2005 and 2011 waves of the EU-SILC, Caparros (2016, 2018) used discrete choice models to show that women were occupationally more mobile, that overall mobility declined from one sample to another and that there existed a different behavior regarding upward or downward occupational mobility. De Pablos and Gil (2016) showed that educational mobility increased over time, especially among women (see also Carabaña 1999). Marques-Perales and Herrera-Usagre (2010) used social class to confirm that social flux in Spain remained basically constant over time, with strong persistence in the extremes of the social class distribution observed. Using surname correlations, Güell et al. (2015) found an intergenerational elasticity of about 0.60 in

one large Spanish region, Catalonia. (For a similar result in other Spanish regions, also using surname correlations, see Collado et al. 2008).

The study by Carabaña (1999) used a measure of occupational prestige, the PRESCA2, with a sample of more than 90,000 individuals from the 1991 Spanish Sociodemographic Survey (SSS) to compute the intergenerational elasticity of prestige for individuals when they were in their first job, across different cohorts. The global estimated value was 0.28, and the average for individuals under age 45 was 0.24 as against 0.34 for older individuals. Salido (2001) studied social mobility in Spain, also using the 1991 SSS, with prestige measures from Treiman (1977) and Wegener (1988) to compute transition matrices, finding that, although fluidity was higher among women, mobility patterns were somewhat different between men and women, since women were more occupationally segregated.

As noted earlier, our study contributes to the literature by estimating intergenerational elasticities using occupational prestige as a measure of socioeconomic status, for the period 2007-2010. It should be remembered that, given the data availability in Spain, occupational prestige presents certain advantages over other habitually used measures, such as income. These are discussed in the following section.

Measures, Data, Descriptive Analysis and Analytical Model

Measures of occupational prestige

This study pursues an analysis of the intergenerational transmission of socioeconomic status, considering differences across genders and the lifespans of individuals. Occupations were employed as expressions of socioeconomic status. The use of occupations to study social mobility dates back to the work by Blau and Duncan (1967), who were pioneers in this field. Their study consisted of a systematic analysis of the American occupational structure as a major foundation of the stratification system. More specifically, the authors analyzed the process of social mobility across generations, from career beginnings to occupational destinations, thereby presenting, for the first time, a systematic overview of the dynamics of the stratification system in the US.

In order to capture changes across as many occupations as possible, an indicator of the social position that an occupation represents, such as occupational prestige, has frequently been used. Accordingly, the present analysis retained occupational prestige as the most important dimension in social interaction. Several advantages of occupational prestige have usually been advocated for its use. First, in social stratification, occupational prestige has a broader theoretical meaning than other

socioeconomic indices, since it encompasses many determinants other than earnings and education (Warren et al. 1998). For instance, prestige may be a proxy for unobserved aspects of human capital. Second, to the extent that an occupation embodies a bundle of job characteristics that are jointly considered by individuals, prestige reflects an occupation's contribution 'to society', and measures its desirability, thereby capturing the social standing given to those holding a specific occupation (Hauser and Warren 1997). It represents, therefore, the individual position in the social scale. Indirectly, prestige may shape how economic decisions are made by individuals; for example, when they belong to certain social networks.

Third, since occupational prestige is not affected by the redistributive effects of public policies (taxes, subsidies), it adds a policy-free perspective to the economic view delivered by earnings. In this sense, as already noted by Goldberger (1989: 513), restricting analysis to monetary measures may "understate the influence of family background on inequality". Since occupational prestige is a synthetic index of different job characteristics, including earnings or income, it provides both complementary and supplementary views of the monetary role of these variables. Fourth, in order to capture heterogeneity in labor market outcomes within social classes, a finer classification of occupations than habitually used (between 4 and 10) is needed. Dealing with a large number of occupations is only possible when they are taken as continuous rather than discrete. Occupational prestige allows for this to be operationalized.

In our particular study, other, more technical, advantages of prestige have already been advanced. First, occupational prestige is relatively stable over time, less subject to year-by-year transitory shocks and, in consequence, is a less noisy measure of long-term economic status than income or earnings (Francesconi and Nicoletti 2006; Nickell 1982). Second, the way in which information on parents' occupations is collected in the ECVT, with retrospective questions asked of children about their parents, may be more reliable, despite recall error, than the measures of permanent income required when using monetary measures alone (Blanden 2015; Ermish et al. 2006; Torche 2015). Third, our data avoid the co-residence bias coming from parents and their offspring living together.

Data sources

There is a variety of ways to measure occupational prestige. The Standard International Occupation Prestige Scale (SIOPS), elaborated first by Treimann (1977), was based on national populations' subjective valuations of occupation, in several countries, and is expressed as a continuous variable. This, and other measures, assumes that prestige can be seen as a metric of a structural order of occupations, where occupations with high prestige in general are also occupations with strict skill requirements, high earnings, and other valued characteristics (Treiman 1977).

A SIOPS-type prestige scale elaborated specifically for the Spanish case, PRESCA2, by Carabaña and Gomez-Bueno (1996) was utilized in this paper. This was constructed along similar lines to the typical SIOPS scale, with one important difference. Whereas the SIOPS was built from occupational categories with ordinal values ranked from 0 to 100, in such a way that differences in social positions are informative of the ordering of prestige, in the case of PRESCA2, valuations of prestige can be used not only as differences but also as ratios, thus allowing for the quantification of the significance of those differences. Specifically, surveyed individuals were asked to value a range of occupational categories, taking *salesperson* as reference with a given value of 100. Each individual was then asked to rate an occupational category according to how he/she believed that job was valued by society. If one thought that a particular occupation was considered to be twice as prestigious as the *salesperson* category, one might rate that occupation at 200, or 50 if one believed that society considered that occupation was only half as prestigious as the reference category. If an occupation was believed by the individual to be socially considered a little better than *salesperson*, one might rate it 105 or 110, or if it was a little worse, 90 or 95 (for more on the PRESCA2 scale, see Carabaña and Gómez-Bueno 1996). Theoretically, the scale should begin at zero and would have no upper bound. In fact, the lowest value of PRESCA2 was 23.58, corresponding to *shoe shiners and street workers,* and the highest was 266.23, for *legislative officials and government administrators*.

Regarding individual information, the ECVT, produced by the Spanish Ministry of Labor and Immigration, was a program that focused on employment relationships and on the evaluations and attitudes of employees towards work. The survey addressed workers over age 16, living in households, as being representative of the total working population, and covered a number of issues relating to working conditions. Only working individuals were surveyed, so we were unable to control for participation bias. The sample was constructed by pooling the last four consecutive waves, from 2007 to 2010.[8] For our purposes, the main advantage of the ECVT was that it provided information about the current occupational category of the surveyed individuals, and that of their parents when the individual was sixteen years old (thus avoiding the co-residence bias). The portion of non-working mothers when the son or daughter was sixteen was above 70%, with this being a particular concern for the estimations. The occupational prestige of mothers was not used for estimations directly, but a dummy variable was included for considering whether the mother was working or not, with this capturing the family/work structure.[9] After removing those individuals for whom there was no

[8] Information for parents' occupation was not present in previous waves.

[9] In the section devoted to discussion, occupational prestige of mothers was also included in estimations as an additional sensitivity analysis.

information on their father's occupation when they were sixteen, the full sample contained 16,892 sons and 11,993 daughters,[10] being representative of the total of Spanish workers.[11]

ECVT and PRESCA2 distinguished occupational categories according to the 1994 Spanish Occupations National Classification (CNO-1994), which followed the ISCO-88 (International Standard Classification of Occupations) guidelines. The three-digit classification was the maximum level of disaggregation provided in the ECVT, producing 216 occupations. By attaching the PRESCA scale to the corresponding occupation, both offspring's and parents' occupational prestige was obtained, which allowed us to compute intergenerational elasticities for a large set of occupations. Apart from industry of activity, there was no other information for parents, nor did we have information on spouses or siblings within the household.

Descriptive analysis

Information on occupational prestige for sons and daughters in our sample, both overall and in prestige quintiles, are shown in Table 1. The mean of occupational prestige was nearly the same for sons and daughters, whereas the mean age was one year older in the case of sons (42.7 vs. 41.5). The quintile distribution for age shows that, for men, the highest value was observed in the top quintile, while it was in the bottom quintile for women. The percentage of daughters with mothers who were working when the daughters were 16 years old was 30.9%, 7 percentage points above that of the case of sons.[12]

(Table 1 about here)

The kernel density distributions of occupational prestige for the father-son and father-daughter pairs are shown in Figure 1. Distributions were somewhat bimodal, much more clearly so in the case of daughters. Whereas the spike on the right was more or less coincident for fathers, sons and daughters, just below 100, the spike on the left was "more on the left" in the case of daughters, and much more acute for these than for sons. This suggests that women were more concentrated in low-prestige occupations. Comparing fathers with their offspring, the figures show a mean displacement to the right for the latter, reflecting an increase in average prestige for the daughters and, much more evidently, for sons with respect to their fathers. The low-prestige occupations that characterize the father's distribution attenuated in the sons' distribution, but not in that of the daughters'. This is also

[10] The reasons for the absence of father's occupation were unknown. It could be due to non-working fathers (unemployed, non-active, retired); non-response; or non-existence (absent, dead, etc…). It supposed missing less than 10% of the initial sample.

[11] The Appendix presents a comparison with data drawn from the Labour Force Survey for the same time period. The sample proportion of 41% women resembles the population percentage of working women.

[12] Sample descriptive statistics for the whole set of variables used in the analysis are reported in the Appendix.

shown in Table 1. Looking at the respective columns, the distribution of daughter's father prestige is displaced to the right, compared to that of son's father prestige (quintile average values of father's prestige were always higher in the case of daughters than in sons).

Analytical model

The baseline specification for estimating the intergenerational elasticity, β, consisted of estimating Equation (1)

$$OP_i^o = \alpha + \beta OP_i^f + e_i \qquad (1)$$

where OP_i^o was the occupational prestige of the offspring (son or daughter), and OP_i^f was the occupational prestige of the father. Both were expressed in logs, to deal with the right-skewed distribution of occupational prestige. When using income or earnings, the coefficient analogous to β in Equation (1) is derived from a utility-maximization program, so that β is indicative of causality running from parents' income to children's income (Becker and Tomes 1979, 1986). Goldberger (1989) reshaped the model to assign β only a mechanical role, β thereby reflecting how father's and offspring's incomes (or other indicator of socioeconomic status) were correlated. This is the way we interpreted it: the estimated coefficient is indicative of the partial correlation in prestige between fathers and children, but it cannot explain the mechanism by which parental prestige is transmitted to the offspring. Usually, β is intended to range from 0 (complete mobility) to 1 (complete immobility). Ermish et al. (2006) derived a model to show that occupational prestige and permanent income were both related, supporting the fact of measuring intergenerational elasticity through prestige to approach persistence in the transmission of socioeconomic status.

As a first approximation, no additional regressor was included in Equation (1) to capture direct effects (see Esping-Andersen and Wagner 2012).[13] Only year-fixed effects were included to control for the business cycle. Between 2007 and 2010, the business cycle was in reverse. Spain transited from its lowest level in unemployment rates, below 8% in 2007, to more than 20% in 2010. Diverse covariates were progressively incorporated into Equation (1) to control for different sources of bias giving rise to the following Equation (2)

$$OP_i^o = \alpha_1 + \beta_1 OP_i^f + \beta_2 WM_i + \alpha_2 Age_i + \alpha_3 (Age_i^2/100) + \varepsilon_i \qquad (2)$$

[13] This is the standard approach to compute intergenerational elasticity. Studies attempting to investigate the mechanism through which parental background is reproduced in children's outcomes add mediators to this simple specification. The most clear example is education (see, for instance, Raitano and Vona 2015a,b; or Palomino et al. 2019).

where *WM* was the working status of the mother when the individual was 16, and *Age* denoted the age of the respondent at the time of the survey. The second part of the next section details how potential biases were addressed.

Results

Transition matrices

A first approximation to social mobility was obtained from transition matrices (see Table 2) which report the observed probability of moving to and from any point in the occupational prestige distribution by quintiles. The figure in each cell is the relative conditional frequency that the prestige of the son (daughter) will take a value lying in a particular quintile, given that the corresponding value for the father lies in that quintile. The degree of persistence in each quintile and the degree of mobility across different quintiles can then be inferred. One clear advantage of transition matrices over intergenerational elasticities is that they are better able to capture non-linearities in intergenerational transmission. A caveat is that the consideration of percentiles is totally arbitrary, with this possibly affecting the patterns of mobility.[14]

(Table 2 about here)

Looking at the leading diagonal, it can be seen that the largest proportion of sons and daughters who remain in the same quintile as their fathers was in the top quintile, with the value observed for the bottom quintile in the case of daughters also being remarkable. This pattern of a non-linear relationship is habitually found in studies of intergenerational mobility (see, for example, Dearden et al. 1997; Bjorklund and Jantti 2009). It is well known that similarities in socioeconomic status between parents and their offspring are stronger at the extremes of the distribution, so that the elasticities are capturing an average value of persistence (Hirvonen 2008; Davia and Legazpe 2017). Transition matrices are also useful for distinguishing between upward and downward mobility. Elements above the leading diagonal indicate downward mobility, while elements below indicate upward mobility. High frequencies in the upper part of the distribution confirmed a strong persistence, conceivably indicating the attempts of better-off fathers to shelter their offspring from downward mobility. Although persistence in the lower part of the distribution was also remarkable, it was smaller than in the upper part, suggesting some degree of upward mobility (a similar result was found by Hirvonen 2008, for Sweden).

[14] For example, Dearden et al. (1997) used quartiles while Hirvonen (2008) employed deciles.

Values reported in Table 2 showed that differences across genders exist. Bearing in mind that some part of the greatest persistence observed in the tails of the distribution is due to statistical issues (see Hirvonen 2008), mobility appeared to be higher for daughters in the medium quantiles, since proportions were closer to 0.20 than were those of sons. Gender differences were also observed regarding upward and downward mobility. Downward mobility was higher among daughters, especially for those whose fathers were in the two upper quintiles. Similarly, upward mobility was higher for daughters whose fathers were in the 2nd to 4th quintiles.

The bottom panel in Table 2 reports a series of mobility indicators summarizing the main features drawn from transition matrices.[15] Statistics on both upward and downward mobility also pointed to higher mobility of women. The Shorrocks (trace) index corroborated this view. Since the trace of a (square) matrix is the sum of the main diagonal elements (an indicator of persistence), zero mobility would imply a value of 0 for the index, while perfect mobility would imply a value of 1. Bartholomew's indices weight transition by the number of categories traversed. A simple version takes the level of this number as weight, while an adjusted version uses the squared value. Only in the case of the adjusted version, was daughters' mobility not shown to be higher than that of sons, suggesting that changes across quintiles were greater in extent for the latter.

In order to gain awareness on upward and downward mobility, we estimated a multinomial logit model, where the discrete dependent variable had three possibilities: no mobility, mobility upwards, and mobility downwards, with no mobility being the reference category. Mobility refers to a change in the quantile of prestige distribution. Explanatory variables included were gender (that took value 1 for sons and 0 for daughters), a quadratic polynomial for age, and educational attainment. Our interest was focused on the relative risk ratios corresponding to the gender dummy, which are presented in the last row of Table 2. Results show that the probability of mobility in both directions was higher for daughters than for sons, since the values were lower than 1.

Regression analysis of intergenerational prestige elasticities

The first column in Table 3 (Model I) shows the estimates of Equation (1) for sons (upper panel) and for daughters (bottom panel). Estimated elasticities were 0.35 and 0.32, respectively, a little smaller

[15] The ranking indices were (1) a simple summation of the elements of the leading diagonal; (2) the summation of the elements below the leading diagonal; (3) the summation of the elements above the leading diagonal; (4) the summation of the elements above and below the leading diagonal; (5) the Shorrocks index, computed, for a given (square) matrix A of dimension n, as $(n - traceA)/(n - 1)$; (6) a weighted mobility index due to Bartholomew that, if a_{ij} is the proportion of daughters or sons in quantile j whose parents were in quantile i, is defined by $(1/n)\Sigma_i\Sigma_j a_{ij} |i-j|$ and (7) an adjusted version computed by $(1/n)\Sigma_i\Sigma_j a_{ij} (i-j)^2$. In all cases, except (1), the larger the index size, the higher the mobility. See Dearden et al. (1997), Hirvonen (2008) and De Pablos and Gil (2016) for description and discussion of the mobility indices.

than those found in the Spanish economy when using earnings, and in the medium range of the international perspective (see Cervini-Pla 2015). Ermish et al. (2006) estimated values in the same range for the UK (between 0.31 and 0.44 for men; 0.26 and 0.40, for women) and Germany (0.33 for men and 0.26 for women) using international measures of occupational prestige. The different values estimated from Equation (1) for sons and daughters, albeit not very marked, were statistically significant, which again indicates a higher degree of social mobility of women.[16]

(Table 3 about here)

The coefficients of year effects were all significantly different from zero. In the sons' sample, the coefficients increased with the year, while they decreased in the daughters' sample. Wald tests showed that differences among these time coefficients were statistically significant. The distinct behavior across genders deserves a brief digression. When the Great Recession turned up, almost 2 million jobs were lost during this period, with some occupations being exceptionally affected, such as those related to construction. In this sense, the temporary rate dramatically fell from more than 30% to less than 25% because thousands of temporary contracts were not renewed. If the massive destruction in employment was concentrated in jobs associated with lower levels of occupational prestige, as was likely to happen, the proportion of workers employed in occupations with higher prestige probably increased during the period of analysis. This could have induced an overestimation of the intergenerational elasticity and a magnification of upward social mobility, whenever parents' prestige of those individuals who remained in the sample was similar to those individuals who dropped out of the sample.[17] Most employment destruction in this period accrued among men, around 1.6 million, more than 1 million in construction, which may be explaining our results. Average prestige of working men increased during this period, reflecting that still employed men were in relatively more-valued occupations. This was not the case for women, for which year-estimated coefficients were positive and statistically significant, indicating that average prestige in each year was greater than that in the period of reference, 2007, but they did not increase during the period. Jobs lost by women, around 0.2 million, were less unequally distributed across occupational categories than those of men.

Turning back to our variable of interest, a first potential source of bias in estimating Equation (1) has to do with participation. As already noted, our sample was of workers only, and hence there was

[16] An initial exercise was to estimate a pooled sample with a dummy for gender (1=son, 0=daughter), included on its own, and interacted with all the other regressors, to test whether differences by gender were statistically significant (this has been done in this and in all subsequent specifications). In nearly all cases, the hypothesis of gender equality in coefficients was rejected. In particular, the gender dummy was positive and statistically significant, which reveals a distinct intergenerational association across genders (estimated coefficient for model I was 0.028 and standard deviation 0.012). Results not shown but available upon request.

[17] In contrast, if individuals who remained in the sample had parents with higher occupational prestige than those individuals who dropped out of the sample because of the persistence being studied, then the estimated elasticity may not be so overestimated.

no way to control for selectivity into participation for sons and daughters. In the case of the parents, there was lack of information on the occupation for almost 70% of the mothers, such that the direct effect of the mother's occupational prestige on the offspring's occupational prestige could only be observed for roughly 30% of individuals. Despite that, in order to assess some possible effect, a dummy variable, *WM*, of value 1 if the mother was working when the respondent was sixteen and 0 otherwise, was added to the basic specification. The second column in Table 3 (Model II) shows that the point-estimate of intergenerational elasticity hardly changed when *WM* was included; and that the coefficient of the newly-added variable was statistically significant, and negatively signed, only in the case of daughters. This is interpreted as that the average increase in prestige, relative to their fathers, for the case of daughters whose mothers were working when they were sixteen was reduced, as compared to the case of daughters whose mothers were not working.

A second common bias arises from the fact that individuals in the sample were surveyed at different moments of their life-cycle. The older individuals were more likely to have attained a higher level of occupational prestige than those in the earlier stages of their career. A polynomial of age in quadratic form was included to align the age-status profiles across generations, with estimated values being reported in the third column of Table 3 (Model III).[18] The estimated coefficients for father's occupational prestige and for the mother's working dummy remained (almost) unchanged. The coefficients for age suggest a convex representation of age's influence: the offspring's occupational prestige rose with age, but at a diminishing rate. This can also be interpreted as occupational prestige being higher for younger generations. This is so because α_1 indicates the change in prestige across generations. Our estimates were near 3, much lower than the 5-point rise found by Carabaña (1999) for earlier cohorts. When adding the polynomial in age, this change varies with age [Change=$\alpha_1+\alpha_2 Age_i+\alpha_3(Age_i^2/100)$]. Furthermore, given that the age coefficients were estimated differently for sons and daughters, the profile also behaves differently. Thus, sample sons attained the highest level of occupational prestige at age 50, while daughters did so much earlier, at age 39.[19] The maximum change in occupational prestige was attained at these ages; for younger and older ages of respondents, the increase in prestige due exclusively to the passage of time was smaller. Specifically, sons born between 1957 and 1960 observed an increase in occupational prestige with respect to their fathers that was greater than those born in any other year. Analogously, daughters born between 1968 and 1971 enjoyed a greater rise in prestige with respect to their fathers than those

[18] As in the case of children, occupational prestige may vary during the life-cycle of parents. Ideally, adding a polynomial of father's age would help to control for this. However, there was no information in the survey on father's age. Notwithstanding that, although the life-cycle bias for fathers may appear, it is expected to be smaller in our study than in the general case. Since fathers' reported occupational prestige corresponded to that when the respondent was sixteen, variation in fathers' age is not expected to be as large as it would be if individuals reported the occupational prestige of their fathers at the moment of the survey.

[19] The age that maximizes prestige is attained from the expression $\alpha_2 + 2\alpha_3(Age_i/100)=0$.

daughters born in any other year. It is clear that daughters' increase in prestige was much more recent, probably linked to the most recent increase in participation of women in the labor market, as a consequence of the generalization of higher education since the 1960s. After those dates, the changes in prestige from one generation to the next were lower.

These results led us to investigate, not only the change in status across generations, but also the influence of the father's occupational prestige as time goes by. Differences across age groups may be presented as potential indicators of change over time. In order to capture potential changes in the intergenerational transmission of occupational prestige throughout the life cycle, the overall sample of sons and daughters was split into three different generations: those younger than age 41, those between 41 and 54, and those older than 54. Estimates of the intergenerational elasticity for each of the subsamples obtained by estimating Equations (1) and (2) – i.e. Models I, II and III - are reported in Table 4. The estimated elasticities were greater for sons than for daughters in the oldest and the youngest samples, and roughly similar in the medium-aged sample, confirming once more the greater social mobility of women. Additionally, elasticities were lower when individuals were younger, confirming that the transmission of the father's socioeconomic status to the offspring was declining over time. The intercept was greater, for both sons and daughters, in the youngest generations. The influence on daughters of the fact that their mothers were working was smaller, albeit statistically significant, in the youngest group.

(Table 4 about here)

Discussion and Robustness Checks

A number of sensitivity analyses were tried, using different specifications, to test the robustness of results: first, prestige was introduced in levels; second, age ranges - in discrete terms - were used, rather than an actual value; third, age was interacted with the father's occupational prestige, and, fourth, in those households where both parents reported their occupations, the highest-prestige occupation was chosen as regressor in the estimation. The same general pattern of results remained, despite the variety of specifications. Results are shown in Table 5, with each of the possibilities labelled as cases 1 to 4. In all cases, estimated elasticities were higher for sons, with differences being statistically significant. The only case in which this hypothesis was rejected was case 3, in which father's prestige was interacted with age. However, provided that the associated coefficient of the interacted variable was estimated positively for sons and negatively for daughters, and both were statistically significant, then the hypothesis of equal response of child's prestige to father's prestige was rejected at the 5% significance level.

(Table 5 about here)

The use of other prestige scales (Treiman 1977, Wegener 1988) produced very similar results (correlations between those scales and PRESCA2 are at 87% and 86%, respectively).[20] Another exercise we carried out was to limit the estimation to the sample of those individuals for whom information about occupations for both parents was available. This restricted our sample to 3,990 sons and 3,702 daughters. Results of estimating Equation (2), in particular Model III, are shown in Table 6, with main findings being as follows. First, the coefficient of fathers' occupational prestige for the restricted sample was estimated at 0.373 for sons, and 0.344 for daughters, much like the results for the larger sample, although estimated coefficients were slightly higher (remember, they were 0.358 and 0.322). Second, when the mothers' occupational prestige entered Equation 2 instead of fathers' occupational prestige, an opposite behavior was observed. The estimated coefficient for daughters was greater than that for sons (with the difference being statistically different from zero). That is, transmission was higher between same-gender interactions rather than cross-genders. Gender aspirations or gender models may be behind this behavior. Finally, when the maximum of parent's occupational prestige was chosen, differences between sons and daughters were not statistically significant, with the estimated coefficients being roughly identical. This value was somewhat higher than those estimated in the previous section, reflecting less mobility in this case.

(Table 6 about here)

Two alternative ways of studying the offspring's outcomes, with respect to those of the parents were finally considered. First, the influence of the controls in determining the probability of sons and daughters attaining an occupational prestige above that of their fathers was investigated. Using a probit model, an equation akin to (2) is estimated, where the dependent variable was dichotomic, with value 1 if the offspring's prestige was higher than the father's prestige, and 0 otherwise. Results in Table 7 show that the higher the occupational prestige of the father, the lower the probability that the offspring's prestige will surpass that of the father. The coefficient was more negative in the case of daughters, revealing the greater difficulties daughters have in achieving greater prestige than their fathers. Regarding the rest of the coefficients, the behavior mimicked that observed in Table 3. Thus, the working status of mothers was only statistically significant in the case of daughters, and the influence of age was increasing but concave.

(Table 7 about here)

A second possibility is to regress the difference between offspring's and father's prestige on the same set of regressors as in the previous cases. Again, the coefficient estimated for father's prestige

[20] Although some more recent scales have been proposed, none is as disaggregated by occupations as PRESCA2. Carabaña and Gomez-Bueno (1996) show little or no influence of the gender of the raters, so that gender bias in prestige is at a minimum.

remained unchanged after progressively adding more regressors, and was found to be more negative (higher absolute value) for daughters (see Table 8). This confirms, again, that the higher the father's prestige, the more difficult it is for the offspring's prestige to go further. A notable difference with respect to the two previous cases was that the working status of the mother had no significant impact for daughters.

(Table 8 about here)

Conclusions

This article combined different approaches to provide insights into the intergenerational social mobility of Spanish workers, comparing the occupational prestige of an individual at present to that of the father when the individual was sixteen. The advantage of occupational prestige relies on providing a complementary view to monetary indicators, and it is relatively more stable over time than annual earnings, and less subject to measurement errors. More specifically, our study focused on whether differences between men (sons) and women (daughters) exist regarding mobility, and how they could have evolved over time. Individual and job characteristics, including occupational information, were obtained from the Quality of Working Life Survey, a national database, whereas the occupational prestige data came from a Spanish-focused scale, PRESCA2, elaborated by Carabaña and Gómez-Bueno (1996). The cross-sectional nature of our data base precluded following the same individuals during the period of study. Additionally, since only information on the employed was available, participation bias could not be controlled for. This may constitute an important drawback of our study, since participation rates of women in Spain are clearly lower than those of men. A potential concern in the use of occupational prestige as an indicator of socioeconomic status is the possibility of devaluation of women's work (Garcia-Mainar et al. 2018). Other limitations of our database are that there was only information for parents regarding occupation and industry; that less than 30% of mothers were working when the respondent was sixteen; and that there was no information regarding spouses or siblings within the household, which prevented us from considering the role of assortative mating or sibling correlations.

A first approximation to mobility was obtained from transition matrices, which are better in capturing non-linearities in intergenerational transmission. Results showed that persistence was greater in the corners, but much more in the top quintile than in the bottom quintile, suggesting that better-off fathers may try to protect their children from downward mobility, and that mobility appeared to be higher for daughters than for sons. The information was completed with a number of

mobility indices, confirming a slightly higher mobility of daughters in Spain relative to sons, especially in the middle quintiles.

Prior studies of intergenerational earnings elasticity found a degree of persistence in Spain in the range 0.35-0.45 - greater than in Nordic countries, but smaller than in the UK or the US. Our estimates showed that a 10% change in fathers' occupational prestige was associated with a one third percent change in their offspring's occupational prestige in the same direction, somewhat lower than in prior Spanish studies using earnings. Specifically, the estimated intergenerational occupational elasticities were 0.35 for sons and 0.32 for daughters, confirming the higher social mobility of women.

Considering whether the mother was working or not when the respondent was 16 was found to be significant only in the case of daughters, without affecting the value of the intergenerational elasticity. The influence of the age profile was different for sons and daughters. Whereas sons attained the highest level of occupational prestige at 50, daughters did so much sooner, at age 39, indicating that the rise in average prestige across generations took place more recently among women than among men.

Over time, younger generations presented lower persistence than older generations, suggesting that the fathers' effect was weakening over time. The development of TICs, the spread of globalization, the generalization of tertiary education, and the increase in female labor participation may all underlie the reduction in the capacity of parents to transmit occupational status to their children. Our results suggest, therefore, that genetic inheritance, stereotypes in socialization, and parent's networking and social contacts may now be of somewhat less importance than in the past. In particular, prior evidence from other studies showed that countries where public education favors egalitarianism, and welfare states that are more redistributive, usually show greater social mobility, since problems of credit constraints in the transmission of socioeconomic status to children, and the importance of genetic factors - or neighborhood - are reduced (Ichino et al. 2011; Esping-Andersen and Wagner 2012).

The differences observed in the corners of transition matrices draw attention to this result. Regarding the upper extreme of prestige distribution, persistence is a common finding across countries. The higher mobility observed in Nordic and Continental countries is usually interpreted as welfare systems favoring mobility through 'levelling the playing field' and meritocracy (Bratsberg et al. 2007; Raitano 2015). Thus, in these countries, we observe, in general, higher levels of enrolment in pre-primary education, later tracking, and more generous financing of loans for students from disadvantaged backgrounds. Since the starting point in these groups of countries is a situation where income distribution is highly compressed and equality of opportunity is widespread, lower persistence is to be expected and mainly channeled through education. Despite that, persistence is greater in the upper extreme of the distribution, so that the wealthy try to shelter their offspring from unexpected

(and undesired) downward mobility (Esping-Andersen and Wagner 2012; Raitano and Vona 2015a). In the case of Southern/Mediterranean countries, intergenerational elasticities are higher and, moreover, persistence exists in both extremes of the social distributions. The benchmark in these countries is characterized by a low degree of income re-distribution, quite undeveloped family policies - leading to low levels of external child care and low maternal employment - weak vocational tradition and, until recently, early tracking. All this prevents the achievement of greater equality of opportunity, thereby hampering social mobility (Palomino et al. 2019). Therefore, labor market outcomes in these countries are more strongly related to social contacts and family networks than in the more mobile Nordic and Continental countries (Raitano and Vona 2015a,b).

Regarding the lower end of the prestige distribution, the spread of tertiary education in recent decades in Spain may have favored the increase in social mobility. However, this increase could have been even greater if certain circumstances had not occurred. Davia and Legazpe (2017) studied the intergenerational transmission of deprivation in Spain, with data from the 2011 EU-SILC, finding an important persistence for those individuals at the lower end of the income distribution. The authors pointed to two factors that would have favored the ability of parents to transmit socioeconomic status to their children and reduce mobility. First, credentials inflation may have led to over-qualification, such that more education is no guarantee for attaining more recognized occupations. Even more, this credential inflation may have indeed scarred low-educated workers and impeded them in attaining better occupations. Second, the increase of segmentation in the labor market gave fewer opportunities to younger workers to achieve better positions on the occupational ladder.

Results show that daughters experienced greater reductions in intergenerational persistence than sons. However, it should be borne in mind that our results correspond to individuals participating in the labor market. Whereas participation rates of middle-aged men are near 90%, the rates for women are clearly lower, and only in those holding tertiary education do participation rates of women approach those of men. Thus, the higher mobility observed for daughters may be affected by the fact that only those who expect more from their labor market career decide to participate. An outstanding result derived from the study is that parental influence on daughters may be channeled into other aspects, such as participation or occupational choice. Specifically, the facts that distribution of daughter's father's prestige was, in general, to the left of son's father's prestige; that the probability of a working daughter having a working mother was 30%, compared to 23% for working sons; and that the influence of having a working mother on children's prestige was statistically significant only in the case of daughters, all suggest that the likelihood of daughters participating in the labor market was more influenced by the parents' situation than was the case for sons. Such influence was less clear in mobility, since women's intergenerational elasticity was slightly affected by parents' outcomes. All in all, our results suggest that a modernization theory may be behind what has happened

in Spain in recent decades, delivering a lower weight to the reproductive view of mobility à la Bowles and Gintis (Carabaña 1999).

Appendix

Table 9 compares sample data with those of the Spanish Labor Force Survey averaged for the same period as in our analysis. Since ECVT is a sample of workers only, employment rates could not be computed. The first columns of Table 9 show that the female employment rate was near 55%, 15 percentage points below that of males. The proportion of male/female in the sample resembled that of the active population, even though the age distribution differed to a certain extent between both samples (the younger were somewhat under-represented and the older over-represented).

(Table 9 about here)

Descriptive statistics in Table 10 show that sons' average prestige was essentially the same as for daughters, both being higher than fathers' average prestige and much higher than mothers' average prestige. Average differences between son-father were larger than between daughter-father. A working mother was more frequently observed in the case of daughters than in the sons. Daughters were, on average, a bit younger and, clearly, better educated.

(Table 10 about here)

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Table 1 Prestige of fathers, sons, and daughters, by quintile prestige of sons and daughters

	Sons				Daughters			
	Prestige	Age	Father prestige	Mothers work (%)	Prestige	Age	Father prestige	Mothers work (%)
Mean	109.02	42.69	100.20	23.76	109.10	41.49	104.33	30.89
Quintile								
1st	67.17	41.58	88.60	23.30	65.35	43.73	90.06	31.15
2nd	86.42	42.96	93.17	24.59	87.11	39.50	97.03	35.48
3rd	98.77	42.55	96.76	23.19	99.38	41.25	100.67	31.77
4rd	115.01	43.00	102.98	23.06	119.61	41.06	110.92	27.27
Top	169.14	43.27	117.19	24.53	166.98	41.20	120.86	30.40

Table 2 Quintile transition matrices for prestige of fathers and sons and for fathers and daughters, and some mobility indices

	Father's quintile				
Son's quintile	1st	2nd	3rd	4rd	Top
1st	0.284	0.259	0.203	0.126	0.129
2nd	0.252	0.294	0.222	0.152	0.081
3rd	0.158	0.182	0.223	0.258	0.180
4rd	0.222	0.148	0.167	0.265	0.199
Top	0.085	0.118	0.187	0.199	0.412

	Father's quintile				
Daughter's quintile	1st	2nd	3rd	4rd	Top
1st	0.322	0.277	0.163	0.158	0.082
2nd	0.337	0.157	0.204	0.132	0.171
3rd	0.181	0.194	0.222	0.284	0.120
4rd	0.086	0.201	0.220	0.234	0.260
Top	0.075	0.172	0.192	0.194	0.368

	Immobility	Upward mobility	Downward mobility	Total mobility	Shorrocks	Bartholomew's index	Bartholomew's index adjusted
Sons	1.478	1.718	1.809	3.527	0.881	1.257	2.835
Daughters	1.303	1.852	1.851	3.703	0.925	1.265	2.738
RRR of gender coefficient in multinomial logit		0.935***	0.920***				

Immobility: a simple summation of the elements of the leading diagonal. Upward mobility: the summation of the elements below the leading diagonal. Downward mobility: the summation of the elements above the leading diagonal. Total mobility: the summation of the elements above and below the leading diagonal. The Shorrocks index, computed, for a given (square) matrix *A* of a dimension *n*, as (*n* - *traceA*)/(*n* - 1). Bartholomew's index: a weighted mobility index, if a_{ij} is the proportion of daughters or sons in quantile *j* whose parents were in quantile *i*, is defined by $(1/n)\Sigma_i\Sigma_j a_{ij}\,|i-j|$, and a Bartholomew's index adjusted version computed by $(1/n)\Sigma_i\Sigma_j a_{ij}\,(i-j)^2$.
RRR: relative risk ratio, value less than 1 indicates that the probability of mobility is fewer for sons than for daughters.
***p< .001

Table 3. Ordinary least squares (OLS) estimates on the relationship between son's/daughter's prestige and father's prestige

Sons	Model I		Model II		Model III	
	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
Ln father's prestige	0.352***	0.012	0.353***	0.011	0.358***	0.011
Mother works			-0.007	0.006	0.003	0.003
Age					0.010***	0.001
Age2/100					-0.010***	0.002
Year: 2008	0.013***	0.001	0.013***	0.001	0.012***	0.001
Year: 2009	0.016***	0.001	0.016***	0.001	0.014***	0.001
Year: 2010	0.020***	0.001	0.021***	0.001	0.016***	0.001
Constant	3.035***	0.053	3.024***	0.052	2.742***	0.052
Adjusted R^2	0.108		0.108		0.116	
Observations	16,805					
Daughters	Model I		Model II		Model III	
	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
Ln father's prestige	0.325***	0.018	0.325***	0.018	0.322***	0.018
Mother works			-0.014***	0.004	-0.014**	0.005
Age					0.011***	0.001
Age2/100					-0.014***	0.001
Year: 2008	0.012***	0.001	0.012***	0.001	0.011***	0.001
Year: 2009	0.007***	0.001	0.007***	0.001	0.006***	0.001
Year: 2010	0.001***	0.000	0.001***	0.0001	0.002***	0.0001
Constant	3.144***	0.080	3.147***	0.081	2.980***	0.087
Adjusted R^2	0.100		0.100		0.105	
Observations	11,985					

Robust standard errors clustered at the survey-year level.
Differences in coefficients corresponding to prestige for sons and daughters are statistically significant.
**p < .01; ***p < .001

Table 4 Ordinary least squares (OLS) estimates on the relationship between son's/daughter's prestige and father's prestige (by birth cohort)

Sons	<40 years						41-54 years						>54 years					
	Model I		Model II		Model III		Model I		Model II		Model III		Model I		Model II		Model III	
	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
Ln father's prestige	0.338***	0.016	0.338***	0.016	0.333***	0.016	0.356***	0.011	0.356***	0.011	0.358***	0.011	0.414***	0.021	0.415***	0.021	0.413***	0.021
Mother works			0.004	0.003	0.015	0.010			-0.014	0.009	-0.013	0.009			0.008	0.012	0.008	0.012
Age					0.042***	0.004					0.022	0.020					-0.010	0.019
Age2/100					-0.058***	0.007					-0.019	0.020					0.010	0.017
Year dummies	√		√		√		√		√		√		√		√		√	
Constant	3.073***	0.074	3.074***	0.074	3.169***	0.075	3.020***	0.051	3.020***	0.051	3.108***	0.491	2.766***	0.090	2.764***	0.090	3.011***	0.570
Adjusted R^2	0.105		0.105		0.119		0.106		0.106		0.108		0.139		0.139		0.140	
Observations	7,340						6,710						2,755					
Daughters	<40 years						41-54 years						>54 years					
	Model I		Model II		Model III		Model I		Model II		Model III		Model I		Model II		Model III	
	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
Ln father's prestige	0.287***	0.026	0.287***	0.026	0.282***	0.027	0.354**	0.033	0.353***	0.033	0.353***	0.033	0.356***	0.026	0.352***	0.023	0.352***	0.022
Mother works			-0.006***	0.001	-0.003***	0.001			-0.022**	0.007	-0.022**	0.007			-0.031**	0.011	-0.028**	0.010
Age					0.046***	0.005					-0.014	0.043					-0.085	0.072
Age2/100					-0.071***	0.009					0.014	0.045					0.067	0.060
Year dummies	√		√		√		√		√		√		√		√		√	
Constant	3.338***	0.119	3.337***	0.119	3.630***	0.088	3.003***	0.151	3.010***	0.150	3.377***	0.916	2.944***	0.116	2.968***	0.101	3.373***	2.091
Adjusted R^2	0.082		0.082		0.089		0.111		0.112		0.113		0.125		0.126		0.130	
Observations	5,703						4,735						1,547					

Robust standard errors clustered at the survey-year level.
Differences in coefficients corresponding to prestige for sons and daughters are statistically significant.
**p< .01; ***p< .001

Table 5 Ordinary least squares (OLS) estimates on the relationship between son's/daughter's prestige and father's prestige or the maximum between father's and mother's prestige

Sons	Case 1		Case 2		Case 3		Case 4	
	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
Father's prestige	0.345***	0.015						
Ln father's prestige			0.357***	0.012	0.337***	0.013		
Ln max (fprestige, mprestige)							0.347***	0.011
Age <41 (reference)								
41-54 years			0.031***	0.003				
>54 years			0.039***	0.008				
Age x Ln father's prestige					0.002*	0.001		
Year dummies	√		√		√		√	
Constant	72.971***	1.504	2.987***	0.052	2.998***	0.053	3.042***	0.052
Adjusted R^2	0.094		0.111		0.114		0.106	
Observations	16,892							
Daughters	Case 1		Case 2		Case 3		Case 4	
	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
Father's prestige	0.298***	0.020						
Ln father's prestige			0.322***	0.017	0.323***	0.019		
Ln max (fprestige, mprestige)							0.330***	0.018
Age <41 (reference)								
41-54 years			-0.010	0.007				
>54 years			-0.061***	0.005				
Age x Ln father's prestige					-0.002*	0.001		
Year dummies	√		√		√		√	
Constant	77.448***	2.043	3.168***	0.076	3.152***	0.079	3.114***	0.082
Adjusted R^2	0.092		0.103		0.101		0.102	
Observations	11,985							

Robust standard errors clustered at the survey-year level.
In Case 1, prestige included in levels.
Differences in coefficients corresponding to prestige for sons and daughters are statistically significant.
* p < .05; **p < .01; ***p < .001

Table 6 Ordinary least squares (OLS) estimates on the relationship between son's/daughter's prestige and father's and mother's prestige. Samples in which the mother works when the children were 16.

Sons	Model III.a		Model III.b		Model III.c	
	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
Ln father's prestige	0.373***	0.019				
Ln mother's prestige			0.342***	0.010		
Ln max (fprestige, mprestige)					0.390***	0.017
Age	0.011***	0.002	0.011***	0.003	0.012***	0.002
Age2/100	-0.011***	0.003	-0.012***	0.003	-0.011***	0.003
Year dummies	√		√		√	
Constant	2.675***	0.077	2.845***	0.043	2.544***	0.081
Adjusted R^2	0.125		0.098		0.129	
Observations	3,990					
Daughters	**Model III.a**		**Model III.b**		**Model III.c**	
	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
Ln father's prestige	0.344***	0.022				
Ln mother's prestige			0.389***	0.028		
Ln max (fprestige, mprestige)					0.388***	0.029
Age	0.009***	0.002	0.011***	0.001	0.010***	0.002
Age2/100	-0.013***	0.002	-0.016***	0.001	-0.013***	0.002
Year dummies	√		√		√	
Constant	2.908***	0.124	2.700***	0.134	2.659***	0.156
Adjusted R^2	0.126		0.136		0.144	
Observations	3,702					

Robust standard errors clustered at the survey-year level.
Differences in coefficients corresponding to prestige for sons and daughters are statistically significant except in Model III.c.
***p < .001

Table 7 Probit estimation of more prestige than the father

Sons	Model I		Model II		Model III	
	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
Ln father's prestige	-1.991***	0.042	-1.991***	0.042	-1.986***	0.043
Mother works			-0.005	0.005	0.029	0.018
Age					0.043***	0.007
Age2/100					-0.043***	0.008
Year dummies	√		√		√	
Constant	9.093***	0.188	9.092***	0.189	8.067***	0.098
Pseudo R^2	0.124		0.124		0.127	
Observations	16,892					
Daughters	Model I		Model II		Model III	
	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
Ln father's prestige	-2.132***	0.079	-2.130***	0.078	-2.149***	0.074
Mother works			-0.079**	0.031	-0.080**	0.031
Age					0.034***	0.002
Age2/100					-0.046***	0.008
Year dummies	√		√		√	
Constant	9.830***	0.357	9.843***	0.359	9.348***	0.299
Pseudo R^2	0.150		0.150		0.152	
Observations	11,993					

Robust standard errors clustered at the survey-year level.
Differences in coefficients corresponding to prestige for sons and daughters are statistically significant.
**p < .01; ***p < .001

Table 8 OLS estimates of the difference in prestige level between son/daughter and father on father's prestige

Sons	Model I		Model II		Model III	
	Coef.	Std. Err	Coef.	Std. Err	Coef.	Std. Err
Ln father's prestige	-73.378***	2.315	-73.335***	2.311	-72.738***	2.257
Mother works			-0.591	0.317	0.634	0.366
Age					1.253***	0.219
Age2/100					-1.150***	0.275
Year dummies	√		√		√	
Constant	341.774***	10.513	341.702***	10.498	307.798***	9.918
Adjusted R^2	0.248		0.248		0.253	
Observations	16,892					
Daughters	Model I		Model II		Model III	
	Coef.	St. Err	Coef.	St. Err	Coef.	St. Err
Ln father's prestige	-80.875***	2.991	-80.845***	2.981	-81.202***	2.904
Mother works			-1.253	0.780	-1.183	0.799
Age					1.496***	0.128
Age2/100					-1.932***	0.167
Year dummies	√		√		√	
Constant	375.679***	13.679	375.899***	13.745	350.977***	13.777
Adjusted R^2	0.327		0.327		0.331	
Observations	11,993					

Robust standard errors clustered at the survey-year level.
Differences in coefficients corresponding to prestige for sons and daughters are statistically significant.
***p < .001

Table 9 Comparison Spanish Labor Force Survey (LFS) and ECVT. 2007-10

	LFS		ECVT	
	Men	Women	Men (sons)	Women (daughters)
Employment rate 16-64	71.22	54.93		
% in all employment	57.85	43.15	58.37	41.63
Employment distribution by age				
<41 years	50.48	54.28	43.68	47.58
41-54 years	37.08	36.21	39.93	39.51
>54 years	12.42	9.52	16.39	12.91

Table 10 Mean and standard deviations of variables in the samples of sons and daughters. ECVT and prestige scale

	Sons		Daughters	
	Mean	Standard Deviation	Mean	Standard Deviation
Prestige level	109.02	39.01	109.10	36.74
Father's prestige	100.20	34.53	104.33	37.12
Prestige level-father's prestige	8.82	43.48	4.77	43.63
Mother works	0.24	0.43	0.31	0.46
Mother's prestige	96.09	29.73	97.91	30.61
(number of observations)	(3,990)		(3,702)	
Age	42.69	10.90	41.49	10.62
$Age^2/100$	19.42	9.44	18.34	9.03
Educational level				
Compulsory studies	0.55	0.50	0.43	0.50
Non-compulsory secondary studies	0.24	0.43	0.24	0.43
Degree/university studies	0.21	0.41	0.33	0.45
Observations	16,805		11,985	

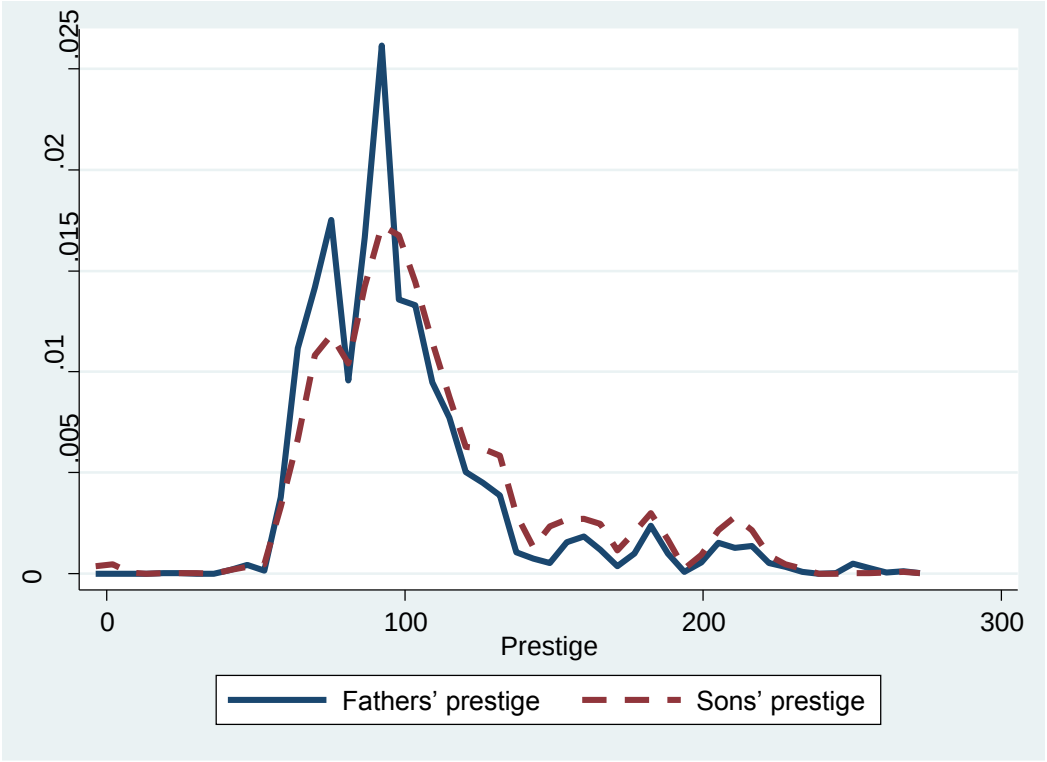

Fig. 1a Kernel density of fathers and sons' prestige

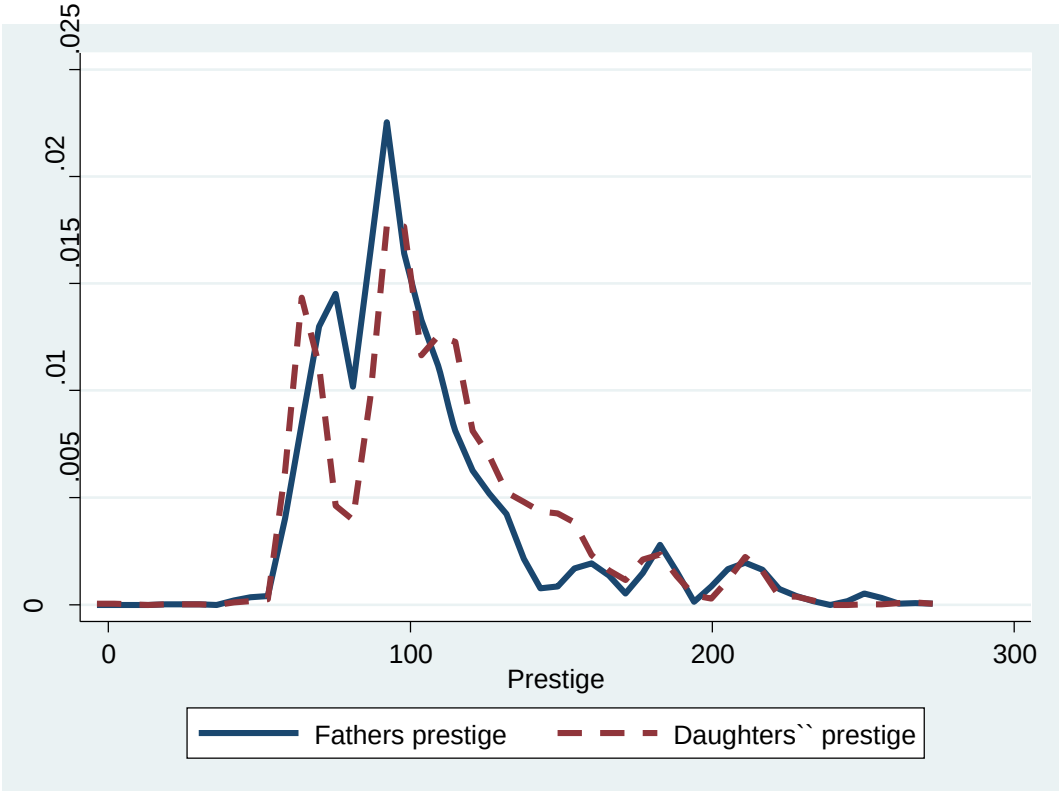

Fig. 1b Kernel density of fathers and daughters' prestige