Social exchange or reinforcement of women's educational advantage? The influence of educational assortative mating on occupational assortative mating for couples in Spain

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Abstract:

The reversal of the gender gap in education has transformed traditional patterns of homogamy, increasing the number of hypogamous couples. This change has been particularly intense in the case of Spain, a country of great interest due to the seemingly contradictory ambivalence of strong support for egalitarian attitudes and a high proportion of traditional couples. Using quarterly microdata from the Spanish Labour Force Survey between 2000 and 2018, applying generalised ordered-logit models, this research finds that educational hypogamy increases the probability of occupational hypogamy, but this transfer is not direct and depends on the occupational classification used. If possible economic rewards or gender differences in labour market access are considered, occupational hypogamy is considerably reduced and progress in women's educational attainment loses some of its positive influence. This result reinforces the importance of using different measures and indicators to analyse assortative mating, as well as different theoretical approaches to explain seemingly contradictory occupational equilibria.

Keywords:

Couples, Occupations, Assortative mating, Reversal of Gender Gap in Education.

Introduction

The reversal of the gender gap in education (hereafter, RGE) in most Western countries in recent decades has contributed to a radical change in the patterns of educational assortative mating (hereafter, EAM), most signally in homogamy trends, understood as the tendency of individuals to form couples with a partner with similar traits (Van Bavel, Schwartz and Esteve 2018). The number of couples in which women have higher educational levels than their partners – female educative hypogamy – has grown substantially (Esteve et al. 2016). This female advance has already been transferred to other socio-economic outcomes, such as the relative position of women in income or employment (Khamis and Ayuso 2022), although the transfer mechanism of merits involved has rarely been analysed in detail.

The aim of this article is twofold. On the one hand, it describes changes in occupational assortative mating (hereafter, OAM) and compares them with changes in EAM. On the other hand, it explores how EAM is associated with the relative occupational position by gender within couples. This analysis can be framed within the open debate on the pace of what has been called the 'Gender Revolution' (England 2010), further elucidating possible inconsistencies when hypogamy is measured in terms of achievements other than education.

Some of the literature has found that women who live in educationally hypogamous couples are more likely to 'reinforce' that female advantage and obtain

better socio-economic outcomes, even becoming the primary breadwinners of their households (Klesment and Van Bavel 2017). In this type of union, the sharing of economic resources and care practices is more egalitarian (García Román 2021). Other research has found that the most qualified women tend to 'exchange' their educational superiority by pairing upward with men in higher socio-economic positions (Schwartz, Zhen and Xie 2016). This hypothesis of social exchange would be supported from individualistic perspectives, taking as reference the position of women and analysing which form of couple equilibrium maximises their household's economic resources. Social exchanges are also consistent with a neutralising reaction to female gender advantages in order to prevent the RGE from reaching other spheres traditionally under male control (Bertrand, Emir and Pan 2015).

The bulk of the literature on assortative mating has focused on the effects of educational homogamy on income inequality (Blossfeld 2009; Wise and Zangger 2017). Economic differences between couples appear to be less and less associated with the increase in the number of couples where the partners share the same level of education (Breen and Salazar 2011; Qian 2017). Only a few studies expand the range to other couple types (Boertien and Permanyer 2019; Grow and Van Bavel 2015). They find that the potential influence of educational hypogamy on income inequality is more limited than would be expected from changes in the EAM distribution, especially in countries where female labour participation has expanded.

Recent evidence on OAM is scarce and available for only a few countries. Schwartz, Wang and Mare (2021), looking at the US, find that the growing number of women working as highly qualified professionals has led to a limited increase in the resemblance of partners' occupational outcomes. Nonetheless, occupational homogamy is stable, and its observed levels are considerably lower than those of educational homogamy, irrespective of the level of disaggregation used in the analysis. The possible transfer of merits between the two outcomes is not direct. Chudnovskaya and Kashyap (2020), examining Sweden, show that women in educationally hypogamous unions tend to have a higher background in terms of social class and work in occupations with higher prestige but lower income than their partners.

The results presented in this article are of particular interest for the literature on couples, family change and occupations for several reasons. First, it is conducted in Spain, a country where the RGE has arrived relatively late but has been particularly rapid and intense (Van Bavel 2012). In this society there is an ambivalent balance, in which considerable support for egalitarian attitudes to gender coexists with a strong preponderance of male-dominated couples and underdeveloped policies on work-life balance (Moreno-Mínguez, Ortega and Gamero-Burón 2017; Drobnič and Guillén 2011). Second, it analyses OAM, a type of assortative mating that has been less documented due to difficulties in its measurement, from a micro-sociological approach over a period of almost twenty years and several cohorts of couples. Third, the connections between EAM

and OAM are explored to better understand how female educational advantages are transmitted to other socio-economic outcomes.

Literature review

This section discusses theories relating to the study of labour market participation by gender, reviews recent findings in research concerning partners' occupations and the possible determinants that mediate their connection to EAM and concludes with a summary of the main questions and hypotheses.

Gender differences in labour attachment have been discussed from various theoretical perspectives applying different levels of analysis and focusing on different outcomes. For decades, the New Family Economics (NFE) has studied employment from a predominantly individual perspective, arguing that occupational gender differences are due to inequalities in human capital investments (Pollak 2003). With the new educational position of women, it would therefore be expected that couples with educational advantages in favour of the female partner would experience a profound increase in female specialisation decisions. Nevertheless, this has not been confirmed in the literature (García Román 2020; Gonalons Pons and Gangl 2021). Several studies show that women who accumulate more human capital than their partners are also more likely to achieve higher socio-economic levels (Khamis and Ayuso 2022; Klesment and Van Bavel 2017); however, specialisation would not be the main explanatory theoretical mechanism, especially if educational and occupational attainment are compared at the same time.

Sociological functionalist explanations such as social exchange theory, originally proposed by Merton (1941), share the conceptual essence of the NFE and are closer to the new bargaining models in which labour supply depends not only on educational attainment but also on other distribution factors, incorporating social norms and other institutional determinants (Himmelweit et al. 2013). The logic of social exchanges would be consistent with the specialisation mechanism but comparing more than one couple resource at a time and considering the position of both spouses. If the characteristics of the partners are very different and they adopt family strategies with female or male dominance in both resources compared, the benefits or utility of the relationship may be inefficient. Instead, social exchange theory predicts some 'specialisation' of spouses in those resources for which they are better positioned, thus compensating for relative gender strengths and weaknesses within couples (Gullickson and Kang 2010). In the resources compared in this study (education and occupation), women in educationally hypogamous unions would use that advantage to match with men in higher-level occupations, 'specialising' in the most favourable achievements for their gender. This explanatory hypothesis has worked for social-class research in the United States (Kalmijn 2010; Schwartz, Zhen and Xie 2016).

Sociological gender strands, with Doing Gender as the core theory, explain occupational differences as inequalities that stem from the social structure and are manifested in the social norms and conditions that women subsequently face in the labour

market (West and Zimmerman 1987). At the institutional and macro-sociological level, countries with greater social support for the primary breadwinner model and less developed family policies have shown a lower prevalence of couples where women achieve better employment positions than their partners (Gonalons Pons and Gangl 2021; Thébaud 2010).

At the micro-sociological level of the couple, the evidence obtained may seem contradictory. While the entry of women *en masse* into the labour market has been interpreted as a gender equaliser that compensates for the asymmetrical distribution of paid and unpaid work (Harkness 2013), with even positive consequences on the educational attainment of their daughters (Ortiz-Gervasi 2021), other research finds that the translation of female educational advantages is not straightforward and may challenge certain barriers. Social pressure or perceived loss of masculine identity for males may prevent situations of female superiority within couples (Bertrand, Emir and Pan 2015). Some neutralisations of gender deviance have been observed for specific points in the US income distribution at the top and lower-middle levels, although it is not a behaviour generalisable to all situations of female hypogamy (Yavorsky et al. 2019). This gender neutralisation reaction has manifested in divorce patterns when analysing intra-couple income-sharing dynamics, although it has not yet been confirmed in employment outcomes.

The theory of multiple equilibria proposed by Esping-Andersen and Bilari (2015) can help in understanding social scenarios where a clear translation of the RGE into the labour market coexists with a more limited pace of change in certain occupational characteristics of jobs. Three types of couple balances are recognised: traditional (only the man works or has a position of economic dominance), egalitarian (both work and contribute symmetrically to household income and care), and unstable (between the two above). In societies with unstable equilibria, egalitarian and traditional couples may have similar representation. This is the case in Spain, which has shown strong growth in female employment rates and egalitarian attitudes among couples in younger cohorts, while traditional couples persist, especially after the birth of the first child (Domínguez-Folgueras, Jurado-Guerrero and Botía-Morillas 2018; Esping-Andersen et al. 2013). In this context of ambivalent outcomes, unstable equilibria can persist until a shift in social gender attitudes is reproduced at the institutional level and reflected in individual actions, leading to the predominance of one type of couple balance (Esping-Andersen and Bilari 2015).[1]

Recent research on OAM has been conducted mainly in the context of the US. From individualistic approaches, Mansour and McKinnish (2018) show that occupational homogamy predominates in more gender-segregated jobs due to greater opportunities for candidates of the under-represented sex. From couple approaches, occupational homogamy is more likely to occur among college graduates if they have been trained in

the same vocational field of study or if they reach the highest positions in the class structure (Han and Qian 2021; Toft and Harness 2020). In terms of evolution, occupational homogamy has grown slightly due to the higher percentage of women in the large groups of skilled professionals, and it has replaced other traditional gender pairings such as doctors with nurses or managers with secretaries (Schwartz, Wang and Mare 2021).

Despite the expansion of female university graduates at the top of the employment distribution, occupational hypogamy is less prevalent than educational hypogamy, particularly if micro-classes are used to classify jobs in the American case (Schwartz, Wang and Mare 2021) or economic criteria are used to rank occupations in the Swedish case (Chudnovskaya and Kashyap 2020). This discrepancy between female educational advancement and female occupational advancement could be explained by the fact that not all the educational achievements of spouses are directly transferred to the labour participation of couples (Gonalons-Pons and Schwartz 2017). Some gender asymmetries are still occurring in labour markets and can explain women's difficulties in attaining occupations that are equally or more highly valued than those of men.

On the one hand, there is the motherhood penalty, defined as the loss of job attachment suffered by women due to the birth of children, which can result in retirement, disengagement, or a professional switch (Kahn, García-Manglano and Bianchi 2014). Some studies in Spain, where public provision of family services is limited, have found

that a woman's likelihood of being the main breadwinner is reduced if there are children in the household (Khamis and Ayuso 2022; García Román 2020). On the other hand, partners' preferences of certain jobs are still conditioned by social gender norms, precisely because of the possibilities offered by some jobs to reconcile the demands of family and work (Gangl and Ziefle 2009). Those jobs with more desirable features for reconciling care and paid work and higher intrinsic motivation, in sectors with more flexible working hours and conditions, appear to be attractive to highly skilled women who want to balance their reproductive aspirations with potential career development (Begall and Mills 2013).

While in the case of the US, more feminised positions have been associated with lower status in the marriage market and have been denoted as 'women's' occupations (McClintock 2020), in Spain, many positions in the public sector, such as health or education professionals, which account for a large proportion of female employment, are highly valued socially, require highly trained skills, and offer better work-life balance options than the private sector (Ibáñez and García Mingo 2021). Thus, both sources of gender asymmetries – the motherhood penalty and unequal job preferences – could be mediating the inconsistencies between EAM and OAM.

From this review of previous theories and research, two questions that may fill a gap in the literature emerge. In general terms, it is important to explore how OAM has changed and to compare it with the evolution of EAM by cohorts, especially for a country

such as Spain, with a late but particularly intense RGE. It would be expected that, in line with studies for other countries (Boertien and Permanyer 2019; Chudnovskaya and Kashyap 2020; Schwartz, Wang and Mare 2021), there would be a growth in female occupational hypogamy, yet its incidence would be lower than that observed for the same type of couple in terms of education. Specifically, the relationship between EAM and OAM will be analysed precisely in order to ascertain more about the possible factors behind discrepancies in the translation of female partners' educational achievements into occupational outcomes. Considering women's position within couples as the point of reference, three research hypotheses are proposed.

The hypothesis of *reinforcement* of women's educational advantages (H1) assumes a positive association between educational hypogamy and occupational hypogamy. The transfer would be direct and not dependent on the job characteristics compared. The *social exchange* hypothesis (H2) predicts a negative association between educational hypogamy and occupational hypogamy. Women with higher educational levels than their partners would seek to exploit their qualification advantages to maximise the perceived benefit from the union, pairing up with men in occupations of the same or higher level than their own. The last hypothesis of *partial reinforcement* of women's educational advantages (H3), considering the reasoning behind the previous two, argues that the permeability between education and occupation within couples is positive but constrained by some gender-differential drivers. Women's chances of attaining higher-level occupations than

their partners will be greater if they are also more qualified; nonetheless, the transfer of educational advantages will decrease in cases where those employment resources have historically been under male control, related to economic power, and thus presumably scarcer for female workers, such as potential income. In these cases, the achievement of occupational gender convergence will be slower to arrive, even for women with university studies.

Methodological approach

This study uses quarterly microdata from the *Encuesta de Población Activa*, the national version of the EU-Labour Force Survey. This source has a large simple size– around 60,000 households each quarter – and makes possible to connect the information available for all the household members. Taking advantage of this, the original files are restructured at the couple level with a series of filters.

First, heterosexual couples in which both partners were between 30 and 50 years old were selected. Before the age of 30, union formation is limited in Spain, leaving the parental home at a young age is rare, and the employment levels are significantly lower (which is also the case for those over 50). Second, since the educational and occupational qualifications of immigrants are often considerably different, only couples formed by people born in Spain were kept in the sample. Third, given that a sixth part of the sample in the Spanish LFS is renewed every quarter and labour participation can be very different over the course of the year (e.g., summer or winter holidays), to avoid seasonality and

repetition of observations in the analysis, only the second quarters from 2000 to 2018 were considered. This resulted in a sample of 192,395 couples. It is important to note that partners who are unemployed are included in this sample because their previous occupation is known if they have been out of the labour market for 12 months or less. As a robustness check, a larger sample of 270,707 including long-term unemployed and inactive partners was used.

Dependent variables

Three different occupational classifications were used to create our dependent variable; the main conceptual approach and operational benefits are summarised in *Table 1* below. The choice of several occupational measures is based on two arguments of theoretical and empirical nature. On the one hand, possible gender differences are captured, since some women take jobs that are well valued in terms of educational investment but worse positioned if they are measured according to financial or economic rewards (Connelly, Gayle and Lambert 2016). On the other hand, as Christoph, Matthes and Ebner (2020) suggest, when several occupational classifications with different conceptual properties are applied, the estimated effects and the different levels of OAM can be interpreted as a sensitivity analysis that increases rigour and should provide greater confidence in the results obtained.

To define OAM according to the ESeG classification involves using the only categorisation that is already operationalised and based on sociocultural similarity. If both

work in jobs in the same category, the couple is classified as homogamy; if the female partner is in a higher-level category, the couple is classified as hypogamy, and if the opposite applies, hypergamy. Since there is a special category for those outside the labour market, it is possible to capture occupational differences caused by a different employability by gender.

To define OAM according to ISEI and average years of academic input, as continuous non-categorical indicators, a similar procedure is applied: an index is constructed after ordering the occupations for each sex separately. Each occupation is assigned a value from 0 to 100 according to its position in these rankings, with the highest values given to jobs that have the highest ISEI or require more years of education to access. Thus, ten points of difference in these indices are equivalent to one decile in the distribution of occupations by sex, and this is the threshold used to distinguish between homogamy, hypogamy, and hypergamy.

Table 1. Summary of the main indicators used to rank occupations

	ESeG	**Academic input**	**ISEI**
Concept	Grouping of individuals whose jobs have similar economic, cultural, and social characteristics. (Christoph, Matthes and Ebner, 2020)	*Cybernetic* indicator of the effort needed to achieve an occupation, as seen in current workers who are established in their jobs. (Garrido and Rodríguez 2011)	Attributes that convert a person's main resource into a person's main reward. (Ganzeboom, De Graaf and Treiman 1992)

Approach	Categorical. No theoretical considerations are assumed.	Gradational. Higher values are assigned to those jobs that people invest more time to reach.	Continuous. Based on the economic rewards of each occupation, discounting training.
Main Advantages	*Internationally comparable. *Special value to people who are out of the labour market. *Technical construct similar to educational categories.	*National focus and targeting Spanish labour-market structure. *Considers gender differences in human-capital strategies.	*Internationally comparable. *Proxy of earnings and return on educational investments.

Statistical modelling and identification strategy

The latent variable used to construct the occupational types of couples comes from an ordering with wider ranges of values than the categories of the dependent variable finally defined. Usually, ordered-logistic models are estimated based on this kind of variables, although in this case they cannot be applied because the core assumption of parallel regressions is violated (Williams 2006). This implies that the slope of the coefficients of some explanatory variables is not the same across the categories of the dependent variable. To solve this problem without skewing the results – keeping as many degrees of freedom as possible – generalised ordered-logit models are estimated. These are similar to simple ordered-logit models, with the virtue of changing only the coefficient for those regressors that violate the proportionality ratio assumption.

Since in these non-linear models the interpretation of the coefficient is neither straightforward nor easy (Mood 2010), they are replaced by estimated average-marginal

effects (AMEs). AMEs are interpreted as the change in the probability of each occupational type of couple produced by an increase of one unit – or category over the baseline – caused by an independent variable. To give a causal interpretation to the AMEs estimated for the educational types of couples, different mediating variables related to EAM and OAM are introduced into the models. Their distribution and the OAM rates – the main dependent variable – are shown in *Table 2*.

These mediating covariates are introduced at three phases: an initial stage with only the type of partner in terms of education and the woman's educational level, a second stage adding the household composition variable, and a final stage with the employment conditions of the female partner. The main objective is to measure the direct effect of EAM on OAM, discounting the indirect effects that it has through these groups of mediators, isolating its different forms of influence (Keele, Stevenson and Elwert 2020).

Table 2. OAM rates and distribution of main explanatory variable and control covariates

		N	WO>MO	WO=MO	WO<MO
X1: EAM and women's education	*Ref: Homogamy (WE=ME)*	86,194	24.0	42.0	34.0
	Hypogamy (WE>ME)	66,697	51.9	27.2	20.9
	Hypergamy (WE<ME)	39,504	16.8	26.8	56.4
	Educational level of female partner				
	Ref: Primary schooling (ISCED-1)	20,878	18.9	37.1	44.0
	Lower secondary (ISCED-2)	48,004	24.1	31.7	44.2
	Lower vocational (ISCED-3)	19,495	31.3	28.3	40.4
	Baccalaureate (ISCED-4)	21,017	30.2	31.3	38.4
	Higher vocational (ISCED-5)	22,394	38.5	28.2	33.3
	University (ISCED-6)	60,626	41.9	38.7	19.4

X2: Household composition	**Number of children and age of the youngest**				
	Ref: No children in the household	50,218	31.4	33.3	35.3
	One child, aged 2 or less	15,536	38.4	33.5	28.1
	One child, aged between 3 and 5	12,334	37.3	31.4	31.3
	One child, aged over 5	42,846	29.6	32.9	37.5
	Two or more children, aged 2 or less	19,610	35.0	34.6	30.4
	Two or more children, aged between 3 and 5	19,396	33.5	34.2	32.2
	Two or more children, aged over 5	32,474	29.7	35.5	34.8
X3: Women's job characteristics	**Sector of activity**				
	Ref: Agriculture (NACE A)	9,749	15.4	42.7	41.9
	Industry and construction (NACE B–F)	23,880	33.3	32.4	34.3
	Trade, distribution, and hospitality (NACE G–I)	52,370	31.0	32.4	36.6
	Finance and others (NACE J–O)	45,735	30.8	34.6	34.5
	Education and health (NACE P and Q)	44,893	40.7	34.0	25.3
	Entertainment and household (NACE R–U)	15,768	24.7	31.2	44.1
	Occupational segregation				
	Ref: Balanced	132,791	35.9	35.3	28.8
	Masculinised	8,672	29.6	41.8	28.6
	Feminised	50,932	23.0	28.3	48.7
	Professional situation				
	Ref: Employer or self-employed	22,172	36.2	38.7	25.2
	Public-sector employee	48,193	38.8	35.8	25.3
	Private-sector employee	122,030	28.9	32.0	39.2
	Distribution of hours of paid work				
	Ref: One of them is not working	43,667	35.8	30.9	33.3
	Both work the same hours	45,638	31.0	40.7	28.4

Woman works more hours than the man	18,276	30.9	32.9	36.1
Woman works fewer hours than the man	84,814	31.9	32.0	36.1
Type of contract				
Ref: not working	34,895	23.6	32.4	44.0
Fixed term	18,674	33.8	31.1	35.0
Permanent	138,826	34.2	34.4	31.4
Years of experience				
Ref: not working	34,895	23.6	32.4	44.0
Less than 2	31,632	29.3	31.9	38.7
Between 2 and 5 years	25,858	31.5	33.0	35.6
Between 5 and 10 years	34,653	36.4	33.5	30.1
More than 10 years	65,357	36.3	35.7	28.0
N	192,395	32.2	33.7	34.1

Notes: *WO = Woman's occupation; MO = Man's occupation.*

Results

This section has three main objectives: first, to provide a comparison of the evolution of EAM and OAM, as well as some indicators of partners' educational and occupational success; second, to measure the change in the levels of OAM according to the different occupational classifications used, and to assess the intensity of internal differences in couples where the partners have different occupational levels; and third, to analyse the patterns of influence of EAM on OAM by introducing different covariates sequentially into the models, testing the robustness of the estimated effects.

Trends in partners' educational and occupational resemblance

Figure I shows the evolution of couple types by female cohorts depending on whether educational or occupational levels are used to define them. The general trend in educational and occupational attainment is towards an increase in unions where female partners achieve higher levels than male partners: hypogamy rises from 23.5% in education and 23.9% in occupation in the 1950-1960 cohort to 43.7% and 39.5% respectively in the 1981-1988 cohort, becoming the largest type of couple in both dimensions for the more recent generations.

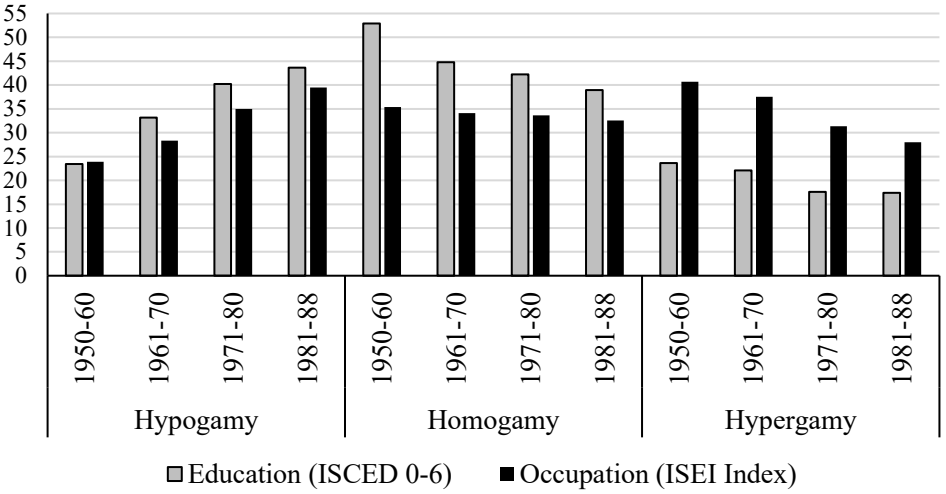

Figure I. Types of educational and occupational couples by female cohorts (values in %)
Source: Spanish-LFS quarterly microdata.

Nevertheless, there are marked differences between EAM and OAM for homogamous and hypergamous couples.[2] For all cohorts, occupational hypergamy is at

least ten percentage points higher than educational hypergamy, while homogamy is considerably more frequent when comparing educational outcomes. In other words, the progression in the reversal of traditional gender roles seems to have been faster and more intense in the educational dimension. When labour market outcomes are considered, the transition towards similarly endowed couples is rarely observed and male-dominated unions, although decreasing, still have considerable representation. These divergences observed between the evolution of EAM and OAM can be better understood by analysing individual performance by gender in each dimension. This information is shown in Figure 2, which provides several educational and occupational indicators for both partners.

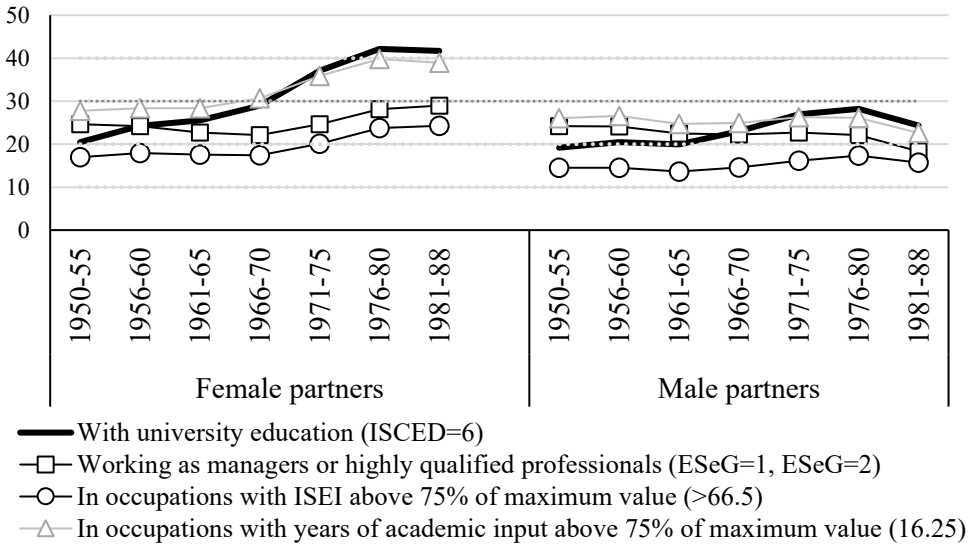

Figure 2. Educational and occupational attainment of partners by cohorts and gender

Source: Spanish-LFS quarterly microdata.

In all the indicators considered, female partners have managed to outperform male partners. Even though, the growth is clearly visible in the percentage with university education, which doubles for women in a couple from 20% in the 1950-1955 cohort to over 40% in the 1981-1988 cohort. This percentage also increases for the men, but it does not exceed 25% in most of the cohorts. This marked increase in the number of female spouses with a university education is only partially reflected in the percentage of women working in occupations with a higher entry barrier in terms of years of study, which is the only job characteristic that captures the gender imbalance in favour of women (almost 40% in the 1976-1988 cohorts compared to less than 25% for male partners).

The reversal of the gender gap is more moderate in the other two occupational measures: the percentage of female managers or highly qualified professionals increases to 29% (18% for male workers), and the percentage for occupations with a high ISEI reaches 24.3% (16% for male workers). In short, women's human capital endowments have improved and even doubled generationally, although females' occupational progress is considerably lower. Many of the women who achieve a university degree do not subsequently enter well-paid occupations or managerial positions in their organisations.

OAM by type of classification used to measure the level of jobs

Figure 3 illustrates the types of couples by cohorts based on different occupational classifications to sort jobs by sex. Occupational hypogamy, as seen in the previous section, increases to become the largest category of couple in cohorts born after 1970,

irrespective of the classification used for ranking jobs. Despite this general trend, there are important nuances depending on the classification used to measure the level of occupations.

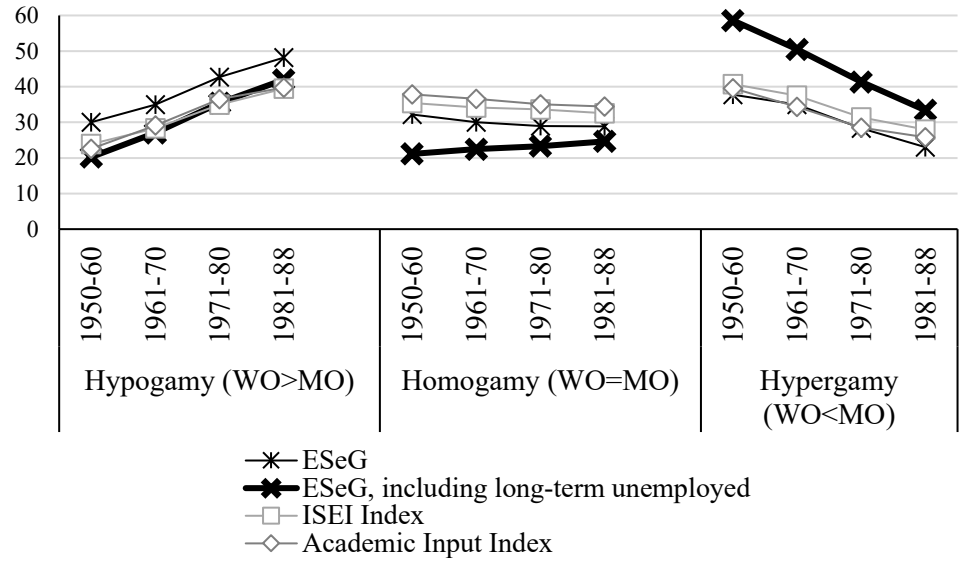

Figure 3. Occupational couple types by job classifications (values in %)

Source: Spanish-LFS quarterly microdata.

On the one hand, the lower the level of disaggregation of occupations, the higher the percentage of female spouses who exceed the occupational level of males. The occupational hypogamy defined on the basis of the ESeG classification, which has seven categories and one digit of disaggregation, maintains levels more than five percentage points above the rest of the classifications used, conceptually constructed with three digits of disaggregation. The differences between the ISEI index and the Academic Input index

are lower, with occupational hypergamy just 3% higher in the ISEI-based classification, which is closer to the potential economic rewards in each job.

On the other hand, when partners who are unemployed or inactive (out of the labour market) are included in the sample, as seen in the expanded ESeG classification, the advance of occupational hypogamy is drastically slowed, homogamy is reduced significantly, and hypergamy clearly increases. This is because differences in labour-market participation rates between men and women remain high in Spain, restricting the shift towards female occupational superiority within couples. Even with these limitations, the entry of women into the labour market for the 1981-1988 cohort also allows occupational hypogamy to exceed traditional occupational hypergamy by a significant margin in the extended ESeG classification.

Association between EAM and OAM: models' estimation

The results of the estimated models for the occupational hypogamy category of the dependent variable are included in Table 3. This is the type of partnership that has grown the most, and hence, the following comments will focus on those couples in which women get higher-level jobs.[3] In general, women who achieve a higher level of education than their partners also have a significantly higher probability of attaining a higher-level occupation, regardless of the type of classification used to rank jobs. In this sense, there seems to be some permeability between the educational and occupational attainment of

couples; nevertheless, this translation is not complete and depends on several factors that determine the link between EAM and OAM.

Table 3. AMEs of EAM on the probability of Occupational Hypogamy (WO>MO)

		ESeG	ISEI	Academic Input	ESeG *(extended sample)*
X1: EAM and women's education.	*Ref: Homogamy (WE=ME)*				
	Hypogamy (WE>ME)	0.287***	0.269***	0.296***	0.220***
	Hypergamy (WE<ME)	-0.013***	-0.047***	-0.051***	-0.017***
	Adjusted R2	0.056	0.067	0.081	0.061
X1 + X2: Including household composition.	*Ref: Homogamy (WE=ME)*				
	Hypogamy (WE>ME)	0.287***	0.269***	0.296***	0.219***
	Hypergamy (WE<ME)	-0.014***	-0.047***	-0.052***	-0.017***
	Adjusted R2	0.057	0.068	0.082	0.063
X1 + X2 + X3: Including women's job characteristics.	*Ref: Homogamy (WE=ME)*				
	Hypogamy (WE>ME)	0.294***	0.283***	0.307***	
	Hypergamy (WE<ME)	-0.031***	-0.052***	-0.059***	
	Adjusted R2	0.111	0.097	0.112	
	N	192,414	192,414	192,414	270,707

Notes: WO = Woman's occupation, MO = Man's occupation, WE = Woman's education, ME = Man's education.

Significance test: *P<0.10, **P<0.05, ***P<0.01

The first factor that seems to influence the ability to transfer the educational advantages of female partners to their occupations are the job characteristics which are used to compare the situation of men and women. According to ESeG classification, female educationally hypogamous couples have a 0.287 higher probability of being hypogamic occupationally compared to educational homogamy, the reference category. This effect falls to 0.296 according to the years of academic input needed to access an occupation, and 0.269 if ISEI is used to define OAM. Thus, women manage to take advantage of their better relative educational position to obtain jobs with a higher socio-cultural or socio-educational level, but whose economic remuneration is lower and more similar to that of their partners.

The second factor limiting the potential for change of educational hypogamy are gender differences in access to the labour market. When models are estimated for and extended to a sample that includes partners who are out of the labour market (inactive or long-term unemployed), the lowest difference between educational hypogamy and educational homogamy is observed. The AME reduces to 0.22. This reduction occurs because many women in Spain still withdraw from the labour market at life stages after childbirth, impairing their chances of professional advancement. The unequal work behaviour by gender explains why the inclusion of inactive and long-term unemployed partners reduces the influence that female educational hypogamy has on female occupational hypogamy. In fact, only household characteristics are found to have some

(albeit reduced) negative influence on the effect of educational hypogamy for the model estimated for that extended sample. For the rest of the models, household composition variables do not modify the effect observed for educational hypogamy on occupational hypogamy.

The third factor that, in addition to improving the adjustment capacity of the models, modifies the estimated effect for educational hypogamy is the inclusion of women's job characteristics. Regardless of the indicator and classification used to sort occupations, compared to the initial models, the ability to transfer women's better relative educational position to occupations is increased. Consequently, part of the observed effect for educational hypogamy is explained by the type of jobs that women achieve in this type of couple: they get more open-ended contracts, positions with lower work intensity, with more seniority in the organisation, in the public sector and in sectors such as health or education (see *Table 2* above). These characteristics are more frequent in higher-quality jobs that allow a better work-life balance.

Overall, this set of estimated AMEs, after controlling for household composition variables and female employment characteristics, allows us to confirm with a high degree of reliability the hypothesis of partial reinforcement of female educational advantages. This H3 hypothesis posited that women's ability to obtain higher-level occupations than their partners would be superior in couples which are also educationally hypogamous, although this transfer of educational merit to the labour market would diminish when

comparing job properties in which men have traditionally been advantaged. This study shows how the probability of obtaining a higher-level occupation is higher for women who are also more qualified, but that capacity is more restricted for variables closer to economic rewards – such as socio-economic status – or when gender differences in labour participation are considered.

Conclusion and discussion

Previous research on EAM has concluded that educational homogamy has had little impact on household income differences (Breen and Salazar 2011; Qian 2017; Wise and Zangger 2017). Despite this, few studies have analysed the connection between educational and occupational attainment of couples. The limited evidence for specific countries, mostly non-European, shows that the reversal of gender inequalities in education has affected levels of educational homogamy, but its effects on occupational homogamy have been lower (Chudnovskaya and Kashyap 2020; Schwartz, Wang and Mare 2021).

Drawn from a large dataset, such as the quarterly micro-data from the Spanish LFS for the period 2000-2018, this article is the first to analyse OAM for the Spanish case and one of the few to explain the relationship between EAM and OAM at the European level. An overall increase in the number of couples in which women achieve higher educational levels is observed, but this progress in terms of female hypogamy is more modest when occupational attainment is compared. Homogamy and hypergamy have

decreased across cohorts, but the prevalence of unions where males have a higher-level job remains high. Consequently, an important finding of this study is that, while the reversal of gender inequalities has been rapid and intense in education, its translation to the labour market has been slower and less extensive. Internal differences have also increased in occupational hypogamy, but this widening of the gap in favour of female partners is limited when comparing the potential economic rewards of each job rather than the years of study required to access it.

The first factor that therefore explains the discrepancies between the educational and occupational attainment of couples is the type of occupational classification that is used to compare the partners' employment achievements. When measuring spheres of work traditionally under male control, such as socio-economic status, the transferability of women's educational advancement is considerably reduced compared to other job properties such as years of academic input or socio-cultural similarity.

The second factor is the level of disaggregation used to measure the level of occupations. As Schwartz, Wang and Mare (2021) have found previously for the US, the greater the number of micro-classes or categories defined, the lower the levels of occupational homogamy observed. Occupational hypogamy would also be lower with classifications based on indicators that are measured with three-digit disaggregation of jobs. This underlines the importance of using labour indicators that are as disaggregated as possible, further revealing that aspects of the occupational differences between men

and women are hidden within the different professional categories that exist in broader occupational groups.

The third reason is gender inequalities in labour participation, especially for low-qualified workers. When OAM is measured using a classification with a special category for partners outside the labour market, levels of hypogamy and occupational homogamy fall drastically. The capacity to transfer female educational advantages to their relative occupational position is also reduced if those differences in employment propensities by gender are considered. Contrary to what might be expected, the household composition variable has no effect on the association between EAM and OAM; the only difference that is observed is a marginal reduction in the effect of educational hypogamy on occupational hypogamy for the sample of couples with a long-term non-employed partner.

Despite confirming a *partial reinforcement* of women's educational advantages, female partners who are more educated than their male counterparts have a higher probability of also getting a higher-level occupation than those women with the same or lower educational levels than their partners. That positive influence is maintained after applying robustness-checks with different occupational classifications, and expanding the sample to include spouses who are inactive or long-term unemployed. Moreover, part of this effect is explained by women's preferences for jobs that are not as well paid or have

less managerial responsibility, but where the working conditions may be more attractive to them because of the possibilities of balancing work and family.

In conclusion, no support is found for the hypothesis of *social exchange* between education and occupation of couples, at least from the perspective of the female partner and comparing the achievements of both spouses simultaneously. But this does not imply that, from an individual perspective, many qualified women do not prefer to exchange their educational investment by matching with candidates with at least as good employment characteristics as themselves, especially when it comes to resources that are scarcer for them, such as those related to income power (Chudnovskaya and Kashyap 2020; Schwartz, Zhen and Xie 2016).

The evidence obtained has additional implications for the literature on EAM and income inequality. The observed growth of occupational hypogamy and its internal differences should be analysed using earnings and income information (Schwartz, Wang and Mare 2021). Highly qualified women are increasingly pairing down with men in lower-level occupations, while women with medium or low educational levels are pairing up with men in higher-level occupations. Hence, female partners' earnings could be acting as an 'income-equalizer' (Boertien and Pemanyer 2019). Such equalisation of income levels between couples will be more likely to occur when women's labour force participation becomes more widespread. In other words, it is important to test whether the slow growth in gender symmetry within couples may have delayed the reduction in

inequality that could be expected from the lower levels of homogamy observed in recent years (Harkness 2013).

There are some limitations of this paper that must be taken into account. On the one hand, the micro-sociological approach focusing on a national case is useful to capture adequately the characteristics of a specific labour market, applying several occupational classifications, but it prevents extrapolation of the results on the association between EAM and OAM to a broader set of countries. Future country-specific research could examine how the institutional environment affects women's ability to transfer RGE to the labour market, and which explanatory drivers most affect this relationship. On the other hand, the cross-sectional nature of observations does not adequately capture the short-term character of jobs in current societies. Data sources that follow workers over time are limited in Europe and do not cover a time span longer than four years in most countries, but future studies on OAM could analyse couple types from a longitudinal life-cycle perspective.

Conflict of interest and data availability statement

The authors report there are no competing interests to declare. This research is based on microdata from the quarterly Labour Force Survey, which are available from the *Spanish National Statistics Institute (INE)*. Due to the level of disaggregation of some of the main variables, which were used under licence for this study, access to them cannot be shared,

but analysis codes and some specific files may be made available upon reasonable request under permission of INE.

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[1] Note that the opposite transition is also possible, a reversion to male-superiority equilibria. The theory does not establish the direction of changes in contexts of instability.

[2] These trends in the evolution of couple types and differences in favour of hypergamy for occupational attainment do not change if the other occupational classifications (ESeG or Academic Input) are used. Results available on request.

[3]Results for the rest of categories of the dependent variable do not change and are available upon request.

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