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Female employment and fertility trajectories in Spain: an Optimal Matching Analysis

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Abstract
This article describes the evolution of labour market participation and fertility patterns in Spain among women born between 1956 and 1970. Trajectories are captured by combining partnership, employment and motherhood over a 20-year span (from the age of 16 to the age of 35). Using Optimal Matching Analysis, four different patterns in female trajectories are identified: (1) early marriage/non-working mother/high fertility; (2) late marriage/working mother/low fertility; (3) early marriage/working mother/high fertility; and (4) late marriage/low participation/low fertility. A multinomial probit model contrasts whether or not the patterns found are compatible with the human capital approach to female labour market participation and fertility and/or Hakim’s preference theory. Results show that both theoretical frameworks partly explain the observed trajectories although neither of them, not even both together, suffices to determine female employment and family careers.

Keywords
family, female employment, fertility, human capital, labour market participation, motherhood, Optimal Matching Analysis, preference theory, Spain

Introduction
This article describes the main patterns of transition into adulthood among Spanish women from the combination of three spheres of life and weighs up the explanatory power of both the human capital approach and preference theory. Labour supply,
cohabitation or marriage and fertility decisions are interdependent and therefore studied at the same time using Optimal Matching Analysis (OMA), which allows sequences to be treated as a whole (Brzinsky-Fay and Kohler, 2010), unlike event history analysis. The Spanish case is very interesting because of crucial political, social and economic transformations in our observation period (1970–2005), such as educational expansion and parallel changes in preferences and values concerning family and work (Martínez Pastor, 2009).

A two-stage empirical approach is adopted here: first, reported trajectories are clustered into four types, using OMA. A multinomial probit is then conducted to understand the characteristics and values that determine an individual’s allocation to each type. The present article differs from previous ones in Spain since, first, it analyses sequences made from the combination of three spheres of life (employment, marriage or cohabitation and motherhood), and second, it tests both the human capital approach and preference theory.

**Theoretical approaches and main hypotheses**

In studying gender and the distribution of paid work and domestic/family labour, both Becker’s human capital approach and Hakim’s preference theory have emphasized the significance of individual choice. The former (also known as New Home Economics) explains employment and fertility options as allocation issues within the family and the result of human capital investment decisions, based on expected returns and opportunity costs. Married/cohabiting women may specialize in housework and childbearing, but educational expansion reduces the attractiveness of such specialization (Becker, 1960, 1991). Moreover, since childbearing and paid employment are time-intensive, educated women will be less prone to having children or, at least, will delay childbearing. Employment opportunities also shape the opportunity cost of family careers and foster women’s labour market participation. Several hypotheses may result from this theory: more educated women, those in more recent (and educated) cohorts and those who live in regions with good employment prospects have a higher opportunity cost of non-working, which means a higher proneness of choosing employment-related trajectories and having fewer children.

In contrast, preference theory classifies women in terms of their commitment to paid employment, which will drive their decisions. According to their level of work commitment, women are classified as home-centred, work-centred or ‘adaptive’ (Hakim, 2000, 2006). To be home-centred means prioritizing family life and children, having strong family values and preferring not to work outside of the home. To be work-centred means valuing work. This entails large investments in education. Childless women are concentrated here. Adaptive women are a diverse group with no prevailing work orientation who usually try to find a compromise between employment and family. This group is very responsive to family-friendly policies and employment opportunities.

From the start, the emphasis of choice in preference theory has resulted in many critiques; for example, Tomlinson (2006) claims Hakim misses a deeper discussion on the extent to which labour market outcomes differ from preferences. Crompton and Harris
Davia and Legazpe

(1998) find no explanation in Hakim’s work of why women should fall into the categories she describes. Preferences may shape choices, but they do not, contrary to Hakim’s assertions, determine them. In a similar vein, McRae (2003) points to the absence of any serious consideration of the constraints on the enactment of lifestyle preferences as the essential weakness of preference theory. Also, Tomlinson (2006) stresses the constraints over preferences: care networks, employment status, the welfare policy context and work–life balance preferences shape women’s likelihood of making transitions to part-time work following maternity.

In the same manner, Warren (2000) and Walters (2005) highlight the need to understand ‘preferences’ in the context in which they are formed while Crompton and Lyonette (2005) describe Hakim’s argument as voluntarist because of its emphasis on the overwhelming significance of individual ‘choices’, although they also make a certain allowance for the impact of structural constraints and factors. Other critics of Hakim argue that women’s employment status (full-time versus part-time) cannot be used to identify differing levels of work commitment (Walsh, 1999; Warren and Walters, 1998). In fact, Walters (2005) finds relevant variability in attitudes and orientations to work among part-timers (who are not as home-centred as Hakim would initially presuppose) and conceptualizes work orientations in terms of a continuum, with homemakers at one end and very work-centred women at the other.

Hakim recognizes that the influence of preferences on lifestyles is more limited or weaker in societies where the New Scenario for women is not fully developed, which is the case in Spain, compared to other countries such as the UK (Hakim, 2003b). The five economic and social changes which define this New Scenario are: (a) the contraceptive revolution; (b) the equal opportunities revolution; (c) the expansion of white-collar occupations; (d) the creation of jobs for secondary earners; and (e) the increasing importance of attitudes, values and personal preferences in the lifestyle choices. They were incomplete in Spain during the observation period due to a later and less accepted introduction of modern contraceptives together with more strict restrictions on abortion, the non-existence of really binding anti-discrimination legislation and institutions to enforce it, the shortage of part-time employment opportunities – with temporary work being the usual option for non-standard employment – and the lack of correspondence between new values (such as egalitarianism as in Scandinavia) and behaviour, with a lower incidence of cohabitation, out-of-wedlock births and divorce.

According to the critics of Hakim’s preference theory, the national institutional set-up may influence observed life-courses as well as preferences. In the case of Spain, education expansion may mean that women in more recent cohorts will want to build stable employment careers and to have fewer children than those in previous cohorts. Nevertheless, in other European countries where women are even more educated, female paid employment is more common and fertility is not delayed as much as in Spain (Gutiérrez-Domènech, 2008). Therefore, the Spanish institutional framework with regards to family and female employment must also play a role in explaining the fairly low fertility trends in recent cohorts; Plategna and Remery (2005, 2009) report total fertility rates in Spain around 1.3 compared to values of nearly 2 in more family-friendly countries such as France; mother’s age at first birth in Spain is amongst the highest in Europe.
The welfare state is underdeveloped in relation to family policies in Spain, and is still based on income-transfers, paying marginal attention to caring services: the childcare coverage rate for under-threes was around 10 per cent in 2000 and (private) formal care arrangements are increasingly demanded by working mothers when they can afford them, despite their high cost (Carrasco and Domínguez, 2011; Plategna and Remery, 2005). The same applies to family and employment policies fostering flexible hours, with parental leave take-up rates at medium levels for women but a very low share of women working part-time. As a result, women face significant difficulties in reconciling work and family life in Spain. Even so, female employment rates have increased and the Spanish labour market has shifted from a traditional male breadwinner model to a dual-breadwinner model (Lewis, 2001). Nevertheless, this does not mean that men’s and women’s jobs are equally good: women suffer more employment precariousness than men. What is more, women in more recent cohorts face severe unemployment and very high job instability due to the spread of temporary contracts. Moreover, the lack of welfare provisions for young people and the owner-centred housing market have kept young people in their parental homes and, again, delayed the transition into marriage and motherhood.

Education arguably leads to more liberal attitudes towards gender roles and the division of paid and unpaid work within the couple (Davis and Greenstein, 2009). Spanish women in young cohorts tend to seek job stability before marriage and childbearing and, after marriage, although dual-earner families are expanding, the division of household work is rather traditional, with exceptions found in recent research (Goñi-Legaz et al., 2010).

**Female employment, family decisions and trajectories: review of the evidence**


With regards to empirical literature that tests preference theory, the evidence is not conclusive. The theory has been contrasted and confirmed in a large number of countries (Hakim, 2007), including Spain. Hakim stresses the speedy process of adjustment to democracy and new values in Spain since the 1970s and how Spanish women are increasingly embracing modern social values, such as Scandinavian models of families, gender roles and attitudes towards employment (Hakim, 2003b). Unfortunately, the limited availability of part-time work means that women wanting both a family and a career need to choose between full-time jobs and unemployment. Moreover, given the high unemployment rates, female labour market participation is lower than desired by women in younger generations. Finally, educational expansion in Spain is contributing to women
marrying similarly educated men, which may also promote egalitarian gender roles in the family or the couple.

Vitali et al. (2009) contrast Hakim’s postulates with regards to fertility in several EU countries and their results confirm an association between work–family lifestyle preferences and realized fertility (but not with fertility intentions) in a variety of European countries.

Critics of Hakim have provided evidence against the premises of preference theory. Walsh (1999) shows that preferences vary along the lifecycle and women are not inherently or permanently work-centred or home-centred. McRae (2003) finds evidence on the relevance of constraints (and not only preferences) in shaping decisions by women in the UK.

Some other pieces of research are rather eclectic inasmuch as they are not explicit about their theoretical foundations and combine human capital indicators with indirect measures of preferences, job opportunities and constraints, such as Fouarge et al. (2010). Additionally, Baizán et al. (2002) follows a demographic approach built from previous research evidence and Baizán et al. (2003) pays particular attention to labour market conditions (flexibility, duality), educational expansion and a macro perspective of trends in gender roles, rather than explicit micro-evidence of changes in values and preferences.

Our analysis is focused on personal socio-economic characteristics and values (used as proxies for preferences) rather than on constraints, although the latter will also be present in the form of employment opportunities via area of residence. As for the empirical strategy, rather than transitions or events, it is focused on trajectories. Empirical literature on trajectories is rather scarce in Spain, Baizán et al. (2002) being one exception. The present analysis contributes to the literature by applying OMA to the study of employment and early family careers in order to detect specific patterns or profiles, which will be later explained via a multivariate analysis.

**Methodology: data and empirical strategy**

The data set used is the Spanish Fertility, Family and Values Survey of 2006 (*Encuesta de Fecundidad, Familia y Valores 2006*), FFVS-2006 hereinafter. It was conducted by the Centre for Sociological Studies in 2006. The FFVS-2006 questionnaire is organized in a way that allows one to reconstruct job histories, marriages or cohabitations and motherhood. Since it is a retrospective survey, concerns may arise about the reliability of the memory-based answers, although memory problems are equally distributed across cohorts.

The target population of the FFVS-2006 was adult Spanish female residents (over 15 years old). The total sample size was 9737 women, out of which 8978 were Spanish-born. There are no foreign-born women in the sample since they may have experienced their life trajectories in their origin countries and their past circumstances may not be controlled for in the multivariate analysis performed here. From that broad sample, 2349 women born between 1956 and 1970 (therefore aged 35 to 49 at the moment of the fieldwork) were selected. Those reporting inconsistencies in their work and family histories because of memory problems (367 women) could not be fully traced and were deleted.
from the sample. The remaining 1982 women reported 1767 full different sequences (trajectories) over 20 years. Finally, 1946 women had valid values for all the variables used in the multivariate analysis. They constitute the final sample, which is observed throughout the age span 15 to 35. Although this may mean missing women who certainly postpone their fertility decisions beyond that age, compromise was needed between studying relatively new cohorts and extending the observation period. Women in the 1970 cohort were 35 years old at the end of 2005. Had the observation period been extended, the youngest cohort would have had to be omitted.

Interviewees report the beginning and ending dates of every job and every relationship as well as the birthdates of all their children. By combining those dates, the researcher may construct a set of variables that indicate, for every year in the 16 to 35 age span, whether (at any moment of the year): (a) the woman was in employment; (b) she had children (and how many); and (c) she was married or in cohabitation. From the combination of the three variables, a new one is computed for every year during the above-mentioned time span. A woman may be, in a given year, in each of the following statuses (M stands for married (or cohabiting), W stands for in work, C stands for child(ren) for unmarried/non-partnered women and 1 stands for one child, 2 stands for two children, 3 stands for three or more children in the case of married/partnered women):

- 000: unmarried, non-employed, no children
- 00C: unmarried, non-employed, children
- 0W0: unmarried, employed, no children
- 0WC: unmarried, employed, children
- M00: married, non-employed, no children
- M01: married, non-employed, one child
- M02: married, non-employed, two children
- M03: married, non-employed, three or more children
- MW0: married, employed, no children
- MW1: married, employed, one child
- MW2: married, employed, two children
- MW3: married, employed, three or more children

By linking the above-mentioned categories defined for every year-specific observation, 1767 different sequences of 20 annual (ages 16 to 35) elements are computed and are summarized with OMA (see details in the technical appendix). This technique is becoming increasingly popular in the study of professional and family careers (Aassve et al., 2007; Huang and Sverke, 2007; Huang et al., 2007; Hynes and Clarkberg, 2005; Piccarreta and Billari, 2007; Pollock, 2007). The present strategy is similar to Aassve et al. (2007) inasmuch as statuses in the employment and family spheres (marriage/cohabitation and motherhood) are combined to define sequences with the OMA algorithm, which are grouped/summarized via cluster analysis. The size of the clusters and the average time spent in every status may be seen in Table 1.

Once trajectories are summarized into clusters, a multinomial probit model is deployed to disentangle the profiles of women in each cluster. Explanatory variables include socio-demographic characteristics, geographic location and, finally, preferences and values.
Birth cohort and completed education attainment (compulsory or less, post-compulsory secondary and higher post-secondary or tertiary) are the most relevant socio-demographic features. The birth cohort has two different implications, which are difficult to disentangle. On the one hand, women in more recent cohorts are more educated because of educational expansion. As a result, according to the human capital approach, they should be more likely to experience trajectories more linked to the labour market than to motherhood. On the other hand, both educational expansion and evolution of the institutional set-up in Spain, which has been accompanied by profound changes in values, would point, in a preference theory context, to a higher likelihood of women in more recent cohorts following less traditional trajectories (work-centred rather than home-centred). Women in younger cohorts have been educated in more secular, gender egalitarian values. The family of origin is characterized by the number of siblings and a dummy that captures parental divorce or separation, which may induce women to seek economic independence during adulthood and therefore to follow more work-centred trajectories. Employment opportunities are proxied through area of residence, described by the size of the village/town/city of residence, the geographical location (North, East, South, Centre) and the average income level in the region (low, average, high and very high per capita GDP). The 17 Spanish autonomous communities are therefore classified according to location and income in two non-collinear classifications.

With regards to preferences and values, some of the questions in FFVS-2006 resemble the ones deployed by Hakim (2003a) to formulate her typology of women in the UK. To begin with, using a question on ideal family models, Hakim identifies home-centred women as those who prefer complete role segregation within marriage, with the man as the breadwinner. The FFVS-2006 explicitly asks about this and the interviewee chooses a model of family where: (a) both the man and the woman work inside and outside home; (b) the man works more than the woman outside home and the woman works more
inside; (c) the woman does not work outside home at all; and (d) other arrangements. Women agreeing with an unequal sharing of market work within the couple are expected to follow trajectories marked by low participation and high fertility, which would fit the home-centred model. In contrast, women in work-centred trajectories would be in favour of an egalitarian family model. In addition, in order to identify work-centred women, Hakim (2003a) defined ‘work commitment’ as when interviewees stated that they would continue with paid work in the absence of economic need. In a similar fashion, ‘work commitment’ here refers to the situation where the interviewee claims that she would go on working if she ever won the lottery.

Other values and preferences captured by the FFVS-2006 questionnaire refer to whether interviewees agree with the following assertions: (a) marriage is an old-fashioned institution; (b) if a woman wants to have a child without a partner, she should be able to do it; (c) parents have their own lives and they should not be asked to sacrifice their own welfare for their children; (d) marriage is an obstacle to the professional career of women; (e) children are an obstacle to the professional career of women; and (f) the ideal number of children in a family is three or more. Finally, interviewees describe themselves as left-wing and right-wing versus centre or non-politically identified, and religiosity is also captured through practising Catholic (as opposed to non-practising Catholic, other religions and no religion at all).

**Describing trajectories**

Table 1 is designed to roughly describe the clusters. The four groups of women identified here have emerged from the cluster analysis applied to the distance matrix resulting from the OMA algorithm. Table 1 summarizes the patterns in each cluster and reports, for each cluster, the average duration of each type of episode in the trajectory.

Cluster one is characterized by nearly four years on average as non-employed single women without dependent children. A small proportion of women in this cluster do work while single (during 1.6 years on average) and there are very few episodes of employment after marriage. After one year as non-employed and childless, these women have their first child and three years later, a second one. Some of them will have a third child (by the age of 35 they will have spent two years on average as non-working married mothers with three children). This cluster is labelled as ‘early marriage/non-working mother/high fertility’ and accounts for 22 per cent of the sample. According to the hypotheses stemming from the human capital approach, low educated women should be more likely to pertain to this cluster. The trajectory defined in cluster one follows the ‘home-centred’ profile in Hakim’s typology and the multivariate analysis should confirm whether the observed values and preferences describe them accordingly.

Cluster two is characterized by a longer time in non-employment, singlehood and childlessness, which (as will be seen in Table 2) is related to their higher level of education, consistently with their five years in non-employment, childless singlehood. Women in this cluster spend an average of 6.6 years as employed and single and do not give up work when they enter into a partnership, take three years on average to have their first child and three more years to have the second child. As a matter of fact, only very few of them do have a second child before the age of 35. These women will be labelled as ‘late
Table 2. Multinomial probit model and description of the sample.

<table>
<thead>
<tr>
<th></th>
<th>A. Trajectories: multinomial probit model</th>
<th>B. Mean values of explanatory variables in the model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cluster two: late marriage/working mother/low fertility</td>
<td>Cluster three: early marriage/working mother/high fertility</td>
</tr>
<tr>
<td>Cluster one</td>
<td>0.336*** (0.125)</td>
<td>0.087 (0.144)</td>
</tr>
<tr>
<td>Cluster two</td>
<td>0.850*** (0.129)</td>
<td>0.459*** (0.148)</td>
</tr>
<tr>
<td>Cluster three</td>
<td>0.558*** (0.131)</td>
<td>0.120 (0.155)</td>
</tr>
<tr>
<td>Cluster four</td>
<td>1.704*** (0.172)</td>
<td>0.677*** (0.204)</td>
</tr>
<tr>
<td>Cohort 1961–1965</td>
<td>0.002 (0.024)</td>
<td>0.004 (0.027)</td>
</tr>
<tr>
<td>Parents divorced</td>
<td>0.001 (0.249)</td>
<td>0.088 (0.284)</td>
</tr>
<tr>
<td>East</td>
<td>0.107 (0.197)</td>
<td>0.347 (0.228)</td>
</tr>
<tr>
<td>Centre</td>
<td>0.112 (0.179)</td>
<td>0.501** (0.211)</td>
</tr>
<tr>
<td>South</td>
<td>0.251 (0.208)</td>
<td>0.024 (0.245)</td>
</tr>
<tr>
<td>Mid per capita GDP (€19,000 – 25,000)</td>
<td>0.259 (0.178)</td>
<td>0.424** (0.206)</td>
</tr>
<tr>
<td>High per capita GDP (€25,000 – 30,000)</td>
<td>0.836*** (0.253)</td>
<td>0.988*** (0.287)</td>
</tr>
<tr>
<td>Very high per capita GDP (above €30,000)</td>
<td>0.576** (0.225)</td>
<td>0.491* (0.260)</td>
</tr>
<tr>
<td>Age at home leaving</td>
<td>0.076*** (0.007)</td>
<td>0.002 (0.010)</td>
</tr>
<tr>
<td>2000/50,000 inhabitants</td>
<td>0.112 (0.207)</td>
<td>0.190 (0.249)</td>
</tr>
<tr>
<td>50,000/400,000 inhabitants</td>
<td>0.163 (0.216)</td>
<td>0.295 (0.258)</td>
</tr>
<tr>
<td>More than 400,000 inhabitants</td>
<td>0.220 (0.242)</td>
<td>0.160 (0.291)</td>
</tr>
<tr>
<td>Marriage is an old-fashioned institution</td>
<td>0.322 (0.231)</td>
<td>0.710*** (0.243)</td>
</tr>
<tr>
<td>Women should be able to have children alone</td>
<td>−0.016 (0.109)</td>
<td>0.049 (0.127)</td>
</tr>
<tr>
<td>Parents should have their own lives</td>
<td>−0.247 (0.214)</td>
<td>−0.129 (0.240)</td>
</tr>
<tr>
<td>Marriage impedes the professional career</td>
<td>−0.181 (0.149)</td>
<td>−0.105 (0.172)</td>
</tr>
</tbody>
</table>
### Table 2. (Continued)

**A. Trajectories: multinomial probit model**

<table>
<thead>
<tr>
<th>Cluster two: late marriage/working mother/low fertility</th>
<th>Cluster three: early marriage/working mother/high fertility</th>
<th>Cluster four: late marriage/low particip./low fertility</th>
<th>Whole sample</th>
<th>Cluster one</th>
<th>Cluster two</th>
<th>Cluster three</th>
<th>Cluster four</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children impede the professional career</td>
<td>−0.082 (0.115)</td>
<td>−0.072 (0.133)</td>
<td>−0.079 (0.116)</td>
<td>0.65</td>
<td>0.61</td>
<td>0.67</td>
<td>0.65</td>
</tr>
<tr>
<td>Both the man and the woman work</td>
<td>0.198 (0.249)</td>
<td>−0.124 (0.274)</td>
<td>0.094 (0.252)</td>
<td>0.72</td>
<td>0.66</td>
<td>0.77</td>
<td>0.75</td>
</tr>
<tr>
<td>The woman works less than the man</td>
<td>−0.042 (0.273)</td>
<td>−0.581* (0.313)</td>
<td>−0.096 (0.276)</td>
<td>0.15</td>
<td>0.17</td>
<td>0.15</td>
<td>0.09</td>
</tr>
<tr>
<td>The woman does not work at all</td>
<td>−0.501* (0.298)</td>
<td>−0.123 (0.322)</td>
<td>0.021 (0.290)</td>
<td>0.09</td>
<td>0.12</td>
<td>0.04</td>
<td>0.10</td>
</tr>
<tr>
<td>Work commitment</td>
<td>0.218** (0.110)</td>
<td>0.451*** (0.128)</td>
<td>0.056 (0.112)</td>
<td>0.43</td>
<td>0.34</td>
<td>0.47</td>
<td>0.52</td>
</tr>
<tr>
<td>Ideal number of children ≥ 3</td>
<td>−0.207** (0.105)</td>
<td>−0.064 (0.121)</td>
<td>−0.394*** (0.107)</td>
<td>0.36</td>
<td>0.42</td>
<td>0.50</td>
<td>0.39</td>
</tr>
<tr>
<td>Practicing Catholic</td>
<td>0.109 (0.123)</td>
<td>0.149 (0.143)</td>
<td>0.208* (0.122)</td>
<td>0.30</td>
<td>0.28</td>
<td>0.29</td>
<td>0.26</td>
</tr>
<tr>
<td>Right-wing</td>
<td>−0.008 (0.169)</td>
<td>−0.068 (0.199)</td>
<td>−0.063 (0.169)</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.10</td>
</tr>
<tr>
<td>Left-wing</td>
<td>0.093 (0.116)</td>
<td>0.171 (0.134)</td>
<td>−0.090 (0.119)</td>
<td>0.37</td>
<td>0.31</td>
<td>0.42</td>
<td>0.43</td>
</tr>
<tr>
<td>Constant</td>
<td>2.597*** (0.439)</td>
<td>−0.031 (0.396)</td>
<td>0.914* (0.495)</td>
<td>1946</td>
<td>428</td>
<td>759</td>
<td>218</td>
</tr>
</tbody>
</table>

**B. Mean values of explanatory variables in the model**

<table>
<thead>
<tr>
<th></th>
<th>Whole sample</th>
<th>Cluster one</th>
<th>Cluster two</th>
<th>Cluster three</th>
<th>Cluster four</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>1946</td>
<td>1946</td>
<td>759</td>
<td>218</td>
<td>541</td>
</tr>
<tr>
<td>Chi2 (log-likelihood)</td>
<td>546.8 (-2158)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Standard errors in parentheses, ***p < 0.01, **p < 0.05, *p < 0.1.

Davia and Legazpe

marriage/working mother/low fertility’ and account for 39.1 per cent of the sample. The multivariate analysis intends to test whether this group of women fits in the ‘work-centred’ or adaptive type according to Hakim’s typology. Their trajectories resemble those from work-centred women up to their first (and only) childbirth and look rather more ‘adaptive’-like afterwards.

Cluster three gathers women who spend only two years on average as non-employed single women without dependent children and soon go into employment while remaining single. After three years on average in that status, they tend to begin their first partnership and hardly ever leave paid work once partnered. Instead, these women report in average one year working and childless and 2.5 years as working with a child followed by 6.5 years as employed with two children. They are labelled as ‘early marriage/working mother/high fertility’ and represent 11.2 per cent of the sample. The multivariate analysis intends to test whether this cluster may be identified with the ‘adaptive’ category in Hakim’s typology: while seemingly more home-centred than women in cluster two (they are found to be in relationships for more years and they report more births) their persistent contact with the labour market after motherhood resembles the ‘adaptive’ category more than women in cluster two.

Cluster four gathers trajectories very much marked by non-employment and, at the same time, low fertility. There is a relevant group of women in this non-employment-low-fertility circle in Spain. These women only spend an average of two years in employment while single, but once they marry, they take two years to have their first child and hardly ever have a second one. This cluster is labelled as ‘late marriage/low participation/low fertility’. Women in this cluster represent an unusual category, difficult to classify in Hakim’s typology, since they report low fertility and low employment rates, which unfortunately is feasible in Spain because of poor employment prospects for low educated women. They share common features with the socio-demographic profile of women in cluster two, but they are much less educated than them. Women in this cluster report a lower work commitment and more conservative values than women in cluster two – even in the same birth cohorts, which may well correspond to their low educational attainment and reduced contact with the labour market. They might be adaptive women who postponed maternity because they initially wanted to participate in the labour market but did not succeed in getting a job. So, after a long time of joblessness they finally decide to have their first child. This cluster comprises 27.8 per cent of the sample.

In order to explain how the main results from the multinomial probit should be interpreted we will take cohort dummies as examples. The positive coefficient in most clusters means that women in younger cohorts are more likely to be found in clusters two, three and four than in cluster one (the reference) compared to their elder counterparts. Non-traditional trajectories are more likely to be found in highly educated women as well, regardless of the birth cohort. These results confirm the premises from the human
capital approach in so far as more educated women and those affected by educational expansion do register less traditional trajectories. Women in cluster three (early marriage/working mother/high fertility) are rather similar to women in cluster one (early marriage/non-working mother/high fertility) while women in cohort 1961–1965 and women with secondary education are not more likely to be found in cluster three than in cluster one.

Living in the Centre and mid-income regions increases the likelihood of experiencing trajectories in cluster three, and living in high and very high income regions increases the likelihood of being found in any less traditional trajectory than cluster one, particularly in trajectories classified in cluster two (late marriage/working mother/low fertility) and three (early marriage/working mother/high fertility). This also fits premises from the human capital approach inasmuch as employment opportunities enhance non-traditional trajectories.

Postponement of home leaving increases the likelihood of being found in clusters two and four (late marriage/low participation/low fertility).

Preferences may be endogenous to trajectories. One of the main criticisms of Hakim’s preference theory is that the causality link goes in the opposite direction, that is, generally it is person-specific circumstances and background factors that mostly account for a person’s orientation in life and thus determine decisions, while preferences do not causally explain behaviour, but just shape and influence choices (Vitali et al., 2009). This is why trajectories will not be explained on the basis of preferences which are reported at the moment of the interview, but consistencies are found between trajectories and preferences, no matter which influences the other. That being said, women who think that marriage is an old-fashioned institution are more likely to be found in clusters three and four. Very few relevant differences are found among clusters with regards to values and preferences in the presence of socio-demographic controls. Namely, no significant differences arise in questions about women becoming mothers on their own if they want to, parents having the right to live their own lives, marriage and children being obstacles to professional careers and the optimal sharing of market work between partners. When socio-economic features are not controlled for (results available upon request), women who agree on children being an obstacle to employment careers are more likely to be found in cluster two (late marriage/working mother/low fertility) than in cluster one, women who think that the ideal sharing of paid work within the couple consists of women working less than men are more likely to be found in cluster three (early marriage/working mother/high fertility) than in cluster one and women who think that the ideal sharing of paid work within the couple consists of women not working at all are less likely to be found in cluster two than in cluster one. These three features do actually confirm the expected patterns, although their effect vanishes in the presence of other more relevant observed characteristics.

The only set of preferences that really represent a difference across clusters is work commitment, which increases the probability of being in clusters two and three (the clusters more related to labour market attachment) and agreeing on the optimal number of children in the household being three or more. Namely, women who think that the ideal number of children in a household is three or more are less likely to be found in clusters two and four than in cluster one.
Overall, women in younger cohorts and more educated women are more likely to be in high participation and low fertility trajectories. Values and preferences are related to the observed trajectory (particularly work commitment and ideal number of children in a family); while human capital, birth cohort and the labour market structure or employment opportunities for women are relevant correlates of observed trajectory.

Conclusions

This article studies the evolution of family and labour market trajectories of women in the period 1970–2005. Once these trajectories are observed and classified, their distribution, according to socio-economic and personal features, is analysed in order to test the human capital approach and preference theory hypotheses, but results need to be taken with caution since it is arguable that the patterns observed actually respond to preferences and values; that is, one may not be sure of whether decisions behind the observed trajectories were a free choice or not. The premise that observed preferences and values may act as a proxy of previous motivations or the driving forces behind decisions along the life-course needs to be accepted instead. Optimal Matching Analysis resulted in four different patterns/clusters of family and labour market behaviour of women in Spain: (1) early marriage/non-working mother/high fertility; (2) late marriage/working mother/low fertility; (3) early marriage/working mother/high fertility; and (4) late marriage/low participation/low fertility. This last cluster is similar in age to those women in cluster two, but much less qualified. It is not possible to discern whether there is a relation between their more conservative values and lower work commitment and their lower participation in the labour market. Neither is it possible to disentangle whether their lower fertility responds to economic constraints due to poor attachment to the labour market or to preferences.

The profile of women in the different clusters is consistent with the premises from the human capital approach in the sense that highly educated women are more prone to be found in the clusters characterized by a stronger link with the labour market and reduced fertility. Interestingly enough, education is more relevant in the definition of clusters than the birth cohort is. The area of residence also defines employment opportunities, so regardless of education attainment and the cohort, women living in areas with good employment prospects are more likely to register trajectories defined by participation in the labour market, with and without marriage and children. The latter results would point to the role of external constraints in the determination of employment careers that critics of preference theory (such as McRae (2003) and Crompton and Lyonette (2005)) would stress. However, from the perspective of neoclassical economic theory, they also make sense: women in regions with employment opportunities have a higher opportunity cost of not working and devoting their time to childbearing.

As for the possible correlation between values and trajectories, traditional family values were expected to be found in women with low participation in the labour market, and high fertility and preferences towards work and gender equality in sharing household tasks were rather expected in women linked to the labour market and with low fertility. Although it may not be possible to disentangle whether values have influenced the trajectory or whether it has been the other way around, a certain level of relation in some
aspects between values or preferences and trajectories is found. For instance, belonging to clusters two and three is positively correlated with work commitment and negatively with preference for a large number of children in a household. Nevertheless, the link between trajectories and values and preferences is rather weak, particularly when socio-economic characteristics are controlled for. Results are partly consistent with Hakim’s preference theory in the sense that women in cluster one may be identified as ‘home-centred’, those in cluster two look like ‘work-centred’ women who delay their maternity and finally become ‘adaptive’, and women in cluster three, because of their simultaneous preference for paid employment and large families and their early access to marriage and motherhood, may be classified as ‘adaptive’ as well. Women in cluster four do not fit any of the categories in Hakim’s typology and may be the result of the very poor prospects in the Spanish labour market for mid- and, particularly, low-qualified women. This group deserves further attention and is related to the Mediterranean puzzle that is well documented in the literature: Italian and Spanish women simultaneously register lower employment and fertility rates than their counterparts in Central and Scandinavian Europe. Women in cluster four are the ones who explain these lower employment and fertility rates.

The present analysis has confirmed the main changes experienced in the biography of women in Spain. Those born in recent cohorts, but also highly educated ones across all birth cohorts, tend more to follow non-traditional work and family careers. Once their higher education attainment is controlled for, women in more recent cohorts are more likely to experience late union formation and motherhood as well as more continuous employment careers. It may be argued that the evolution of the institutional set-up in Spain has contributed to the observed trends. Although the results presented here also show partly coherent trends with Hakim’s preference theory as values and preferences are concerned, socio-demographic predictors inspired by the human capital approach have a stronger explanatory power than values and preferences.

Nevertheless, neither of the two theoretical frameworks suffices to explain the observed trajectories in Spanish women. While the human capital approach premises are confirmed in terms of the correlation between educational attainment and fertility and participation decisions, as well as the link between employment opportunities and observed trajectories, there are societal changes which also have a say in explaining behaviour patterns. Beyond economic incentives measured by education and labour market contextual variables, values and preferences have an explanatory role as well, though not all the expected results arise from the multivariate analysis. Preferences seem to shape women’s behaviour, but always in the context of possibilities and constraints given by macroeconomic and societal features. As a matter of fact, they lose explanatory power in the presence of socio-economic variables that define constraints over preferences. The fact that none of the theoretical frameworks fully explain the observed employment and family trajectories in Spanish women points to the existence of missing explanatory factors on both sides. For example, the human capital approach stresses the role of expected costs (including opportunity costs) and returns and tends to forget preferences and values (the result of education or personality traits) which affect behaviour regardless of the economic value of their decisions. At the same time, preference theory also seems to naively believe that the contextual constraints to individual decisions are less important.
nowadays, something which is far from true. Some of the constraints and factors shaping women’s decisions are neither societal nor individual; they also belong to the sphere of private life and identify characteristics of both their family of origin and the one they build. The features of the parents and parental home as well as the characteristics of partners or spouses and the preferences and values of all of these actors are just some examples of missing factors that future research should take into account.

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**Notes**

1. Although preferences and values are often referred to simultaneously, these concepts should not be used interchangeably since they are not exactly the same thing.
2. This means that the eldest cohort (born in 1956) is observed from 1970 to 1989 and the youngest (born in 1970) is observed from 1984 to 2005.

**References**


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**Technical appendix**

OMA is a classifying technique. Namely, it is one type of sequence analysis where the researcher is interested not only in the events but the sequential character of all elements.
together (Brzynsky et al., 2006). Although it has some advantages over event-history analysis in the study of trajectories (Brzinsky-Fay and Kohler, 2010), it has received critiques as well (Wu, 2000).

OMA compares all possible pairs of sequences and computes the distance between them through an algorithm which defines the minimum amount of elementary operations that turn one sequence into another: replacement, insertion and deletion (indel) of elements. Every operation has a cost which, ideally, should be driven from theory. Since this is not always possible or easy, unitary indel costs are assumed and compute a replacement cost matrix from the element-to-element transition rates in the data sequences (following Rohwer and Pötter, 2005). Non-frequent transitions are seen as ‘more costly’ than frequent ones and those statuses between which transits are relatively common are rather similar. The replacement costs are defined as inversely proportional to transition frequencies from each state into the others. Indel costs are here, as recommended by prior empirical analysis (Blair-Loy, 1999), fixed in one-tenth of replacement costs.

The standard optimal matching algorithm, which is named after Needleman and Wunsch, has been implemented here with SQ-ados, a bundle of STATA programs created by Christian Brzinsky-Fay, Ulrich Kohler and Magdalena Luniak (see Brzinsky-Fay et al., 2006 for a full description). The output of OMA is a pair-wise distance matrix that will be the input in cluster analysis via Ward’s algorithm, from which a limited number of patterns will be described. This algorithm has proven to generate a number of identifiable, meaningful patterns and is widely used in OMA (Martin et al., 2008). The classification of women is therefore not pre-chosen, but rather emerges from the data. The optimal number of clusters was found to be between three and four and the latter option has been chosen.