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Fertility as a variable for tackling the demographic challenge, is having children in Spain an unfulfilled desire?

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Abstract

In this article, we examine the maternity gap for the case of Spain. This is a phenomenon of great social and economic relevance that presents challenges for analysis, including adequate delimitation of the concept and the acquisition of quality quantitative data that enables dependable empirical measurement. We have drawn data from the three waves of the Fertility Survey conducted by Spain's National Institute of Statistics (1985, 1999, and 2018) and find that, while the desire for maternity in Spain is not relatively low, the number of actual births is significantly lower. First, we propose alternative theoretical approaches that contribute to a comprehensive vision of this complex phenomenon. Next, we analyze the perceived barriers to maternity in Spain for each period, identifying the factors that influence them. Results indicate that women with higher levels of education are associated with larger gaps between the numbers of children desired and actual children, and that the maintenance of stable relationships and access to good health services contribute to reductions in the maternity gap. Finally, in a differentiated analysis for men and women using data collected in the 2018 wave, we find that the main results are similar for the two sexes, although distinct profiles do emerge depending on the professional status of a woman (when unemployed or inactive) and with respect to the importance of declared reasons for not having children, such as work and reconciliation with maternity (by women) and lacking a suitable partner (by men).

Key words: Fertility intention, fertility behavior, fertility gap, maternity gap, maternity penalty.

JEL codes: J13, J16

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1. INTRODUCTION

Across recent decades, a significant decline has occurred in maternity levels in advanced economies, contributing to an overall relative aging of populations. The persistence of this phenomenon has crucial demographic consequences, also posing a threat to the way societies are organized. In the absence of migration, this would translate to progressive reductions in the total population. This in turn influences the age structure of the population through a comparatively higher rate of aging (Castro-Martín and Martín-García, 2016).

One the most notable case of this phenomenon is observed in Spain, which has rapidly transitioned from a context of medium-high maternity to rank among those countries with the lowest rates. At the end of the 20th century, Spain's maternity rate was equivalent to the generational replacement threshold; currently, the rate is equivalent to 1.2 children per woman. In 2022, Spain registered the lowest number of births was since record-keeping began (329,892, compared to 519,779 in 2008), representing a decline of 1.15% from the previous year. Some of the characteristics leading to this decline in the number of children include delays in opting for children (postponing maternity to a later age) as well as the marital status, educational levels, and economic situations of women (National Institute of Statistics, 2019). The distribution of births in Spain shows a shift to the right (compared to 2005), confirming that the age at which women have children is being postponed. As will be explored in greater depth, the available evidence highlights two characteristics that must be taken into account to understand the evolution of maternity: the *tempo effect* (delays in having children) and the *quantum effect* (reductions in the number of offspring).

In short, in Spain as in other countries, a gap is observed between intentions and actual behaviors in terms of maternity. This study aims to discern the barriers that may prevent people motivated to have children from actually having them, or that cause delays in the age of motherhood. A clear understanding of this phenomenon will be essential to establishing social and public policies that permit individuals to have as many children as they would desire.

To deepen our knowledge of the factors that influence actual behavior, it is necessary to understand the impacts of both external and internal factors on maternity, identifying trends and internal mechanisms that create realistic conditions for increasing maternity as well as capturing the fundamental determinants of indicators on maternity preferences (e.g., the number of children desired). To that end, we consider the cognitive-social model, which establishes that intentions do not always agree with actual behavior.[1]

As potential explanatory factors, various aspects are worth examining. From an economic perspective, maternity costs and opportunity costs can limit the transformation of maternity intentions into actual maternity behaviors. Social factors and individual characteristics likewise constitute determinants that can influence the intention to have children. In this research, we take as sources three available waves of Fertility Surveys (1985, 1999, and 2018) provided by Spain's National Institute of Statistics (INE). Our analysis permits us to identify the role of each factor and to verify its importance at each moment in time.

[1] This has been reported in numerous studies (Bongaarts, 2001; Lieberman, 2007; Hayford and Morgan, 2008; Bachrach and Morgan, 2013).

For empirical analysis we consider a range of personal characteristics (level of training, marital status, age, possible physical handicap), several demographic factors (type of family, religion, possible use of contraceptives), a socioeconomic indicator (employment status), and variables created from the synergy of these characteristics (combinations of age and educational level).

All in all, we can next synthetize the main hypotheses to be tested, Firstly, we analyze the evolution of both the actual and desired number of children over time, utilizing data from three available waves - 1980, 1999, and 2018 -. The objective is to investigate whether the actual number of children has changed according to individual preferences. Specifically, whether the decline in the actual number of children is attributable to changes in individual preferences or if other causes/barriers have influenced this decrease. Secondly, the study aims to determine whether the maternity gap - defined as the disparity between the desired and actual number of children - has increased or decreased over time, considering individuals' personal, demographic, and economic circumstances. Finally, our paper to analyze the causes behind the increase in the childbearing gap, whether economic, social, or simply the preferences of individuals.

Our results indicate that higher levels of education are associated with larger differentials between the numbers of children desired and actual children. On the other hand, the maintenance of stable relationships and access to quality health services contribute to reductions of the maternity gap. Finally, according to data from the 2018 wave of surveys, a differentiated analysis for men and women reveals that the main results for the two sexes are similar, although profiles vary depending on the professional status of the woman (when unemployed or inactive) and with respect to the importance of declared reasons for remaining childless, such as reconciliation with professional life (for women) or lacking a suitable partner (for men).

Beyond this Introduction, the paper is structured as follows. Section 2 presents a review of the literature including the main results of related articles. Section 3 outlines our empirical analysis which is organized in two stages. Firstly, we carry out an exploratory analysis of the data and later on we consider an econometric model with the aim of identifying determinant factors of the maternity gap for the case of Spain for the period 1985-2018. Finally, section 4 provides a series of conclusions drawn from our analysis.

2. LITERATURE REVIEW

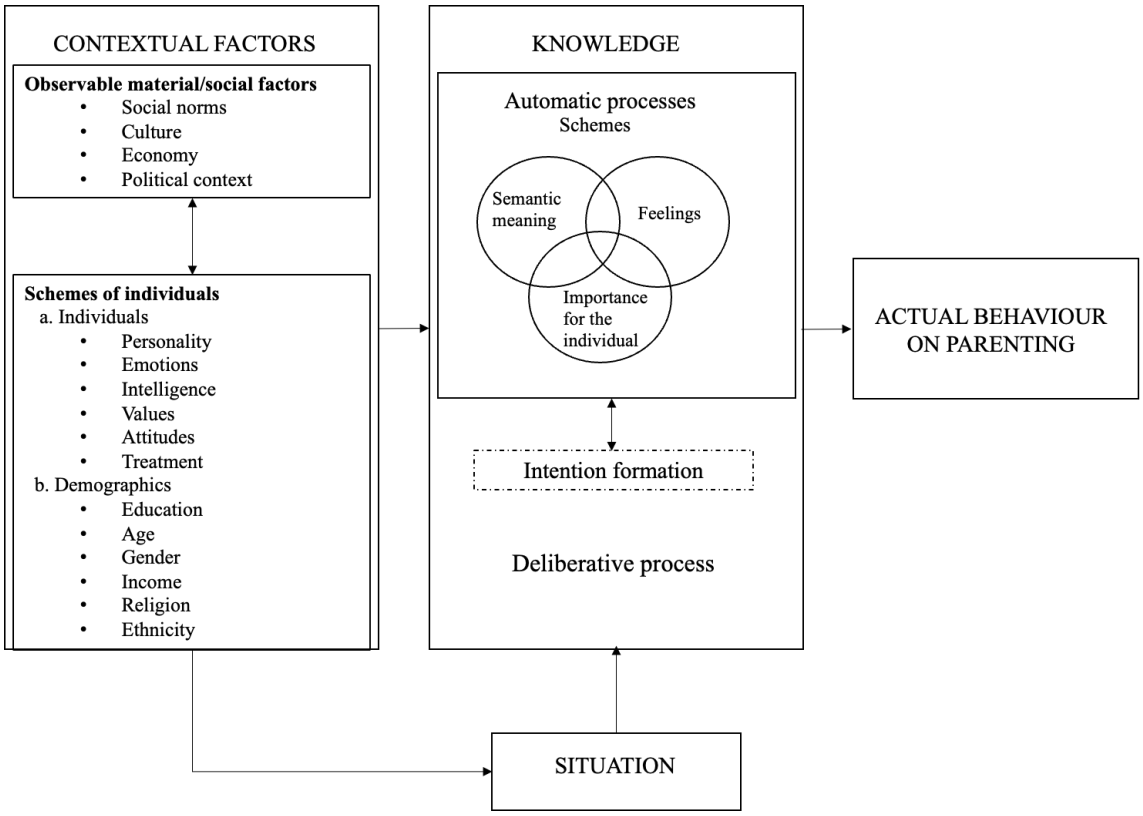
In a context of low maternity, particularly in developed countries, the gap between declared intentions to have children and actual maternity has received considerable interest in recent decades (see Westoff and Ryder, 1977; Quesnel-Vallee and Morgan, 2003; Rossier and Bernardi, 2009; Cleland et al., 2020, among others). In brief, this body of literature covers three dimensions. First, it seeks to discern whether a change in preference has occurred as regards a population's model of 'ideal family' (see Hagewen and Morgan, 2005; Heiland et al., 2008; Iacovou and Tavares, 2011). Second, it seeks to identify any factors that either facilitate or hinder the final decision to have children (see Hayford, 2009; Brauner-Otto and Geist, 2018). Third, it offers

analysis of the differences between these two indicators – 'the maternity gap'[2] – in order to identify patterns explaining its evolution (see Berrington, 2004; Morgan and Rackin, 2010).

From a theoretical perspective, we propose two complementary approaches that seek to formalize an explanation of the complex process underlying the equally complex decision to have children (or not) and its numerous implications.

Initially, Ajzen (1991) developed the so-called theory of planned behavior (TPB), based on planned action and characterized by the establishment of a unidirectional link between individual beliefs and actual behavior. Here both the intention to have children and the actual bearing of children are determined by three types of consideration. First are behavioral or attitudinal beliefs, defined as the perceived consequences (both positive and negative) of having children. Second are considerations related to perceived expectations and/or behaviors of individuals or referent groups that provide social support to a person, along with a person's motivation to please or follow the referents in question (subjective norms). Third is perceived behavioral control, which this approach relates to the presence of perceived factors that can influence a person's ability to decide to have a child.

Diagram 2.1. Outline of the social-cognitive model



Source: Own elaboration based on Bachrach and Morgan (2013)

[2] It must be noted that maternity behavior is the result of continuous decisions influenced by social and individual factors alike (Adsera, 2006).

Subsequently, theories and/or models have been developed that complement the TPB approach. We would highlight the cognitive-social model proposed by Bongaarts (2001), which assumes that intentions do not necessarily coincide with actual behavior in terms of maternity, thus breaking the unidirectionality of the relationship between intention and observed behavior and prompting the need to identify explanatory factors for this divergence (see Diagram 2.1).

'Quantum' and 'tempo' effects

Maternity might be delayed and/or prevented for numerous reasons. First of all, two significant components must be distinguished: the *quantum effect* and the *tempo effect*. 'Quantum' refers to the underlying level of maternity, while 'tempo' measures the effects of change in the relative timing of having a child. In recent decades, a large proportion of countries have experienced a decrease in maternity levels associated with a decrease in childbearing by younger individuals, with a recovery effect at older ages. The combination of these two trends explains why maternity levels have been declining at a slower rate.[3] In this sense, age – while not necessarily a barrier to motherhood in itself – can be classified as a significant precursor to decreased maternity or to having children at older ages.

The macro-level determinants of changes in both *tempo* and *quantum* have been discussed in numerous studies (Chuan, 2010; Martin, 2021). Next, we examine the roles of certain explanatory factors that will later be included in the empirical analysis.

The normative model of the family

One barrier to maternity is the changes that may occur in societal norms about what defines a family. Demographic declines are in this case considered as being due to a decline in maternity caused by changing norms and attitudes. In this line of work, individuals gradually learn through social interactions about the new reproductive balance that must emerge in their community (Munshi and Myaux, 2006).

Within the most advanced societies, some evolving attitudes and norms that can lead to a decrease and/or delay in maternity include changes in norms, values, and attitudes with respect to: marriage and cohabitation, separation and divorce; having children outside of marriage; the development of modern contraceptive systems; greater access to and increased use of contraception; traditional perceptions of gender roles in the family, but with a modern perception of equality within the family; the continued unequal division of responsibilities and work in the home by gender; the deepening or continuation of instability between partners or spouses; temporary or permanent emigration to work or to study, in order to generate income and remittances; the massive expansion of education, mainly at the higher levels; and increases in consumer behavior and in opportunities for learning, leisure activities, and international travel.[4]

[3] For more information, see Grindstaff (1984); Virtala et al., (2006); Chuan (2010); Beaujouan and Toulemon (2021); Chen (2021).

[4] Some studies analyze the evolution of the concept of family (Wissen and Dykstra, 1999; Frejka, 2008; Schleutker, 2014; Sirniö et al., 2017).

Improved possibilities for planning

Since the advent of birth-control, contraceptive methods have become the main instrument for the regulation of children. Moreover, there is now greater access to systems for clinical abortion, offering greater safety and convenience (Mauldin and Segal, 1988; Bongaarts, 2001). In contrast, assisted reproductive technologies have had a positive impact on maternity in some territories (Leridon, 2004).

Influence of educational level on maternity behavior

The decision to have (or not have) children is influenced by many factors, among them the educational level. Numerous studies[5] have established a negative relationship between education and maternity. Furthermore, this inverse effect on maternity implies a delay in the age of bearing one's first child, given that recent developments in medicine and technology can safely ensure such a delay. However, the increase in age of initial childbearing can also pose a risk of involuntary infertility, as well as a limitation in the number of children per family (Nourossadat Kariman et al., 2020).

According to rational choice theory, education and employment fundamentally influence decisions around potential motherhood. From this perspective, it might be expected that, as the duration of education and employment increases, the opportunities for motherhood decrease due to the high opportunity costs.

Multiple factors can explain this inverse relationship between educational level and maternity: a high educational level increases the opportunity cost of maternity (Mason, 1986; Wu and Macneill, 2002), as does the strong development of contraceptive methods (Rosenzweig and Wolpin, 1980).

Despite the limited availability of data showing intentions around maternity (Hoem and Kreyenfeld, 2006), it can be established that the desire to have children increases with higher levels of education, but not if a woman is employed full-time or opts to continue her studies (Wu and Macneill, 2002; Marchetta and Sahn, 2016). Therefore, a permanently negative relationship between employment and maternity can be observed. At relatively advanced ages, the direct relationship between educational level and desire for motherhood is true only in the absence of paid work.

Secondly, at an aggregate level, there might be no relationship between the factors that reduce maternity at early ages and those that stimulate it at older ages (or the decrease in total maternity). Childbirth after the age of 30 is relatively independent of the observed decline at younger ages. At the same time, an inverse relationship has been found at the individual level between the age of having one's first child and the total number of children (Beaujouan and Toulemon, 2021).

[5] Education is seen as a barrier to motherhood (Wu and Macneill, 2002; Marchetta and Sahn, 2016; Nourossadat Kariman et al., 2020; Beaujouan and Toulemon, 2021).

The economic context and female labor participation as conditioning factors

Finally, the decline in maternity associated with the increase in female labor participation is consistent with economic theory, due to the increased opportunity costs associated with a high educational level, greater connection to the labor market, and subsequent improvement in salary prospects (Mishra et al., 2010; Bakar et al., 2014). However, the correlation between female participation in labor and maternity has become increasingly positive, thanks in part to the development of the Welfare State, which permits the reconciliation of motherhood and a professional career through implemented policies that provide employment flexibility and reductions to the opportunity costs of having children (such as child benefits, parental leave, subsidized daycare, etc.) (Del Boca and Locatelli, 2006; Obiyan et al., 2017; Molina, 2021; Zangger et al., 2021).

In some countries with strong work-family reconciliation policies (such as Denmark, Sweden, or Hungary), the provision of a stable job has a positive impact on short-term intentions to not have children; in other countries (such as Spain, Germany, the United Kingdom, and the Netherlands), childless women with low levels of education are most likely to seek maternity in the near future (Lundström and Andersson, 2012; Fahlen, 2013; Billingsley and Ferrarini, 2014).

Even so, preferences as to number of children have not significantly evolved. Given this, labor participation is lower in many countries with lower maternity rates, and vice versa, indicating that institutional structures must be implemented for reconciliation to be fulfilled (Adsera, 2006; Pailhé and Solaz, 2012; Martin, 2021). From this perspective it can be deduced that the gap between maternity intentions and results can be explained by the institutions and policies applied (Kohler et al., 2002; Rindfuss et al., 2003; Dominguez-Folgueras, 2022).

It should be noted that in Nordic countries and in the United States, the combination of flexible labor markets, a large public sector, and high female participation as well as maternity benefits have permitted the maternity rate to remain just below the generational replacement rate (Adsera, 2006; Del Boca and Locatelli, 2006; Ewald et al., 2020; Goldberg and Solheim, 2021). Meanwhile, in the economies of southern Europe (including Spain), the decrease in maternity levels may be associated with high unemployment, lower rates of female labor participation (Adsera, 2006; Goldin, 2014; Sevilla, 2020), the moderate weight of the public sector, and the instability of contracts for young workers, among other factors. In accordance with this perspective, such regions would be well-advised to seek a change in policies, providing greater support for maternity, family life, and the raising of children (Mcdonald, 2006). Along these same lines, Ilciukas (2022) undertakes a causal inference analysis for the Netherlands, finding evidence for the role played by a family support network in childraising. This author demonstrates that a delay in the retirement age of mothers (future grandmothers) negatively affects the maternity decisions of their daughters.

The maternity gap in the case of Spain

One fundamental determinant in studies of the maternity gap in Spain has been the absence of sufficient and periodic data on the maternity intentions of the Spanish population. Prior studies have sought to remedy this lack through specific field work. González-Hincapié and López-López

(2021), among others, have conducted in-depth interviews to analyze the most relevant perceptions and assessments that might be influencing the delay in initial childbirth among women aged 25 to 45 in the Community of Madrid.

This work brings a novel approach with respect to studies using the same data source (Llorente-Marrón et al. (2022), among others) in that it combines figures from the Fertility Survey (FS) of 2018 with prior editions (1985 and 1999), all prepared and published by the INE.[6] Likewise, we developed for the present research (in an initial phase) a database to establish the subsequent levels of the maternity gap, measured as the difference between the intention to have children and actual motherhood. Together with our objective variable, we consider various individual characteristics (age, educational level, employment status, among others).

All in all, upon the basis of this previous evidence we validate inhere the following hypotheses:

Firstly, we analyze the evolution of both the actual and desired number of children over time, utilizing data from three available waves - 1980, 1999, and 2018 -. The objective is to investigate whether the actual number of children has changed according to individual preferences. Specifically, whether the decline in the actual number of children is attributable to changes in individual preferences or if other causes/barriers have influenced this decrease.

Secondly, the study aims to determine whether the maternity gap - defined as the disparity between the desired and actual number of children - has increased or decreased over time, considering individuals' personal, demographic, and economic circumstances.

Finally, our paper to analyze the causes behind the increase in the childbearing gap, whether economic, social, or simply the preferences of individuals.

3. EMPIRICAL STRATEGY AND RESULTS

In this section we first present a descriptive approach to our database, then carry out a multivariate empirical analysis that allows us to contribute to a better understanding of this phenomenon for the case of Spain. Later on, we introduce an econometric model for identifying determinant factors shaping the recent evolution of Maternity gap indicator considered.

3.1. DESCRIPTIVE ANALYSIS

With regard to our database, we extracted information from the three existing waves of the Fertility Survey (1985, 1999, and 2018) on the average number of children as well as the desired number of children in the case of Spain.

Given differences in the construction of variables in these three waves, we detail below the definitions used in each case for the indicator of the number of children desired. The number of desired children in 1985 was obtained from the interaction of three variables: the number of children desired at the time of forming a couple; the number at present; and the intention to have

[6] Available at: https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177006&menu=resultados&idp=1254735573002#!tabs-1254736195425

children in the future. For 1999, the number of children desired was calculated from the interaction of two variables: the number of children currently desired, and the number desired in the past. Finally, for the 2018 wave, the number of children desired was obtained by combining two variables that refer to this fact: a first question that refers to the total number of children that each woman respondent would like to have (NTOTALHIJOS/AS), and where this information is not available, a second variable that allows significant improvement to the coverage of the total sample (NDESEOHIJO).

Table 3.1.1. Definition of the variable "number of children desired"

Survey year	Variables included	Calculation formula
1985	**P427**[a]: "You had some idea of the number of children you wanted at the time you formed your partnership" **P428**: "Number of children you wanted to have at the time you formed your partnership" **P432**[a]: "You intend to have more children in the future" **P434**: "Number of children you intend to have in the future" **P435**: "Number of children you would like to have at this moment"	= **P428**, if **P427** = 1 = **P434**, if **P432** = 1 = **P435**, if **P427** = 6 and **P432** = 6
1999	**VIVO**: "Number of children born (living)" **COINCIDE**[b]: "Does the number of children you have had coincide with the number you would have liked or still wish to have?" **DESEOHIJ**[b]: "Would you like or would have liked to have children?" **NUMDESEO**: "Number of children you would like or would have liked to have"	= 0, if **DESEOHIJ** = 2 = **VIVO**, if **COINCIDE** = 1 = **NUMDESEO**, if **DESEOHIJ** = 1
2018	**NTOTALHIJOS/AS**: "Total number of children you would have liked to have" **NDESEOHIJO**: "Number of children desired (for those who have children and for those who do not)"	= **NTOTALHIJOS/AS**, if **NTOTALHIJOS/AS** ≠ not available = **NDESEOHIJO**, if **NTOTALHIJOS/AS** = not available
Source: own elaboration		
Notes: a) Dichotomous variables take values 1 and 6 to indicate YES and NO, respectively. b) Dichotomous variables take values 1 and 2 to indicate YES and NO, respectively.		

Table 3.2 gives exploratory data on the distribution of Spain's female population by age according to the numbers of actual children and children desired across the three surveys. In all three waves,

the number of women under 29 with no children is quite high, at over 60% in 1985 and approaching 90% in 1999 and 2018; the proportion of women with children increases at later ages. For those over 45 years of age, the relative weight of women without children increases significantly between 1985 and 2018 (from 12.06% to 18.74%). Furthermore, women with more than one child in 2018 represented around 60%, which is 20% below the 1985 figure.

Table 3.1.2. Distribution of women of childbearing age (between 18 and 49 years) according to number of children and age, 1985-2018

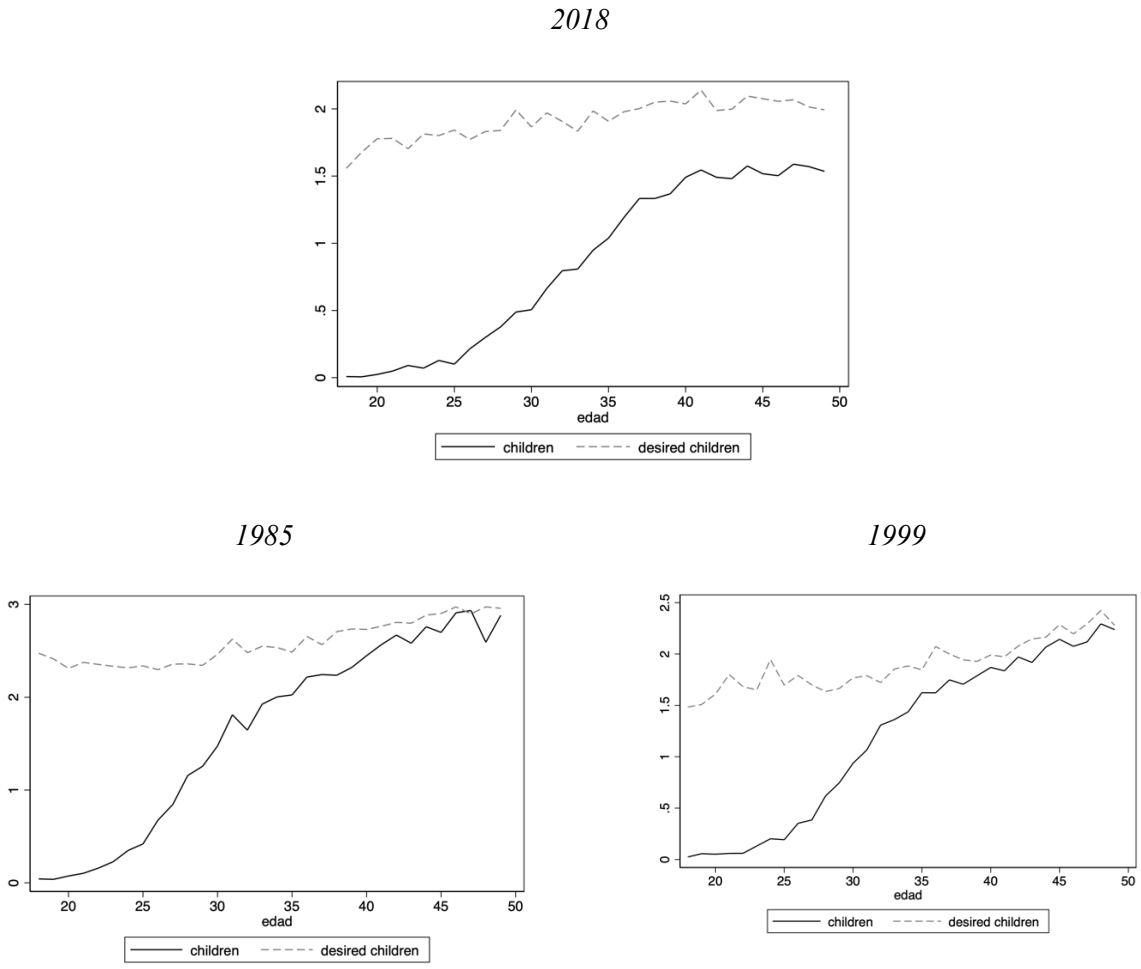
Age	Children	Actual number of children			Desired number of children			Maternity gap		
		1985	1999	2018	1985	1999	2018	1985	1999	2018
18 to 29	0	63.86	85.15	88.13	0.06	23.80	22.35	11.69	30.97	28.17
	1	21.45	9.89	7.36	7.10	8.88	8.28	22.50	5.81	9.17
	2	11.40	4.42	3.43	63.22	44.14	45.04	44.68	40.44	41.75
	3	2.29	0.50	0.99	22.35	17.95	20.39	15.56	17.55	17.47
	4	0.76	0.00	0.09	5.88	4.21	2.74	3.27	4.21	2.11
	5	0.16	0.03	0.01	0.66	0.79	0.64	0.56	0.79	0.65
30 to 34	0	16.95	25.72	51.99	0.00	8.08	10.98	40.57	71.57	36.95
	1	19.70	32.70	25.21	5.67	22.25	16.00	28.63	3.50	21.18
	2	40.46	35.54	17.55	53.46	55.81	48.42	14.73	17.45	30.54
	3	16.23	5.23	3.56	30.07	11.35	20.81	5.52	5.53	8.55
	4	4.75	0.54	1.30	7.38	1.55	2.76	1.45	1.29	0.58
	5	1.01	0.17	0.30	0.77	0.67	0.85	0.03	0.53	0.26
35 to 39	0	13.35	12.34	27.78	0.00	5.45	7.25	48.66	88.04	48.87
	1	10.54	21.77	30.22	4.63	12.94	17.42	19.03	2.17	27.16
	2	39.18	48.94	32.30	46.47	60.64	47.40	11.38	6.60	18.12
	3	25.02	14.01	7.51	33.84	17.69	23.43	3.98	2.52	3.69
	4	7.79	2.08	1.55	11.07	2.48	3.26	2.46	0.59	0.56
	5	2.99	0.81	0.45	1.88	0.73	0.87	0.69	0.08	0.11
40 to 44	0	11.66	9.24	18.99	0.00	6.44	7.90	44.46	93.36	58.73
	1	7.46	16.62	24.96	4.26	13.61	15.20	17.55	1.71	23.61
	2	32.62	48.50	43.79	41.45	53.90	49.75	10.35	3.63	12.19
	3	26.71	19.90	9.40	35.30	20.60	21.29	4.25	0.86	1.44
	4	12.60	3.66	2.00	14.23	3.81	4.62	1.55	0.43	0.36
	5	5.61	0.87	0.51	2.78	0.81	0.91	0.21	0.00	0.19
45 and older	0	12.06	6.30	18.74	0.00	3.04	9.15	30.00	94.05	45.84
	1	8.69	10.29	23.85	3.97	6.58	14.48	21.59	0.60	19.40
	2	30.16	45.78	44.69	40.48	51.91	49.05	26.14	3.59	24.15
	3	22.61	23.77	9.98	30.82	26.25	21.15	9.27	0.81	7.57
	4	12.35	8.96	1.83	14.81	8.79	4.26	2.50	0.86	0.89
	5	6.51	3.12	0.51	4.07	2.59	0.97	0.43	0.09	0.30

Source: Own elaboration based on the Fertility Survey (1985, 1999, 2018), INE.

Figure 3.1 illustrates the desired and actual maternity indicators for women according to age for the three waves of the FS. Here it can be seen how the maternity gap (the difference between

numbers of actual and desired children) increases across the three waves, especially among women aged 25 to 29. Through the period of 1999 to 2018, a large difference is observed between the ages of 25 and 35. This evidence, together with the data in Table 3.2, reinforces the hypothesis already raised in prior studies (see Grindstaff, 1984; Virtala et al., 2006; Chuan, 2010; Beaujouan and Toulemon, 2021; Chen, 2021; and Martin, 2021) that confirm both a delay in childbearing age (*tempo effect*) and a reduction in actual maternity levels at the end of women's fertile period (*quantum effect*).

Figure 3.1.1. Indicators of desired versus actual maternity in Spain, 1985-2018



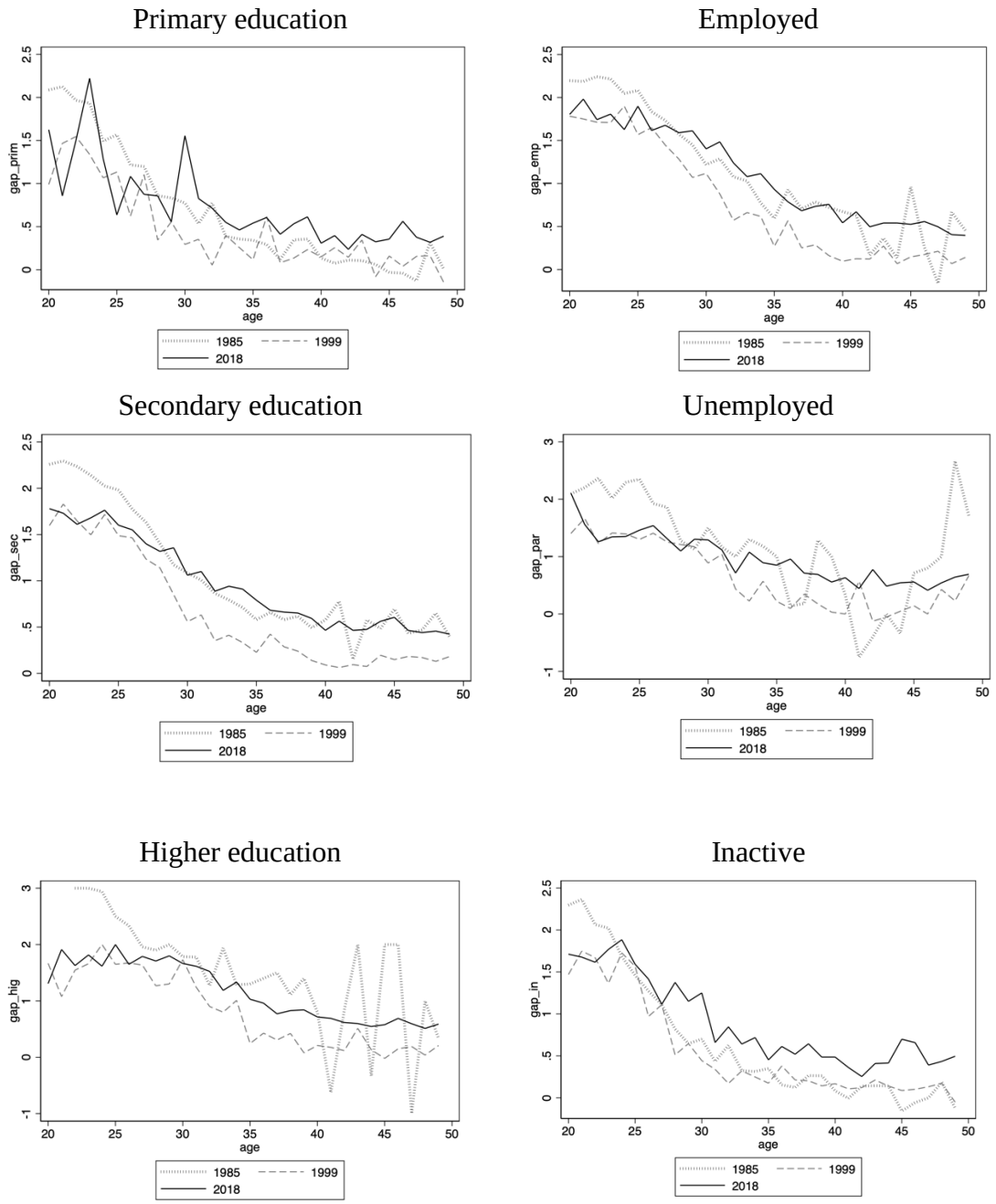
Source: Own elaboration based on the Fertility Survey (1985, 1999, 2018), INE.

The three charts offer separate information on the two components; while maternity dropped significantly across the period, from 3 to 1.5 children per woman at age 49, the desire to have children did not experience the same decline (or at least not the same intensity of decline).

Turning to the main socioeconomic characteristics that may affect maternity rates, we present the results obtained according to the educational level and employment situation of the interviewee; also given are the main reasons behind those decisions for individuals who do not want children or who have had enough children.

Figure 3.2 displays the maternity gap by educational level and employment status. Here a larger gap is observed both for higher educational levels and for the 2018 wave of the survey. The same is true of the employment situation, with a greater maternity gap observed when a woman is employed.

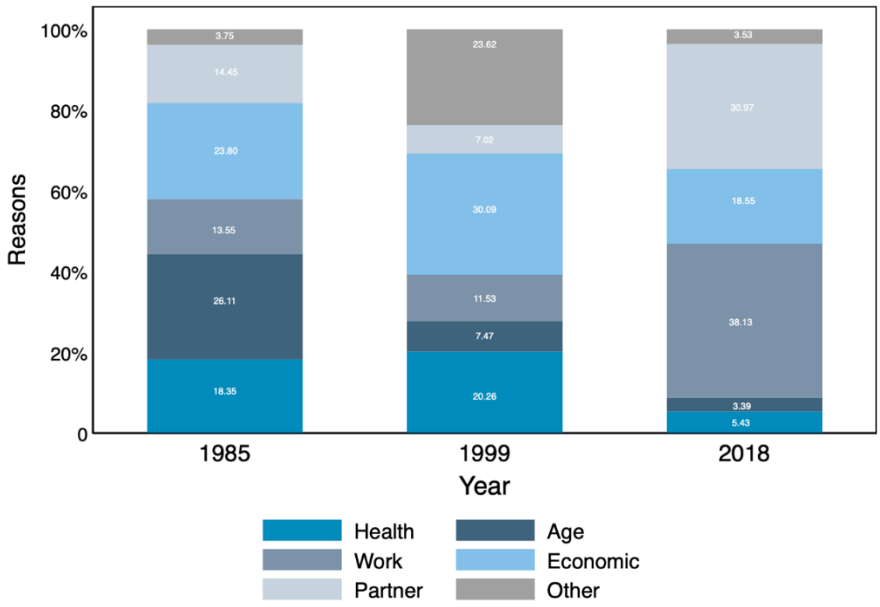
Figure 3.1.2. Maternity gap for women of childbearing age (aged 18 to 49 years) according to age, educational level, and professional situation, 1985-2018



Source: Own elaboration based on the Fertility Survey (1985, 1999, 2018), INE.

To conclude this descriptive section, despite limitations around the comparability of 'reasons given' in the different waves, we present the main reasons declared by surveyed women for choosing not to become mothers or not to have additional children. The results are found to differ with the reference periods: in 1985 and 1999, prevalent reasons given as barriers to motherhood include economic, older age, and the health of the mother and child; in 2018, the problem of reconciling work with family and the lack of a stable employment situation or suitable partner all stand out.

Graph 3.1.1. Reasons why women decide not to have children



Source: Own elaboration based on the Fertility Survey (1985, 1999, 2018), INE.

3.2. DETERMINING FACTORS OF THE MATERNITY GAP IN SPAIN

For joint analysis of the roles of potential determining factors based on the three waves of data (1985, 1999, and 2018) from the Fertility Survey published by the INE, we employ the econometric model of Ordinary Least Squares (OLS), estimating the incidence of certain social, demographic, and economic factors on the number of children desired, actual maternity figures, and the maternity gap. The goal of this analysis is to discern what characteristics encourage women not to have children.

In multiple linear regression analysis, the objective is to find the most appropriate linear combination of the explanatory variables for prediction of the dependent variable. Use of the OLS method aims at minimizing the sum of the squares of the differences between the predicted values and the actual values of the dependent variable.

The multiple linear regression model relates the variables *x* and *y*. The equation that relates these variables is as follows:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_p x_p + u$$

The variable *y* is the dependent variable, while *x* denotes the total set of explanatory variables. $\beta_0, \beta_1, \beta_2, \ldots, \beta_p$ are the regression coefficients associated with each independent variable, while *u* is the error or disturbance term in the relationship.

In this way, the parameters $\beta_0, \beta_1, \beta_2, \ldots, \beta_p$ are estimated with the OLS method from a sample of the population, and the following equation is obtained:

$$\hat{y}_i = \hat{\beta}_0 + \hat{\beta}_1 x_1 + \hat{\beta}_2 x_2 + \cdots + \hat{\beta}_p x_p$$

In this case, we propose the use of three dependent variables based on the estimates established below: the number of children desired, actual maternity figures, and the maternity gap.

The explanatory variables used are as follow:

- Marital status: a nominal qualitative variable whose categories are single, married, widowed, separated, or divorced. The omitted category is "single".
- Age: an ordinal qualitative variable whose categories are between 18 and 29 years, between 30 and 34 years, between 35 and 39 years, between 40 and 44 years, and older than 45 years.
- Age^2: variable calculated by squaring the age.
- Use of contraceptives: a binary variable that takes the value 1 if use is affirmative, and 0 otherwise. The omitted category is "use of contraceptives".
- Educational level: an ordinal qualitative variable whose categories are primary education, secondary education, and higher education. The omitted variable is "primary education level".
- Residence situation: a qualitative variable whose values are cohabitation with the partner and non-cohabitation with the partner. The omitted category is "cohabitation with the partner".
- Religion practiced: a nominal qualitative variable whose values are: Christianity, another religion, no belief, and does not know. The omitted category is "Christianity".
- Employment status: a nominal qualitative variable that takes the following values: employed, unemployed, and inactive. The omitted category is "employed".
- Physical impediment: a variable that assesses whether the woman interviewed has any physical impediment that prevents childbearing. The omitted category is "presents some physical impediment".

In turn, other variables created from the synergy between certain of the above-mentioned explanatory variables have been added to the model.

- E30_sup: a binary variable that takes the value 1 if the individual is aged younger than 30 and has completed higher education, and 0 otherwise.

- E40_sup: a binary variable that takes the value 1 if the individual is aged 40 or older and has completed higher education, and 0 otherwise.

The first three columns of Table 3.3 show the relationship between the number of actual children and the aforementioned explanatory variables:[7]

$$\widehat{children} = \hat{\beta}_0 + \hat{\beta}_1 ms + \hat{\beta}_2 age + \hat{\beta}_3 age^2 + \hat{\beta}_4 contraceptives + \hat{\beta}_5 edu + \hat{\beta}_6 res + \hat{\beta}_7 rel + \hat{\beta}_8 jobs + \hat{\beta}_9 physimp + \hat{\beta}_{10} e30\_sup + \hat{\beta}_{11} e40\_sup \quad (1)$$

Some conclusions can be drawn from this estimate. In the first instance, a direct relationship is found between the number of actual children and married, widowed, separated, or divorced women, as compared to single women. The age variable is also directly associated with the actual number of children. The achievement of higher educational levels by women and non-cohabitation with the partner exhibit an inverse relationship with the actual number of children. When the job status is "inactive", this translates to an increase in the actual number of children.

In turn, the last three columns of Table 3.3 show the relationship between the number of children desired and the explanatory variables.

$$\widehat{deschild} = \hat{\beta}_0 + \hat{\beta}_1 ms + \hat{\beta}_2 age + \hat{\beta}_3 age^2 + \hat{\beta}_4 contraceptives + \hat{\beta}_5 edu + \hat{\beta}_6 res + \hat{\beta}_7 rel + \hat{\beta}_8 jobs + \hat{\beta}_9 physimp + \hat{\beta}_{10} e30\_sup + \hat{\beta}_{11} e40\_sup \quad (2)$$

In the first instance, the desired number of children is higher if the woman is married or divorced. If the woman belongs to a religion other than Christian and is inactive, there is a direct relationship with the number of children desired.

Table 3.4 shows the relationship between the maternity gap and the aforementioned explanatory variables:

$$\widehat{gap} = \hat{\beta}_0 + \hat{\beta}_1 ms + \hat{\beta}_2 age + \hat{\beta}_3 age^2 + \hat{\beta}_4 contraceptives + \hat{\beta}_5 edu + \hat{\beta}_6 res + \hat{\beta}_7 rel + \hat{\beta}_8 jobs + \hat{\beta}_9 physimp + \hat{\beta}_{10} e30\_sup + \hat{\beta}_{11} e40\_sup \quad (3)$$

In the first instance, an inverse relationship is observed between the maternity gap and whether the marital status is married or widowed, as compared to single women. Age is negatively related to the maternity gap. On the other hand, there is a direct relationship between higher educational levels and the maternity gap.

Numerous conclusions emerge from these results. In line with previous research,[8] in Spain, individuals with higher incomes and a stable employment situation tend to postpone the age of initial maternity and also not to eventually have the number of children they desire, with a certain gap. This can be attributed to the characteristics of Spain's labor market (with little flexibility) and to modest representation of the public sector, with a perceived lack of institutions regulating

[7] Given the complexity of comparing the different waves of the FS, it has not been possible to include the income level, as no data were available for 1985 or 1999. However, as a sensitivity analysis, the income level has been included (in logarithms) for the 2018 dataset (see Tables 6.1.4 and 6.1.5), maintaining the main conclusions that we extract from the model.

[8] Women with higher levels of education and higher income postpone motherhood (*tempo effect*), see Kohler et al. (2002); Adsera (2006); Del Boca and Locatelli (2006); Lundström and Andersson (2012); Fahlen (2013)

the reconciliation of domestic and extra-domestic work. On the other hand, women who choose to continue professional training prefer to delay the age of maternity, with the aims of finishing their studies and having more time to be a mother, due to associated costs (Virtala et al., 2006).

Table 3.2.1. Relationship between the numbers of actual children and children desired and the explanatory variables

	Actual number of children			Number of children desired		
	1985	1999	2018	1985	1999	2018
ms: married	1.086***		0.721***	0.480		0.426***
	(0.274)		(0.0358)	(0.306)		(0.0376)
ms: widowed	0.875***	0.992***	0.554**	0.287	0.411**	0.518***
	(0.216)	(0.134)	(0.221)	(0.217)	(0.170)	(0.152)
ms: separated or divorced	0.714***	1.023***	0.772***	0.779***	0.0427	0.465***
	(0.235)	(0.0744)	(0.0565)	(0.275)	(0.108)	(0.0560)
age	0.0605*	-0.0195	0.142***	-0.0790**	-0.0132	0.0145
	(0.0320)	(0.0213)	(0.0104)	(0.0392)	(0.0424)	(0.0144)
age^2	0.000152	0.000930**	-0.00150***	0.00139***	0.000272	-0.000250
	(0.000466)	(0.000370)	(0.000154)	(0.000529)	(0.000641)	(0.000204)
Use of contraceptives: no	0.269***	0.0874***	-0.147***	0.205**	0.0172	0.0321
	(0.0918)	(0.0283)	(0.0230)	(0.0865)	(0.0887)	(0.0330)
ed: secondary	-0.221***	-0.359***	-0.200***	-0.0600	0.0465	-0.0416
	(0.0639)	(0.0799)	(0.0421)	(0.0614)	(0.115)	(0.0430)
ed: higher	-0.182	-0.721***	-0.482***	0.578	-0.254	-0.0201
	(0.222)	(0.0974)	(0.0503)	(0.357)	(0.187)	(0.0528)
residence: non-cohabit w/partner	0.237	-0.430***	-0.226***	0.0340	-0.242**	-0.123***
	(0.246)	(0.0662)	(0.0302)	(0.286)	(0.0945)	(0.0395)
religion: other	-0.825***	0.0527	0.335***	0.229	-0.265*	0.230***
	(0.309)	(0.0569)	(0.0577)	(0.299)	(0.137)	(0.0564)
religion: non-believer	0.120	-0.00355	-0.0490**	-0.506***	-0.304*	-0.201***
	(0.380)	(0.0503)	(0.0225)	(0.153)	(0.161)	(0.0411)
religion: does not know	0.0918	-0.104	-0.136***	-0.191	-0.516***	-0.229***
	(0.264)	(0.0647)	(0.0327)	(0.165)	(0.169)	(0.0426)
job status: unemployed	0.0755	0.0279	0.105***	-0.130	-0.0163	0.0649*
	(0.178)	(0.0366)	(0.0324)	(0.165)	(0.107)	(0.0374)
job status: inactive	0.167**	0.167***	0.153***	0.00663	0.00996	0.00848
	(0.0708)	(0.0368)	(0.0286)	(0.0613)	(0.0959)	(0.0386)
physical impediment: no	0.210*	0.0130	0.388***	-0.0450	-0.481**	0.0371
	(0.126)	(0.194)	(0.0628)	(0.0989)	(0.209)	(0.0629)
e30_sup	-0.306	0.292***	-0.0508	-0.488	0.260	0.0822
	(0.234)	(0.0597)	(0.0338)	(0.553)	(0.190)	(0.0679)
e40_sup	0.240	-0.248**	0.274***	-0.373	-0.390*	0.0550
	(0.416)	(0.126)	(0.0444)	(0.512)	(0.228)	(0.0507)
Constant	-1.700***	0.647*	-2.417***	2.985***	2.604***	1.618***
	(0.615)	(0.341)	(0.184)	(0.758)	(0.702)	(0.257)
Observations	2,040	1,726	10,015	2,040	1,467	10,015
R^2	0.209	0.641	0.425	0.060	0.030	0.062

Standard deviation in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3.2.2. Relationship between the maternity gap and the explanatory variables

Maternity gap	(1) 1985	(1) 1999	(1) 2018
ms: married	-0.606*		-0.295***
	(0.336)		(0.0390)
ms: widowed	-0.587**	-0.891***	-0.0356
	(0.267)	(0.143)	(0.158)
ms: separated or divorced	0.0654	-1.017***	-0.307***
	(0.307)	(0.0938)	(0.0570)
age	-0.139***	0.00889	-0.127***
	(0.0412)	(0.0432)	(0.0138)
age^2	0.00123**	-0.000587	0.00125***
	(0.000562)	(0.000647)	(0.000195)
use of contraceptives: no	-0.0636	-0.0461	0.179***
	(0.109)	(0.0902)	(0.0333)
ed: secondary	0.161**	0.329***	0.158***
	(0.0711)	(0.120)	(0.0421)
ed: higher	0.760**	0.391**	0.462***
	(0.344)	(0.190)	(0.0522)
residence: non-cohabit w/partner	-0.203	0.198*	0.103***
	(0.277)	(0.107)	(0.0391)
religion: other	1.055**	-0.274*	-0.103*
	(0.453)	(0.147)	(0.0557)
religion: non-believer	-0.626**	-0.270*	-0.152***
	(0.306)	(0.158)	(0.0411)
religion: does not know	-0.283	-0.437***	-0.0930**
	(0.252)	(0.167)	(0.0404)
job status: unemployed	-0.207	-0.0358	-0.0397
	(0.230)	(0.110)	(0.0370)
job status: inactive	-0.160**	-0.128	-0.144***
	(0.0712)	(0.0968)	(0.0358)
physical impediment: no	-0.255**	-0.457	-0.351***
	(0.113)	(0.368)	(0.0689)
e30_sup	-0.182	-0.0616	0.133*
	(0.479)	(0.191)	(0.0683)
e40_sup	-0.612	-0.172	-0.219***
	(0.640)	(0.229)	(0.0481)
Constant	4.685***	1.880**	4.035***
	(0.811)	(0.776)	(0.246)
Observations	2,040	1,467	10,015
R^2	0.123	0.167	0.190

Standard deviation in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Finally, Annex A presents the results of a differentiated analysis for men and women, taking advantage of the inclusion of male respondents in the 2018 wave of the survey (and providing estimates of the numbers of actual children and children desired as well as the maternity gap). The following conclusions have been drawn from our results.

In the first instance, the main results are similar for the two sexes, with no very significant differences observed in terms of the maternity gap or with respect to its two components. That is, we identify the same determining factors regarding the numbers of actual/desired children once the various personal, demographic, and socioeconomic characteristics have been controlled. However, we do find differentiated profiles in specific situations. For example, when women are inactive or unemployed, this favors a larger maternity gap (for those 30 years of age and older) as well as a greater average number of actual children. Finally, as regards the declared reasons for not having children, in the age range of 30 to 40 years, both job activity and reconciliation with domestic work carry greater weight for women, while not having a suitable partner carries more weight among men.

4. CONCLUSIONS

In this research we have analyzed the maternity gap in Spain, a phenomenon of great social and economic relevance that we confirm as presenting significant challenges from a technical perspective: on the one hand, correct theoretical delimitation of the concept, and assessment of the role that certain socioeconomic characteristics can play; on the other hand, the availability of quality quantitative information that permits empirical measurement as well as systematic and periodic analyses.

Specifically, we have drawn on data from the three waves of the Fertility Survey from Spain's National Institute of Statistics (1985, 1999, and 2018), finding that although the desire for children among Spaniards is not relatively low, the actual number of children is significantly lower. Therefore, following a synthesis of existing evidence at the international level, we can now propose alternative theoretical approaches that contribute to a more comprehensive view of this complex phenomenon.

We have also estimated the barriers to having children in Spain ('the maternity gap') and identified the factors that influence it, distinguishing between the desire of Spaniards to have children and actual childbearing statistics.

The results indicate that maintaining stable relationships and access to good health services contribute to a reduction in the maternity gap. To the contrary, higher levels of education are associated with greater differentials between the numbers of actual children and children desired.

Furthermore, in our differentiated analysis for men and women using data from the 2018 survey, we find that the main results are similar for the two sexes, with no very significant differences in terms of the fertility gap. Nevertheless, some differentiated profiles are observed depending on the professional status of the woman (when unemployed or inactive) and as regards the importance of declared reasons for remaining childless, such as job activity and reconciliation with domestic life (for women) and not having a suitable partner (for men).

Based on the new evidence obtained, we can gather some principal implications for the design and implementation of public policies. First, our results reveal a stated preference for having children that is greater than the actual number; thus, the implementation of policies that reduce the barriers to motherhood identified in this research would be worthy of consideration. Second,

in terms of equality, society now faces a significant challenge, in that our results indicate the existence of a trade-off for women between achieving higher educational levels and seeing their intentions for maternity realized. The first goal is undoubtedly positive, permitting women to obtain better jobs and pursue a more fulfilling professional career; the second goal evidently hinders their full personal and family development, with implications for society as a whole, in both the demographic and socioeconomic spheres.

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6. ANNEXES

6.1. ANNEX A. DIFFERENCES IN FERTILITY PREFERENCES BY GENDER, ACCORDING TO THE FERTILITY SURVEY (2018)

The Fertility Survey of 2018 provides for the first-time information disaggregated by gender on the distribution by age of the average numbers of actual children and children desired, depending on the educational level, the employment situation of the interviewee, and the main reasons behind maternity decisions for those who do not want children or already have enough children.

Table 6.1.1 displays gender differences (women–men) in the distribution of the fertility gap by age. Although the term 'maternity gap' has been used to refer to the calculated difference between the number of children desired and the actual number of children, in this Annex we also use the concept 'fertility gap' – common in studies of birth-rates – given that we include an analysis differentiated by gender. Gender differences in the fertility gap begin to increase with age and with the number of children. Table 6.1.2 shows the gender differences (women–men) in the average number of children by age group, educational level, and professional situation. The results show no significant differences between men and women in educational terms. To the contrary, when the professional situation is compared, the results do differ between men and women, as differences according to gender increase when women are inactive or (above all) unemployed.

Finally, Table 6.1.3 shows the gender differences (women–men) in the distribution of reasons for not having children, according to age groups. The largest gender differences occur due to the lack of a stable work situation and/or reconciliation with the family environment in the case of women, while the main reason for men to remain childless is the lack of a suitable partner.

In summary, this Annex presents a differentiated analysis for men and women, taking advantage of the inclusion of male respondents in the 2018 wave of the survey, as well as estimates for the numbers of actual and desired children and the fertility gap. Conclusions emerging from our results include the following: the main results are similar for the two sexes, with no very significant differences observed in terms of the maternity gap or with respect to its two components. We identify the same determining factors regarding the numbers of actual and desired children once the various personal, demographic, and socioeconomic characteristics are controlled. However, we do find differentiated profiles in specific situations; for example, when a woman is inactive or unemployed, this favors a larger fertility gap (from 29 years of age and older) as well as a larger average number of children. As regards the declared reasons for not having children, in the age range of 29 to 40 years, work and reconciliation with home-life carry greater weight for women, while for men the lack of a suitable partner weighs more.

Table 6.1.1. Differences (Women – Men) in distribution of the fertility gap according to age groups in 2018

	Fertility gap (Women – Men)				
	Ages 18-29	Ages 30-34	Ages 35-39	Ages 40-44	45 and older
0	-6.98	-10.85	-13.26	-12.70	-1.39
1	3.09	5.47	5.79	2.90	-0.66
2	3.05	4.51	2.28	7.88	-2.45
3	0.99	0.09	3.51	0.18	6.16
4	-0.15	0.40	1.05	0.88	-2.29
5	0.01	0.30	0.45	0.51	0.25

Source: Own elaboration based on the Fertility Survey (2018), INE.

Table 6.1.2. Differences (Women – Men) in the average number of children according to age group, educational level, and professional situation in 2018

		Average number of children (Women – Men)				
		Ages 18-29	Ages 30-34	Ages 35-39	Ages 40-44	45 and older
Educational level	Primary	0.60	0.24	0.54	0.59	0.11
	Secondary	0.13	0.34	0.33	0.18	0.16
	Higher	0.05	0.05	0.22	0.34	-0.09
Work situation	Employed	0.09	0.01	0.14	0.18	0.00
	Unemployed	0.22	0.56	0.58	0.28	0.30
	Inactive	0.13	0.81	1.27	1.14	0.41

Source: Own elaboration based on the Fertility Survey (2018), INE.

Table 6.1.3. Differences (Women – Men) in the distribution of reasons for not having children according to age group in 2018

	Reasons for not having children (Women – Men)				
	Ages 18-29	Ages 30-34	Ages 35-39	Ages 40-44	45 and older
Desired family size	-1.43	0.51	-1.72	3.90	17.24
Health	1.19	2.57	4.16	6.16	7.03
Too old	-0.02	0.00	-1.52	4.75	1.52
Work and reconciliation	12.73	6.93	9.59	2.79	-1.32
Economic reasons	-0.94	-3.15	1.86	-6.11	-12.65
No adequate partner	-12.05	-3.56	-11.97	-10.51	-14.70
Others	0.52	-3.30	-0.39	-0.98	2.88

Source: Own elaboration based on the Fertility Survey (2018), INE.

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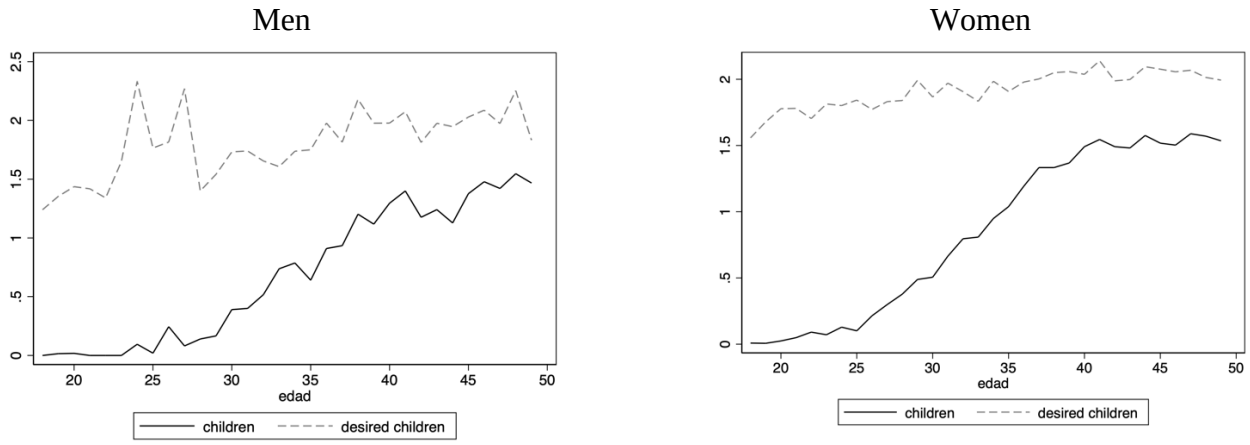
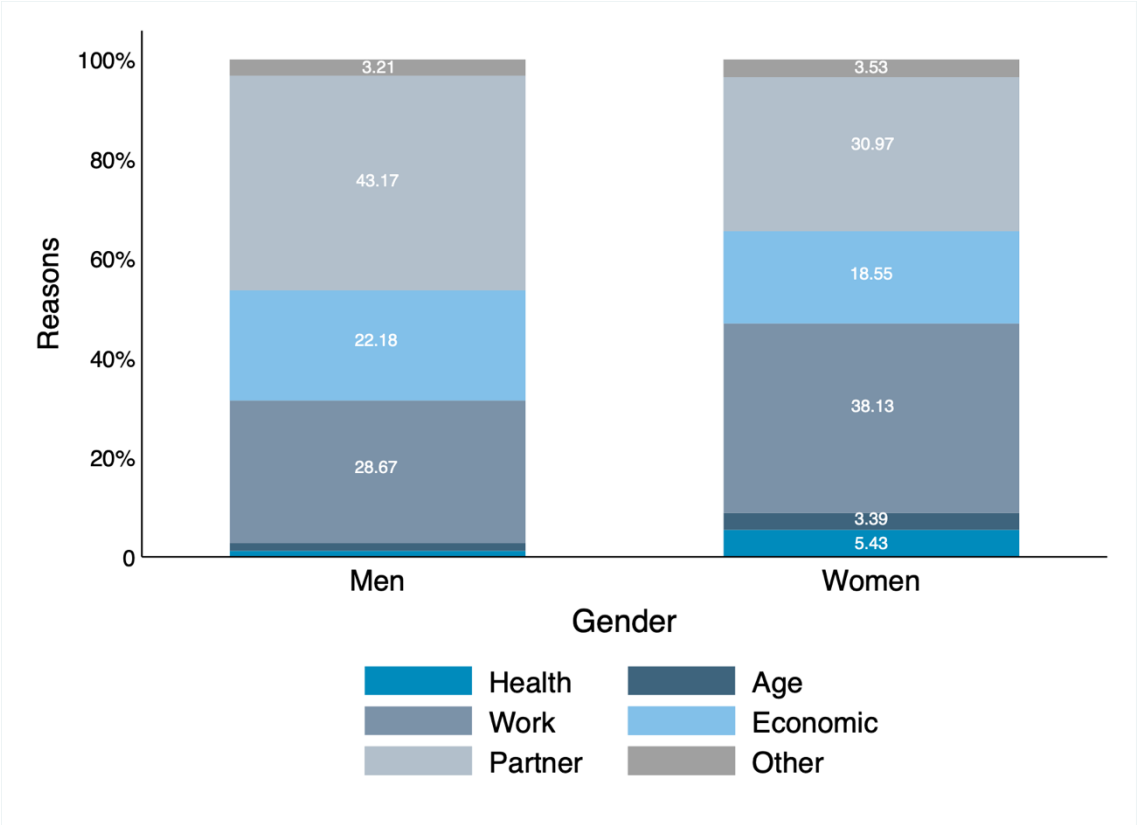
Figure 6.1.1. Desired versus actual fertility indicators in Spain in 2018



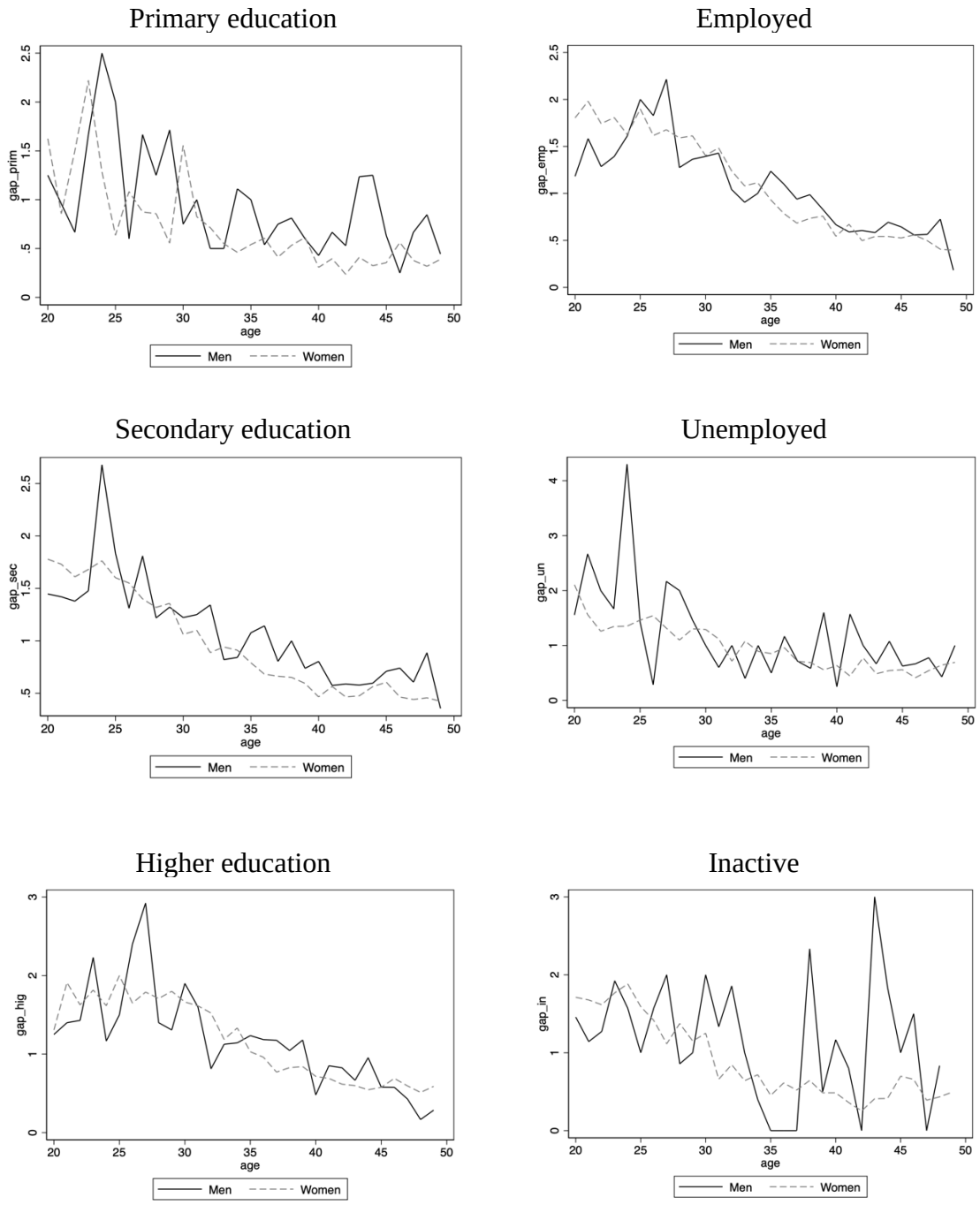
Source: Own elaboration based on the Fertility Survey (2018), INE.

Graph 6.1.1. Reasons why individuals decide not to have children, by gender in 2018



Source: Own elaboration based on the Fertility Survey (2018), INE.

Figure 6.1.2. Fertility gap during childbearing years (aged 18 to 49 years) according to gender, age, educational level, and professional situation in 2018



Source: Own elaboration based on the Fertility Survey (2018), INE.

Table 6.1.4. Relationship between the numbers of actual and desired children and the explanatory variables from the Fertility Survey (2018)

	Actual number of children		Desired number of children	
	Men	Women	Men	Women
ms: married	0.821***	0.736***	0.432**	0.432***
	(0.0742)	(0.0435)	(0.209)	(0.0408)
ms: widowed		0.307*		0.505***
		(0.174)		(0.151)
ms: separated or divorced	0.739***	0.824***	0.0322	0.514***
	(0.171)	(0.0694)	(0.211)	(0.0703)
age	0.0480**	0.130***	0.0820*	0.0171
	(0.0230)	(0.0126)	(0.0478)	(0.0174)
age^2	-0.000254	-0.00133***	-0.000952	-0.000274
	(0.000341)	(0.000185)	(0.000721)	(0.000243)
use of contraceptives: no	-0.118**	-0.118***	-0.0105	-0.0257
	(0.0486)	(0.0282)	(0.0926)	(0.0325)
ed: secondary	-0.165*	-0.183***	0.0464	-0.0297
	(0.0859)	(0.0512)	(0.116)	(0.0510)
ed: higher	-0.234**	-0.439***	0.0412	-0.00593
	(0.116)	(0.0612)	(0.156)	(0.0644)
residence: non-cohabit w/partner	-0.409***	-0.216***	-0.0837	-0.0716
	(0.0667)	(0.0367)	(0.241)	(0.0477)
religion: other	0.330**	0.307***	0.230	0.255***
	(0.145)	(0.0730)	(0.163)	(0.0718)
religion: non-believer	0.0291	-0.0428*	-0.0252	-0.212***
	(0.0476)	(0.0259)	(0.133)	(0.0352)
religion: does not know	0.0865	-0.116***	-0.142	-0.264***
	(0.0827)	(0.0414)	(0.139)	(0.0513)
job status: unemployed	-0.0566	0.0621	-0.156	0.0287
	(0.0956)	(0.0399)	(0.129)	(0.0433)
job status: inactive	-0.0783	0.147***	0.0524	0.0199
	(0.0841)	(0.0367)	(0.185)	(0.0467)
physical impediment: no	0.0761	0.368***	-0.0429	-0.0496
	(0.180)	(0.0699)	(0.162)	(0.0668)
e30_sup	-0.121	-0.0655	0.324	0.0160
	(0.0870)	(0.0404)	(0.368)	(0.0742)
e40_sup	0.0429	0.239***	-0.0498	0.0705
	(0.116)	(0.0516)	(0.158)	(0.0569)
income level (logarithm)	-0.0203	0.00188	-0.0469	-0.0109
	(0.0243)	(0.0140)	(0.0464)	(0.0176)
Constant	-0.500	-2.295***	0.429	1.708***
	(0.436)	(0.250)	(1.009)	(0.346)
Observations	1,224	7,056	1,224	7,056
R^2	0.478	0.416	0.047	0.075

Standard deviation in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6.1.5. Relationship between the fertility gap and the explanatory variables, from the Fertility Survey (2018)

	Fertility gap	
	Men	Women
ms: married	-0.390*	-0.304***
	(0.202)	(0.0444)
ms: widowed		0.188
		(0.185)
ms: separated or divorced	-0.706***	-0.300***
	(0.173)	(0.0718)
age	0.0340	-0.114***
	(0.0473)	(0.0169)
age^2	-0.000698	0.00106***
	(0.000706)	(0.000235)
use of contraceptives: no	0.107	0.0923***
	(0.0924)	(0.0330)
ed: secondary	0.211*	0.153***
	(0.117)	(0.0515)
ed: higher	0.275*	0.433***
	(0.156)	(0.0634)
residence: non-cohabit w/partner	0.326	0.144***
	(0.230)	(0.0478)
religion: other	-0.1000	-0.0617
	(0.163)	(0.0726)
religion: non-believer	-0.0543	-0.169***
	(0.129)	(0.0344)
religion: does not know	-0.228*	-0.148***
	(0.133)	(0.0484)
job status: unemployed	-0.0997	-0.0335
	(0.130)	(0.0459)
job status: inactive	0.130	-0.127***
	(0.184)	(0.0430)
physical impediment: no	-0.119	-0.418***
	(0.157)	(0.0769)
e30_sup	0.445	0.0815
	(0.364)	(0.0742)
e40_sup	-0.0927	-0.168***
	(0.157)	(0.0530)
income level (logarithm)	-0.0266	-0.0128
	(0.0471)	(0.0194)
Constant	0.929	4.003***
	(0.997)	(0.345)
Observations	1,224	7,056
R^2	0.083	0.201

Standard deviation in parentheses
*** p<0.01, ** p<0.05, * p<0.1

6.2. ANNEX B. COMPLEMENTARY RESULTS

Table 6.2.1. Distribution of the average numbers of actual and desired children and the fertility gap by fertile age (between 18 and 49 years) and educational level of women

Age	Educational level	Actual number of children			Desired number of children			Fertility gap		
		1985	1999	2018	1985	1999	2018	1985	1999	2018
18-29	Primary	1.05	0.67	0.96	2.37	1.70	2.04	1.32	1.22	1.08
	Secondary	0.38	0.18	0.17	2.3	1.74	1.75	1.92	1.64	1.58
	Higher	0.18	0.06	0.06	2.42	1.74	1.8	2.24	1.71	1.74
30-34	Primary	2.08	1.66	1.57	2.58	1.88	2.30	0.5	0.28	0.74
	Secondary	1.53	1.29	0.91	2.42	1.74	1.88	0.89	0.48	0.97
	Higher	0.97	0.73	0.45	2.32	1.87	1.91	1.35	1.30	1.46
35-39	Primary	2.34	1.97	1.64	2.68	2.22	2.19	0.34	0.22	0.55
	Secondary	1.91	1.74	1.32	2.62	2.00	2.01	0.72	0.25	0.69
	Higher	1.46	1.47	1.11	2.88	1.76	1.99	1.42	0.34	0.88
40-44	Primary	2.67	2.29	1.77	2.79	2.41	2.07	0.12	0.13	0.3
	Secondary	2.20	1.97	1.53	2.74	2.02	2.01	0.54	0.11	0.48
	Higher	2.07	1.57	1.47	2.58	1.73	2.08	0.51	0.19	0.61
45 and older	Primary	2.86	2.58	1.63	2.93	2.57	2.05	0.07	0.09	0.42
	Secondary	2.16	2.25	1.58	2.83	2.38	2.08	0.67	0.18	0.51
	Higher	1.98	2.06	1.48	3.17	2.16	2.08	1.19	0.17	0.6

Source: Own elaboration based on the Fertility Survey (1985, 1999, 2018), INE.

Table 6.2.2. Distribution of the average numbers of actual and desired children and the fertility gap by fertile age (between 18 and 49 years), and professional status of women

Age	Work situation	Actual number of children			Desired number of children			Fertility gap		
		1985	1999	2018	1985	1999	2018	1985	1999	2018
18-29	Employed	0.42	0.14	0.17	2.28	1.83	1.84	1.86	1.75	1.67
	Unemployed	0.20	0.22	0.37	2.26	1.60	1.76	2.06	1.48	1.39
	Inactive	0.78	0.27	0.13	2.38	1.68	1.73	1.61	1.53	1.6
30-34	Employed	1.41	0.99	0.64	2.43	1.73	1.88	1.02	0.89	1.24
	Unemployed	1.08	1.03	0.98	2.34	1.71	2.04	1.26	0.79	1.05
	Inactive	2.12	1.60	1.28	2.57	1.90	2.06	0.44	0.25	0.78
35-39	Employed	1.74	1.59	1.17	2.62	1.90	1.97	0.88	0.30	0.8
	Unemployed	1.84	1.71	1.42	2.43	1.91	2.14	0.59	0.32	0.72
	Inactive	2.43	1.96	1.67	2.71	2.18	2.19	0.28	0.18	0.52
40-44	Employed	2.19	1.77	1.49	2.63	1.85	2.02	0.44	0.15	0.53
	Unemployed	3.21	2.04	1.46	2.61	2.01	2.04	-0.6	0.23	0.58
	Inactive	2.72	2.22	1.82	2.85	2.34	2.15	0.13	0.1	0.33
45 and older	Employed	2.26	2.24	1.53	2.85	2.39	2.03	0.58	0.17	0.5
	Unemployed	1.87	2.06	1.51	3.05	2.03	2.07	1.18	0.27	0.56
	Inactive	2.94	2.50	1.68	2.94	2.52	2.26	0.	0.1	0.58

Source: Own elaboration based on the Fertility Survey (1985, 1999, 2018), INE.

Table 6.2.3. Distribution of the numbers of actual and desired children and the fertility gap by gender and fertile age (between 18 and 49 years) in 2018

Age	Children	Men			Women		
		Actual children	Desired children	Fertility gap	Actual children	Desired children	Fertility gap
18-29	0	95.12	30.20	32.11	88.13	22.35	28.17
	1	4.26	7.03	5.96	7.36	8.28	9.17
	2	0.38	48.65	48.40	3.43	45.04	41.75
	3	0.00	10.73	9.84	0.99	20.39	17.47
	4	0.24	1.79	1.78	0.09	2.74	2.11
	5	0.00	0.16	0.00	0.01	0.64	0.65
30-34	0	62.85	17.21	38.90	51.99	10.98	36.95
	1	19.74	17.84	20.21	25.21	16.00	21.18
	2	13.04	47.11	30.77	17.55	48.42	30.54
	3	3.47	13.11	6.28	3.56	20.81	8.55
	4	0.91	4.04	1.45	1.30	2.76	0.58
	5	0.00	0.69	0.69	0.30	0.85	0.26
35-39	0	41.04	11.03	47.40	27.78	7.25	48.87
	1	24.43	18.00	21.29	30.22	17.42	27.16
	2	30.03	48.00	21.99	32.30	47.40	18.12
	3	4.00	19.06	6.22	7.51	23.43	3.69
	4	0.50	1.96	1.19	1.55	3.26	0.56
	5	0.00	1.25	0.19	0.45	0.87	0.11
40-44	0	30.69	9.93	55.28	18.99	7.90	58.73
	1	22.06	14.94	19.12	24.96	15.20	23.61
	2	35.91	53.00	18.95	43.79	49.75	12.19
	3	9.22	16.80	2.46	9.40	21.29	1.44
	4	1.13	3.28	0.75	2.00	4.62	0.36
	5	0.00	0.90	0.66	0.51	0.91	0.19
45 and older	0	20.13	7.92	64.60	18.74	9.15	45.84
	1	24.51	15.17	17.98	23.85	14.48	19.40
	2	47.14	57.88	12.08	44.69	49.05	24.15
	3	3.82	10.51	1.46	9.98	21.15	7.57
	4	4.12	6.48	1.24	1.83	4.26	0.89
	5	0.27	1.43	0.00	0.51	0.97	0.30

Source: Own elaboration based on the Fertility Survey (2018), INE.

Table 6.2.4. Distribution of the average numbers of actual and desired children and the fertility gap by gender, fertile age (between 18 and 49 years), and educational level in 2018

Age	Educational level	Men			Women		
		Children	Children desired	Fertility gap	Children	Children desired	Fertility gap
18-29	Primary	0.36	1.5	1.14	0.96	2.04	1.08
	Secondary	0.05	1.55	1.5	0.17	1.75	1.58
	Higher	0.01	1.86	1.85	0.06	1.8	1.74
30-34	Primary	1.33	2.13	0.8	1.57	2.30	0.74
	Secondary	0.57	1.67	1.1	0.91	1.88	0.97
	Higher	0.4	1.66	1.26	0.45	1.91	1.46
35-39	Primary	1.1	1.89	0.79	1.64	2.19	0.55
	Secondary	1.0	2.0	1.0	1.32	2.01	0.69
	Higher	0.88	1.96	1.08	1.11	1.99	0.88
40-44	Primary	1.17	2.08	0.9	1.77	2.07	0.3
	Secondary	1.35	1.99	0.64	1.53	2.01	0.48
	Higher	1.13	1.93	0.79	1.47	2.08	0.61
45 and older	Primary	1.53	2.02	0.49	1.63	2.05	0.42
	Secondary	1.42	2.06	0.64	1.58	2.08	0.51
	Higher	1.57	2.01	0.44	1.48	2.08	0.6

Source: Own elaboration based on the Fertility Survey (2018), INE.

Table 6.2.5. Distribution of the average numbers of actual and desired children and the fertility gap by gender, fertile age (between 18 and 49 years), and professional status in 2018

Age	Work situation	Men			Women		
		Children	Children desired	Fertility gap	Children	Children desired	Fertility gap
18-29	Employed	0.08	1.66	1.58	0.17	1.84	1.67
	Unemployed	0.15	1.93	1.78	0.37	1.76	1.39
	Inactive	0.00	1.40	1.40	0.13	1.73	1.6
30-34	Employed	0.63	1.76	1.13	0.64	1.88	1.24
	Unemployed	0.42	1.25	0.83	0.98	2.04	1.05
	Inactive	0.47	1.75	1.28	1.28	2.06	0.78
35-39	Employed	1.02	2.05	1.02	1.17	1.97	0.8
	Unemployed	0.84	1.64	0.81	1.42	2.14	0.72
	Inactive	0.39	1.02	0.63	1.67	2.19	0.52
40-44	Employed	1.30	1.96	0.65	1.49	2.02	0.53
	Unemployed	1.18	2.08	0.90	1.46	2.04	0.58
	Inactive	0.68	2.38	1.70	1.82	2.15	0.33
45 and older	Employed	1.54	2.06	0.52	1.53	2.03	0.5
	Unemployed	1.20	1.91	0.71	1.51	2.07	0.56
	Inactive	1.27	1.96	0.69	1.68	2.26	0.58

Source: Own elaboration based on the Fertility Survey (2018), INE.