Simultaneous Estimation of Religiosity and Schooling:

The Case of Spanish Catholics

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Abstract:

Using a sample of Spanish Catholics, we examine the level of religiosity (measured by beliefs, by prayer and by church attendance) and the relationship between religiosity and a series of socioeconomic variables. A simultaneous estimation of equations of religiosity and schooling shows that: women are more religious than men; religious activity increases with age; there is a positive significant relationship between schooling and religiosity; no relationship between number of children at home and religiosity. The results also demonstrate the importance of the "professional opportunistic motive" for male religious behaviour.

Keywords: Religiosity, Prayer, Church Attendance, Education, Spain.

JEL code: Z12, I21

Preliminary-comments welcome.

1. Introduction

In this paper we explore the religious behaviour of a sample of Spanish Catholics, thus adding to the comparative literature of the Economics of Religion; a central concern is the empirical testing of the Azzi and Ehrenberg (1975) model of religiosity.

The great majority of the Spanish population is Catholic. Data published by the Spanish Bureau of Statistics show that some 90% of the population is Catholic, about 1.5% belong to other religious affiliations and around 8.5% claim that they have no religion. These figures are quite stable for the 1990s and early 2000s.

Many of the students in the Spanish educational system study "religion" at school. They choose it as an optional course.[1] This is the case for both the public and private educational systems. In 1999/2000, out of the 3.619 million students enrolled in the Spanish education system (from primary schools to universities), over two thirds (68.6%) studied in public schools, 23.6% were enrolled in private Catholic schools and 7.8% belonged to private non-Catholic schools. In the private Catholic schools, not surprisingly, almost all students (98.03%) chose "religion" as an optional course. However, at the non-Catholic private schools also 84.96% chose to study "religion" and in the public schools the share is somewhat lower but still high – 70.58% (website - official statistics). When 12-16 years old students were asked why they preferred to study religion, over 50% answered that the reason is because they are Catholic. Other answers were: "It helps improve my personality" (7.2%); "My parents studied religion" (9.8%); "It has a cultural impact" (9.9%); "I studied it before and liked it" (14%).

On this background of the Catholic affiliation of the great majority of the Spanish population, the relatively large share of Catholic private schools and the intensive study of

[1] The other option is to study "ethics".

religion in all schools including the public schools, the question arises: If and to what extent are these figures reflected in the level of religiosity and beliefs.

Table 1 presents information on beliefs of the representative sample used for our empirical study (see below). Respondents were asked about the strength of their beliefs in God, afterlife, heaven, hell and miracles. Results are shown separately for men and women. It appears that women exhibit significantly much more belief than men. The great majority of both men and women absolutely believe in God (67.72% of men and 82.89% of women). However around 50% of men either do not believe at all or do not know, when asked about beliefs in afterlife, heaven, hell and miracles. The pattern is significantly different for females: the great majority of women believe in afterlife (55.05% believe 'absolutely' or 'more or less'), heaven (53.58%) and miracles (48.76%). The corresponding figures for men are 41.68% who believe in afterlife, 37.10% in heaven and 33.36% in miracles. The two genders show less belief in hell.

Our finding that women are more religious than men, is in line with established findings in the psychology of religion (Beit Hallahmi, 1997), but its explanation has not been clear.

Some of the likely explanations are:

- Gender differences in personality – economists would refer to this as different tastes for religiosity – women are more spiritual;
- Differences in socialization – female socialization includes the expectation of being active in the religious congregation, engaging in "religious work", supporting and nurturing others and being subordinate to the clergy;
- Women are the main transmitters and guardians of cultural norms and traditions (including religion), in their maternal role;

- Women have lower rates of employment than men and working women have lower wages than men. Their opportunity cost of time is therefore lower, leading to the allocation of more time to religion activities.

We can therefore conclude that the Spanish are highly affiliated with the Catholic church, they study religion but they (mainly men) are not strong believers in the basic Catholic postulates.

An unexpected piece of evidence stems from a comparison between Americans and Spanish. In the US the church is separated from the state and religion is not studied at school. Nevertheless, Americans exhibit stronger religious belief than do the Spanish, and even more belief in God. In a series of polls conducted over a period of more than 50 years (from 1945; see Iannaccone, 1998), about 95% of Americans have professed belief in "the existence of God or a universal spirit" and a large fraction continue to believe in heaven, hell and an afterlife. The corresponding figures for the present Spanish sample are significantly lower. Religious beliefs in the US have proved stable over the decades. Church membership rates have even risen throughout most of the past two centuries and exceed 60% today (Iannaccone, 1998). Here, too, it seems that the Spanish sample attends church services less frequently.

The paper is structured as follows: Section 2 presents a brief review of the economic literature on the Economics of Religion; Section 3 describes the data set including descriptive statistics of our sample; Results are analysed in Section 4 and Section 5 concludes.

2. Background – Economic Analysis of Religion

Adam Smith (1965, first published in 1776) laid the foundations for the economic analysis of religion in the "The Wealth of Nations". He argued that the 'production' of religiosity is not different from the production of any other good, in the sense that market

forces constrain churches just as they constrain firms; that religion benefits from competition just as does the economy; and that priests are motivated by self-interest just as are producers.

Two hundred years later, Azzi and Ehrenberg (1975) were the first to claim that religious behaviour is motivated by rational choice. In a series of papers by Azzi and Ehrenberg (1975), Long and Settle (1977), Ehrenberg (1977) and Ulbrich and Wallace (1983), Becker's allocation of time model has been extended to encompass the question of time allocation to religious activities. Azzi and Ehrenberg formulated and tested empirically an economic theory of "religiosity" in which time devoted to religious activities is looked upon mainly as an investment in an expected stream of consumption benefits in an after-life (the "salvation motive"), though two subsidiary motives are recognized: the "consumption motive" (whereby individuals derive current satisfaction from religious practice either because of their inherent religious beliefs or from purely social reasons) and the "social-pressures motive" (participation in religious activities may enhance probabilities of success in business). The first motive leads to the hypothesis of a positive relationship between age and time devoted to religious activity, as the outcome of individuals concentrating after-life investments in the latter stage of the life-cycle; this keeps investment costs low as they are temporally closer to the period in which expected benefits will accrue. Moreover, time of death is uncertain, but the probability of death is an increasing function of age – individuals will therefore increase the amount of time spent in religious activities, as they age. Not only will people who believe in after-life increase this religiosity with age – but also those who are not sure if an after-life exists might also do so if they are risk averse (Rodero and Brañas, 2000).

The second motive, which relates religiosity with social reasons, later led to club models of religion as an extension of the household production approach, taking into account

association with other members of the church (religion). Examples of such studies are: Sullivan, 1985; Wallis, 1990; Chiswick, 1991 and Iannaccone, 1992.

The third motive is associated with opportunistic behaviour, in the sense that churches are meeting points where people may interact with others, thereby increasing their career opportunities. Church attendance is one of many ways to build social capital (Sacerdote and Glaeser, 2001). This motive should be more dominant for males of working age.

While the two latter motives offer a rational for religious behaviour in public (such as church attendance), they do not explain private acts of religion, such as prayer. Here, only the "salvation motive" is relevant.

The main thrust of the literature has related to the empirical testing of the AE basic model rather than to theoretical extensions (e.g., Neuman, 1986; and Grossbard-Shechtman and Neuman, 1986 – using Israeli data; Sullivan, 1985 – using data for California; Barro and McCeary, 2002 - using an international panel).[2] The present contribution, too, lies in this direction.

A rather different direction of research, which is not the focus of the present paper, deals with religion markets and the production of religious goods. In this group we find papers devoted to problems such as "free-riders" in religious clubs (Iannaccone, 1992); marketing strategies in religious firms (Dolin, Slesnick and Byrd, 1989; Sawkins and Paterson, 1996); monopolistic attitudes (Ekelund et al., 1996; Raskovich, 1996), monopolistic competition (Rodero and Brañas, 2001); profit-maximising behaviour (Iannaccone, 1998), and how to efficiently finance churches (Olds, 1994).

[2] Rodero et al. (2002) is a rare example of theoretical extension.

3. Data

The database used in the present study was collected in 1998 by the Centro de Investigaciones Sociológicas CIS (Center for Sociological Research, Spain) under the *International Social Survey Program: Religion,* supported by UNESCO (CIS code #2301), based on personal interviews. Interviews were carried out in cities or urban cores at the forty-seven Spanish provinces; 2488 interviews were completed. Due to missing values for some of the questions (mainly those related to personal and family income) 1095 valid observations remained – 585 women and 510 men.

Close to 100% of respondents are Catholic and have a Catholic spouse (if married). However they differ in their level of religiosity in terms of praying and participating in mass. Women are more religious than men in these two dimensions of religiosity – mainly prayer. In a range of 1-10 (1 - never prays; 10 - prays once every day), women have an average of 6.6 (standard deviation of 3.2) and men average 4.6 (same standard deviation of 3.2). Men and women are more similar in their participation in mass: in a range of 1-6 (1 – never participates; 6 – participates every week): women have an average of 3.8 and men of 3.1, with a similar dispersion (standard deviation of 1.8). These gender differences can be explained by different tastes for religiosity, differences in socialisation and/or by the female lower cost of time due to lower wages. Women work less, spend more time at home and therefore spend more time mainly in prayer and also on church attendance. The difference is smaller for the latter activity because men value social and career opportunities provided by church attendance.

Sample characteristics are presented in Appendix Table 1, followed by a brief description.

4. Estimation of Religiosity Equations

We have noted that the great majority of Spanish men and women believe in God and a significant proportion participate in prayer and mass. If and to what extent is religious behaviour related to socioeconomic variables such as gender, schooling, age, income and number of children at home?

Religiosity and level of schooling might well be simultaneously determined; we therefore estimate a simultaneous regression model with both religiosity (proxied by the extent of participation is prayer and in mass) and schooling as simultaneously determined variables. For estimation we used STATA procedure of SUREG (Zellner's seemingly unrelated regression). Two versions of the religiosity equations are estimated: a logit equation[3] and an Ordinary Least Squares (OLS) equation, treating level of religiosity as a continuous variable. The OLS option exploits more information on religiosity and results in a better fit (pseudo R squared) and is reported in Table 2. Regressions were estimated for men and women separately and also for the combined sample.

Unlike in most empirical studies on determinants of religiosity (where religiosity is proxied by church attendance) we have data on two different measures of religiosity: (i) frequency of participation in mass (a scale of 1-6) and (ii) frequency of prayer (a scale of 1-10)[4]. The first is a public activity where the social and the opportunistic motives are relevant, while the second is conducted privately at home and can be related only to the salvation motive, suggested by AE. A comparison between the effects of various socioeconomic variables on these two different dimensions might improve our understanding

[3] The dependent variable 'prayer' took on the value 1 if the answer was greater or equal to 6 (in a range of 1-10) and 0 otherwise. The dependent variable 'mass' took on the value of 1 of the answer was greater or equal to 4 (in a range of 1-6) and 0 otherwise.

[4] We also experimented with the sum of these two activities. The results of this regression equation did not add any interesting information.

Only Neuman (1986) used a more informative and detailed measure of religiosity, namely, number of hours per year devoted to a series of religious activities on which information was solicited in the survey.

of religious behaviour. We do not have any data on church contributions or other monetary costs associated with religiosity, and therefore could not examine this dimension or the trade-off between time and money allocated to religious activities.

We now turn to the effects of the various explanatory variables on religious activity, namely the effects of gender, age, schooling and number of children.

Gender: As the equation for the joint sample indicates, men both pray less (by about 20%; a coefficient of 2 for an interval of 1-10) and participate less in mass (by 0.76 in a range of 1-6). Female religious behaviour is also better explained by socioeconomic variables than male – R square of the separate religiosity equation is about 3 times larger for women.

The higher church attendance of woman is found in numerous studies (e.g., Azzi and Ehrenberg, 1975; Ulbrich and Wallace, 1983; Iannaccone, 1998;). It is predicted by standard efficiency conditions implying that within a given household, members with lower wages (typically, wives) will devote more time to religious activities. The difference between men and women is even more pronounced for prayer. In the case of church attendance the social and opportunistic motives that are more important for men than for women, cancel out part of the difference, with the result of a much smaller difference between the genders. An alternative (or additional) explanation for this finding of female higher religious activity might relate to different tastes for religiosity, as indicated in the different pattern of beliefs (Table 1). The different taste for religiosity might stem from differences in personality, socialization and parental roles (Beit Hallahmi, 1997).

Age: Religious activity increases with age, for both religious activities and for the two genders. The age effect arises because resources devoted to afterlife salvation are assumed not to accumulate interest throughout the life cycle, whereas standard investments do; also the older the person is the closer is the period in which expected benefits accrue. The after life effect is partially offset by wage growth, leading AE to predict stronger age effects for women

whose age-earnings profiles are flatter than men's. This is indeed what our regression coefficients show. Also it may be noted that participation in mass is very similar for men and women at the 31-45 age interval, when market opportunities are relevant for men. At the 45-60 age interval participation is almost double for women (1.9 for women, versus 1.0 for men), most probably due to the declining relevance of the opportunistic career motive.

The AE model predicts the possibility of declining religious activity at low ages when wages rise most rapidly, leading to a U-shaped age-religiosity profile. This is found in some empirical studies (e.g., Neuman, 1986). The present data set does not show this pattern for the Spanish sample.[5]

Age-religiosity profiles become steeper as age goes up; this is true mainly for prayer and more so for women. This is due to the increasing significance of the salvation motive and the decreasing significance of the social and opportunistic motives as age advances. Older people might have health problems that prevent them from church attendance and they are no longer career oriented. They therefore substitute prayer for mass attendance.

Number of Years of Schooling: A positive significant relationship is found between religiosity (both prayer and church attendance) and level of education, for both men and women. The effects are somewhat stronger for women. The positive effect remains significant also after personal income (or family income) is added as a regressor.[6] This means that number of years of schooling has a direct significant positive effect and not via its effect on income. These empirical findings are in line with results from many other studies, concluding that education is generally a positive predictor of religiosity (e.g., Ulbrich and Wallace, 1983; Iannaccone, 1998; Barro and McCleary, 2002). Obviously, this empirical finding is in contrast with the

[5] When we control for other explanatory variables, in our regression model. However, when the raw data is used and church attendance is plotted against age, we do find a U-shaped pattern.

[6] In our sample, the effect of personal income and of family income was insignificant. Therefore, we omitted the income variables from our religiosity equations.

"secularization thesis" which claims that individuals become less religious and more sceptical of faith-based as they acquire more education. The secularization hypothesis dates back at least to Weber (1930) and accords with Hume (1993, first published in 1757), who argued that religion derived from irrational human fears and anxieties. He viewed religion as a mechanism for people to ward off forces which they could not rationally explain. It follows that the more that educated people become scientific, the more they are inclined to reject beliefs reflecting superstition and reliance on super-natural forces. The prominent sociologist, Cerhard Lenski (1963), claimed that "… religion in the modern world is merely a survival from man's primitive past, and doomed to disappear in an era of science and enlightenment". The secularisation hypothesis remains controversial (see: Finke and Stark, 1992; Iannaccone and Stark, 1994) and one aspect of the present study is to assess its empirical validity using recent data. Obviously, this hypothesis is not supported by our data. Neither is it supported by US data that shows a stable or even increasing level of religiosity accompanied by increases in the level of education (Iannaccone, 1998). Barro and McCleary (2002) who used an international panel of countries for their empirical study also report a positive relationship between church attendance and education.

This empirical evidence conflicts not only with the secularization hypothesis but also with the economic theory of the negative relationship between the cost of time and the consumption of time intensive goods, such as religious activities. A possible major defect in the available empirical studies is the absence of a measure of time spent by individuals on religious activities – a potential serious lacuna, given that it is precisely this variable that the models set out to explain. The use, instead, of partial proxy measures (usually frequency of church attendance and, in our case, prayer also) raises questions concerning the generality of the results obtained, particularly as such proxy measures represent only one dimension of religiosity. Neuman (1986) used a measure of time that more closely conforms to the

dependent variable specified in the AE theoretical model – time allocated to religious activity. This was measured by summing the number of hours per year devoted by respondents to each of a series of religious activities. Using this measure as the independent variable, she found a *negative* effect of education on time allocated to religious activities was found.

If standard economic theory does not explain the positive relationship between church attendance (and prayer) and education, what might be the explanation for this empirical finding? Sacerdote and Glaeser (2001) argue that education increases the returns from networks and other forms of social capital. Hence, more educated people would increase their participation in group activities, including church activities. Church attendance is one of many ways to build social capital. This explanation is similar to the social motive mentioned in AE. However, Barro and McCleary (2002) offer a different explanation, claiming that both religious belief and scientific work require a considerable degree of abstraction. If more educated people are more capable of the abstraction needed to think scientifically, then they will also be more able or willing to make the abstractions needed to support religious beliefs.

Another reason for the positive relationship between education and religiosity in Spain, against the negative relationship in Israel, might well be the different structure of the educational system in the two countries. In Israel there is a basic conflict of interest between formal secular education and religion. The more religious people tend to avoid formal education. In Spain the formal educational system was originally designed by the Catholic Church.

All private universities and most private high schools are Catholic. These schools are especially renowned for their excellence and entrance is limited to only the best students, often from wealthy families. In addition, these private schools are more successful in incubating the values of Catholicism. Religion is an optional subject even in public schools. Moreover, under Franco's dictatorship (until 1975) the whole educational system, both

private and public, was subject to compulsory Catholic education and many of our respondents were educated at that period of time. This strong relationship between Catholicism and education most probably leads to the observed positive effect of education on religiosity in our Spanish sample.

Number of Children: The number of children at home tends to have a small, marginally significant, negative effect on female mass participation and insignificant effects in all other cases. Women with more children at home are likely to encounter more difficulties in church attendance, and therefore devote less time to religious activity.

Appendix 2 briefly describes the results of the education equations, presented in Appendix Table 2.[7] The positive relationship between education and religious activities is again confirmed. This is true for both prayer and church attendance and for the two genders.

5. Summary and Conclusions

The empirical study of religious activity is an emerging field in Economics. This paper is a first attempt to characterise the religiosity of the Spanish population, thus adding to the growing body of country specific empirical studies. To this end we analyze tastes for religiosity and simultaneously estimate religiosity and education equations.

Economic and sociological theory predict gender differences in religious behaviour and beliefs. We therefore study each gender separately. Data on beliefs in God, afterlife, heaven, hell and miracles for both groups demonstrate the following (Table 1).

- Women exhibit much more belief than men in all Catholic postulates;
- The majority of women and men believe in God absolutely;

[7] The education equations are estimated mainly in order to take care of simultaneity. We therefore only briefly describe the results.

- A significantly larger percentage of men do not believe in afterlife, hell, heaven or miracles;

Overall, in sum, the Spanish are affiliated with the Catholic Church, they study religion (at school) but they (mainly men) are not firm believers in the basic Catholic postulates.

As in numerous other empirical studies we also found that religiosity is affected by socioeconomic variables. A simultaneous estimation of equations of religiosity (proxied by church attendance and by prayer) and schooling leads to the following results:

- Men pray less and participate less in mass compared to women;
- Religious activity increases with age; this increase is steeper as age advances;
- There is a positive significant relationship between religiosity (both prayer and church attendance) and level of education;
- There is no relationship between religiosity and number of children at home;
- Both prayer and churchgoing are positive significant determinants of years of schooling.

In conclusion, age and education seem to be the most important determinants of religiosity in the Spanish case. The salvation motive seems to explain better female religious behaviour, while the professional opportunistic motive seems to be the dominant motive for male religious behaviour. Men view church attendance as another way to build social capital, thus enhancing career opportunities.

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TABLE 1:
Religious Beliefs, by Gender, Spanish Women and Men, 1998

	Women - Do you believe in…				
	God	**Afterlife**	**Heaven**	**Hell**	**Miracles**
Absolutely	**82.89**	**27.99**	25.82	19.13	21.93
More or less	1.40	27.06	**27.76**	19.98	**26.83**
Not too much	6.22	11.51	12.13	17.34	15.16
Not at all	4.74	19.98	22.63	**31.34**	25.97
Don't know/Did not answer	4.75	13.46	11.66	12.21	10.11
	Men - Do you believe in …				
	God	**Afterlife**	**Heaven**	**Hell**	**Miracles**
Absolutely	**67.72**	19.55	18.05	12.56	13.48
More or less	1.91	22.13	19.05	14.23	19.88
Not too much	10.65	12.65	14.89	16.89	14.89
Not at all	12.48	**34.53**	**37.85**	**45.51**	**41.51**
Don't know/Did not answer	2.24	11.14	10.16	10.81	10.24

Notes:

- Sample sizes are:- women and – men
- Numbers in bold refer to the largest percentage

TABLE 2:
Religiosity Functions, by Gender, Spanish Women and Men, 1998

Dependent Variables / Independent Variables					Total	
			Prayer	**Mass**	**Prayer**	**Mass**
Number of Years of Schooling	0.141 (4.87)	0.103 (6.73)	0.136 (4.63)	0.095 (5.76)	0.131 (6.35)	0.093 (8.25)
Age Groups (years)						
31-45	0.647 (1.85)	0.779 (4.17)	1.054 (2.63)	0.723 (3.23)	0.810 (3.06)	0.734 (5.06)
46-60	2.631 (6.55)	1.905 (8.90)	2.026 (4.57)	1.062 (4.29)	2.284 (7.66)	1.461 (8.95)
Over 60 years old	3.913 (8.70)	2.802 (11.70)	3.152 (6.45)	2.055 (7.54)	3.488 (10.56)	2.402 (13.28)
Number of Children at Home	-0.011 (0.12)	-0.082 (1.74)	0.157 (1.49)	0.054 (0.92)	0.062 (0.91)	-0.020 (0.52)
Male	-	-	-	-	-2.120 (11.44)	-0.755 (7.44)
Constant	3.571 (7.22)	1.562 (5.94)	1.428 (2.56)	1.062 (3.42)	3.681 (9.81)	1.767 (8.61)
R^2	0.1225	0.1985	0.0563	0.0762	0.1674	0.1569
Sample size	585	585	510	510	1095	1095

Notes:
- Numbers in parentheses are t-statistics
- For definition of "Prayer" and "Mass" see notes to Table 1
- The reference group for Age is 18-30 years old

APPENDIX TABLE 1:
Sample Characteristics, by Gender, Spanish Women and Men, 1998

Variables	Women	Men
Prayer (1-10)	6.648 (3.19)	4.622 (3.21)
Mass (1-6)	3.752 (1.79)	3.065 (1.82)
Catholic (%)	99.144	99.412
Spouse Catholic (%)	97.654	94.180
Number of Years of Schooling	9.044 (5.43)	9.775 (5.34)
Formal Education (%)		
Less than primary	19.145	14.902
Primary	25.299	25.294
Secondary	24.444	21.765
Academic	31.111	38.039
Age (years)	46.757 (17.80)	47.000 (18.22)
Age Groups (%)		
18-30 years old	23.248	22.549
31-45 years old	27.350	27.647
46-60 years old	22.393	23.725
Over 60 years old	27.009	26.078
Number of Children at Home	1.721 (1.54)	1.682 (1.49)
Monthly Personal Income (in 1000 pesetas) (%)		
Less than 100	70.639	37.323
Between 100-200	22.384	52.333
Between 200-500	6.686	9.736
Over 500	0.291	0.608
Monthly Family Income (in 1000 pesetas) (%)		
Less than 100	30.256	23.725
Between 100-200	46.667	48.824
Between 200-500	20.684	25.490
Over 500	2.398	1.961
Married (%)	64.726	67.059
Sample size	585	510

Notes:

- Numbers in parentheses are standard deviations
- The variable "Prayer" has the following values: (1) never prays; (2) once a year; (3) twice a year; (4) few times a year; (5) once a month; (6) two or three times a month; (7) almost every week; (8) every week; (9) several times a week; (10) once a day
- The variable "Mass" has the following values: (1) never participates; (2) once a year; (3) twice a year; (4) once a month; (5) two or three times a month; (6) every week
- The mean of Monthly Personal Income is based on smaller samples due to missing values (344 women and 493 men).

APPENDIX 1

The respondents are heterogeneous in terms of age and education and reflect the diversity of the Spanish population. As Appendix Table 1 indicates, about one quarter of both men and women are in each age group: 18-30; 31-45; 46-60 and over 60. The average age is 47 and age ranges from 18 to over 90, with a similar distribution for the two genders.

Men are slightly more educated than women. The average number of years of schooling is 9.775 for men and 9.044 for women, with a standard deviation of around 5 years for each of the two groups. The minor differences in education are also reflected in the distribution by level of formal education – 19% of women and 15% of men have less than primary education, while 31% of women compared to 38% of men have at least a partial academic education (including college, polytechnic and university). The percentages of primary school and secondary school graduates are similar for men and women (around one quarter of men and women in each education group).[8]

About two thirds of men and women in the survey are married and the average number of children at home is 1.7 – the number of children ranges from 0 to 12.[9]

As evidenced in many other countries, women earn less than men. Men and women in our sample have a similar age distribution and men are only slightly more educated than women. Yet we find more men than women in the higher monthly income intervals: 9.7% of men and 6.7% of women have monthly incomes between 200 and 500 thousand pesetas. A mere 0.6% of men and 0.3% of women earn more than 500 thousand pesetas. The great majority of women (70.6%) earn less than 100 thousand pesetas compared to 37.3% of men.

[8] Comparative statistics for 15 European countries on the percentage of the population (age 25-59) that has completed at least a secondary school education shows that Spain ranks second from last after Portugal, with a percentage of 37.7%. Germany ranks first with 81.6%.

[9] Lehrer (1996) predicts that spouses of the same religious affiliation will have lower rates of divorce and more children compared to spouses of different religious affiliations who might experience conflicts. This hypothesis is not supported by our data – in our case, while the great majority of couples share the Catholic denomination - they have low fertility rates.

This group includes respondents who do not participate in the labor force. The majority of men (52.3%) have a monthly income ranging between 100 and 200 thousand pesetas. The parallel figure for women is 22.4%.

The distribution of family monthly income is quite similar for men and women in our sample. About half belong to the interval of 100-200, a mere 2% have over 500 thousand and about a quarter belong to each interval of under 100 and 200-500. A comparison of the distribution of personal versus family income for women, shows that they 'move up' when family income is considered. This reflects the fact that a significant share of women either do not work or work part-time.

APPENDIX TABLE 2:
Schooling Functions, by Gender, Spanish Women and Men, 1998

Independent Variables	Women	Men	Total
Prayer	0.262 (4.76)	0.262 (4.34)	0.252 (6.14)
Mass	0.672 (6.64)	0.588 (5.45)	0.595 (8.04)
Age Groups (years)			
31-45	-1.541 (3.32)	-1.197 (2.21)	-1.335 (3.75)
46-60	-5.465 (10.82)	-4.902 (8.58)	-5.135 (13.46)
Over 60 years old	-7.728 (14.55)	-5.577 (9.39)	-6.673 (16.71)
Monthly Family Income (in 1000 pesetas) (%)			
Between 100-200	1.208 (2.91)	1.744 (3.50)	1.497 (4.64)
Between 200-500	3.825 (7.30)	3.566 (6.10)	3.710 (9.44)
Over 500	5.807 (5.18)	10.628 (7.41)	7.888 (8.81)
Constant	9.544 (16.49)	9.541 (15.33)	9.035 (19.96)
R^2	0.4953	0.3467	0.4014
Sample size	585	510	1095

Notes:

- Numbers in parentheses are absolute t-statistics
- "Prayer" and "Mass" were entered separately (as they are highly correlated). The coefficients of all other independent variables were similar (the reported coefficients are for the equation with "Prayer")
- For definition of "Prayer" and "Mass", see notes to Table 1
- Reference group for Age is: 18-30 years old
- Reference group for Monthly Family Income is: less than 100,000 pesetas

APPENDIX 2

We find a negative correlation between age and the number of years of schooling. The older have less education. This negative relationship is more pronounced for women. The relationship is not linear in age. The age-education profile gets steeper as age advances. Compared to the reference group of 18-30, respondents of the age group 31-35 are less educated by about 1.5 years for both men and women. The difference is approximately 5 years for the 46-60 year-olds and jumps to a difference of 5.6 years for men, and 7.7 years for women in the 60+ age group. Cohort effects are responsible for this age-schooling pattern.

Education is also affected by family income. Wealthier families can afford more education in the better and more expensive private schools.[10]

[10] The more relevant explanatory variable would be: family income while the respondent was at school. However, we know that parental family income is positively related to the individual's family income and therefore our variable serves as a proxy to parents' income when the respondent went to school.