

# **XIX MEETING OF THE ECONOMICS OF EDUCATION ASSOCIATION**

## **Does education affect happiness? Evidence for Spain**

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### **ABSTRACT**

In this paper we study the impact of education on happiness in Spain using individual-level data from the European Social Survey (ESS), by means of estimating ordinal logit models. The main results of the paper are the following. First, education has a positive effect on individual happiness. However, once income is included as an additional explanatory variable, the individual education level does not play a significant role in explaining happiness. Therefore, we conclude that education plays an indirect effect on happiness, affecting individual income. Finally, and as expected, we also find significant effect of different socio-economic variables on happiness, such as health, income or unemployment status.

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## **1. Introduction**

There has been in recent years an emerging body of empirical literature on subjective well being. The interest on this subject may be explained by different factors. First, monetary socio-economic indicators (such as per capita GDP) have been found to be insufficient measures of the well-being of citizens (United Nations, 1954; Erikson, 1993). Thus, there is a wide range of studies that uses subjective well-being indicators to measure individual happiness (Clark and Oswald, 1994; DiTella, MacCulloch and Oswald, 2001, 2003; Easterlin, 1974, 1995, 2001; Frey and Stutzer, 2002; Ferrer-i-Carbonell, 2005, 2007). Second, quality of life studies can help to evaluate the welfare effects of different factors such as health, education, unemployment status, environmental variables, contamination, etc. Furthermore, these studies help inferring implications of different policies, such as educative policies or other public policies (Rehdanz and Maddison, 2005; Ferrer-i-Carbonell et al., 2007).

The objective of this paper is the analysis of the impact of education on individual happiness. The relationship between education and happiness has not received much attention so far. Although some empirical studies find a positive effect of education on happiness (Di Tella, Macculloch and Oswald, 2001; Becchetti, Castriota and Londoño, 2006; Albert and Davia, 2005), the empirical evidence on the link between these two variables is not conclusive. The objective of this paper is to analyze the relationship between education and happiness (and life-satisfaction) using data from the European Social Survey for individuals living in the Spanish regions. Since the dependent variable (happiness and/or life-satisfaction) is an index which takes values 1 to 10, the econometric analysis is performed using an Ordered Logit Model.

The subjective well-being literature uses the individual's self-reported satisfaction with life to understand the determinants of happiness and to evaluate the impact of different policies on individual satisfaction. In this paper we study the impact of education on happiness in Spain using individual-level data from the European Social Survey (ESS) ([www.europeansocialsurvey.org](http://www.europeansocialsurvey.org)). The ESS provides rich data on individuals' subjective well-being, political interests, trust, electoral participation, party allegiance, socio-political orientations, environmental attitudes and demographic and socio-economic characteristics

required to control for individual heterogeneity (age, gender, education, employment status, marital status, number of children, income, educational level, etc.).

The outline of the paper is as follows. Section 2 the main literature contributions on the impact of education on happiness through different channels. Section 3 covers the empirical for the Spanish regions and Section 4 offers some conclusions.

## **2. Literature Review**

In this paper we focus in the impact of educational variables on the subjective well-being. Education has a significant impact on economic growth in aggregate level and on human life at an individual level. There are two main channels through education affect subjective well-being. The first direct channel considers the positive effect on self-confidence and self-estimation and pleasure from acquiring knowledge. The second indirect channel takes into account that education promotes higher employment probability, better job quality, higher expected salary and better health.

There are many recent papers that have analyzed the relationship between educational variables and subjective well-being (see, for example, Writter et al., 1984; Ross and Van Willigen, 1997; Hartog and Oosterbeeck, 1998; Michalos, 2007; Hickson and Dockery, 2008 and Stevenson and Wolfers, 2008 among many others). For example, some empirical studies obtain a significant positive effect of education on happiness (see, for example, Di Tella, MacCulloch and Oswald, 2001, Hayo and Seifert, 2003; Layard, 2005; Albert and Davia, 2005; Becchetti, Castriota and Londoño, 2006 and Castriota, 2006 among many others). In addition, education should increase subjective well-being promoting higher job quality with more interesting jobs (Blanchflower and Oswald, 1994 and Albert and Davia, 2005); positive effect on health (see Berger and Leigh, 1989 and Hartog and Oosterbeeck, 1998) and better marriage prospects (see Haveman and Wolfe, 1984 and Hartog and Oosterbeeck, 1998).

However many other empirical studies present some inconclusive results on the connection between educational levels and subjective well-being (see, for example, Veenhoven, 1996; Clark and Oswald, 1996; Inglehart and Klingemann, 2000; Dockery, 2003; Heady and Wooden, 2004 and Hickson and Dockery, 2008 among many others). For

example, the paper by Inglehart and Klingemann (2000) do not find a significant effect of educational proxy variables on life satisfaction while the paper of Clark and Oswald (1996) finds an opposite result reducing level of satisfaction. According to Clark and Oswald (1996) two factors could explain the negative impact of education on happiness. The first one considers that highly educated people have higher job expectations which are more difficult to fulfil and second, the dispersion of incomes increase with education.

As we have explained in the Introduction Section, in this paper we focus in connection between educational level and subjective well-being in the Spanish regions during year 2008.

### 3. Empirical Analysis

As in many studies in the literature, this paper uses individual's responses to the question: "How happy are you". The respondent answers on a scale from 1 to 10, where 1 stands for not happy at all and 10 for completely happy. This happiness measure is explained by means of using the following model

$$u_{i,k} = \alpha + \beta' \mathbf{x}_{i,k} + \gamma' \delta_k + \varepsilon_{i,k} \quad i = 1 \dots I, k = 1, \dots, K \quad (1)$$

where  $u$  is the answer to the happiness question,  $i$  represents the individual,  $k$  the Spanish region,  $x$  is a set of explanatory variables and  $\delta$  is a set of educational variables. Equation (1) is estimated using an Ordered Logit model.

In a first step, we present some descriptive data on happiness and educational levels. As shown in Table 1, the subjective well-being response is higher the higher is the education level. Furthermore, and based on an ANOVA test, we can reject the null hypothesis of no relationship between happiness and educational level.

**(Insert Tables 1 and 2 about here)**

As education may affect happiness via income, in Table 2 we present the relationship between individual responses to happiness and income. As before, we can reject the null hypothesis of no relationship between the two variables, since those individuals with a

higher educational level feel more comfortable with their incomes than less educated individuals.

In a second step, we estimate a happiness equation (1) including those socio-economic variables which we believe may affect subjective well-being and education. The main results presented in column (1) of Table 3 suggest the following:

- First, we find a significant effect of age on happiness. In fact, we find a non-linear effect of age on happiness: the negative effect of “age” and the positive effect of “age\*age” indicates that happiness diminishes with age until individual reaches an inflexion age of around 35-37 in our sample, and after that age, happiness increases with age (controlling for the rest of explanatory factors).
- Second, we do not find a significant effect of the “gender” variable on happiness. In former analysis, we find a low but significant (at a 10 % significance level) effect of this variable. That is, women seem to be happier in average than men (controlling for the rest of explanatory factors).
- Third, one of the most significant variables on happiness is “Subjective general health”. People who feel they have a very good, good or fair health are happier than those with worse health (controlling for the rest of explanatory factors).
- Fourth, “marital status” plays also a significant role on happiness: people who are married or in a civil partnership are happier than singles, while separated and widowed individuals are less happy than single ones (controlling for the rest of explanatory factors). Having children has also a significant effect on happiness.
- Fifth, “education” has a positive and significant effect on subjective well being, after controlling for the rest of variables. It has to be mentioned that in this model we do not include income and other professional variables, such as individual’s main activity.
- Sixth, we also include in order to take into account a broader concept of education, and for each individual, his/her partner’s level of education, his/her mother’s level and his/her father’s level of education. However, none of these three variables were significant at the 10% level.

In a next step, we include as an additional explanatory variable, the individual's main activity, in order to take into account the possible correlation of the level of education with the professional activity. Based on the results presented in column (2) in Table 3, we obtain additional conclusions:

- Seven, the unemployment status has a negative and significant effect on happiness. While there are no significant differences among the variable which controls for professional activities, being unemployed and looking for a job is the unique significant variable in this group of factors.
- Eight, educational level is still a significant variable explaining subjective well-being, even after including this last variable.
- Nine, and in order to promote education, public policies should tend to stimulate primary and secondary level of education, since it seems that post secondary and tertiary level of education has not a significant impact on happiness.

In a next step, we include as an additional explanatory variable the income, in order to take into account the possible correlation of the level of education with this variable. Based on the results presented in column (3) in Table 3, we obtain that the main impact of educational level on happiness is via income.

**(Insert Table 3 about here)**

#### **4. Concluding remarks**

The objective of this paper is to analyze the relationship between education and happiness using data from the European Social Survey for individuals living in Spain. For a sample of 2563 individuals and estimating happiness equations using ordinal logit models, we obtain the following main results. First, the educational level of each individual has a positive and significant effect on happiness. However, the educational level of his/her partner, or mother or father does not play a role in his/her subjective well-being. Second, the impact of education on happiness is not direct, but indirect via income. That is, education affect happiness since the level of education affects the household's income. Finally, and as expected, we find several individual explanatory variables with a significant effect on happiness, such as age, health, income, marital status or unemployment status.

We believe that the results obtained in this paper may help designing public policies in order to affect individual happiness. For example, it seems that policies directed to stimulate the education may have positive effects on individual happiness.

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**TABLE 1. Happiness and education, Spain 2008**

How happy are you					
	n	Mean	Std. Deviation	Minimum	Maximum
Not completed primary education	355	6.91	1.89	0	10
Primary education	529	7.36	1.67	0	10
Lower secondary	745	7.84	1.65	2	10
Upper secondary	526	7.80	1.41	2	10
Post secondary	6	7.50	1.76	5	10
First stage of tertiary	387	8	1.29	2	10
Second stage of tertiary	15	8.6	1.18	7	10
total	2563	7.63	1.63	0	10
ANOVA F test for equal means= 22.26 (0.00)***					

**TABLE 2. Income and education**

Education	How do you feel about household's income			
	Comfortable	Quite comfortable	Difficult	Very difficult
Not completed primary education	45	186	95	28
Primary education	71	304	125	26
Lower secondary	170	415	122	28
Upper secondary	160	279	69	16
Post secondary	2	3	1	0
First stage of tertiary	212	146	25	3
Second stage of tertiary	14	1	0	0
Chi-square test of independence=49.1 (0.00)***				

**TABLE 3. Ordinal Logit estimation. Happiness and socio-economic variables**

		Model 1	Model 2	
Age		-0.087*** (46.70)	-0.076*** (27.95)	-0.076*** (27.25)
Age2		0.001*** (46.58)	0.001*** (23.73)	0.001*** (20.26)
Gender	Male	-0.098 (1.773)	-0.116 (2.08)	-0.137* (2.86)
	Female			
Health	Very good	2.96*** (58.58)	2.87*** (53.60)	2.59*** (43.69)
	Good	2.063*** (29.83)	1.98*** (26.68)	1.76*** (21.11)
	Fair	1.579*** (17.55)	1.51*** (15.67)	1.34*** (12.25)
	Bad		0.892** (5.43)	0.789** (4.22)
	Very bad	0.956** (6.29)		
Income	Comfortable			1.50*** (52.69)
	Quite comfortable			1.06*** (29.40)
	Difficult			0.36* (3.12)
	Very difficult			
Marital Status	Married	0.721*** (32.0)	0.724*** (31.56)	0.681*** (27.61)
	Civil paternity	0.404* (3.20)		0.554** (5.79)
	Separated	-0.706** (4.89)	0.492** (4.60)	-0.61* (3.56)
	Divorced	-0.216 (0.15)	-0.66* (4.24)	-0.13 (0.06)
	Widowed	-0.591*** (7.50)	-0.16 (0.09)	-0.18** (1.08)
	Never married, never civil paternity		-0.55** (1.32)	
Main activity	Paid work		-0.06 (0.18)	-0.06 (0.18)
	Education		0.162 (0.54)	0.07 (0.09)
	Unemployed, looking		-1.05*** (23.91)	-0.74*** (11.31)
	Unemployed, not looking		0.029 (0.01)	0.258 (0.77)
	Sick, disabled		-0.093 (0.10)	0.009 (0.01)
	Retired		0.21 (2.03)	0.248* (2.79)
	Housework, children			
Children	Yes	0.159* (3.01)	0.169* (3.35)	0.222** (5.73)
	No			
Education	Not completed primary	-1.34*** (7.54)	-1.28*** (6.81)	-0.69 (1.93)
	Primary	-1.03** (4.69)	-0.99** (4.28)	-0.48 (0.99)
	Lower secondary	-0.80* (2.84)	-0.76 (2.54)	-0.40 (0.71)
	Upper secondary	-0.82* (2.96)	-0.80* (2.80)	-0.51 (1.13)
	Post secondary	-0.83 (0.90)	-0.85 (0.96)	-0.66 (0.57)
	First stage tertiary	-0.57 (1.44)	-0.55 (1.32)	-0.42 (0.76)
	Second stage tertiary			
Regions	Yes		Yes	Yes
Pseudo-R <sup>2</sup>		0.218	0.228	0.259

Regional dummy variables are included in order to control for geographical and environmental regional factors on individual happiness. \*, \*\* and \*\*\* indicate significant at 10, 5 and 1% level. In parenthesis, we present the Wald test for testing the null hypothesis of non significance.

### Appendix. Description of the variables used

Variable name	Source	Description
Happiness	ESS	How happy are you, from 1 (not happy at all) to 10 (absolutely happy)
Satisfied with your life	ESS	How satisfied with life as a whole, from 1 (not satisfied at all) to 10 (absolutely satisfied)
Gender	ESS	Dummy variable which takes value 1 if the respondent is male, 0 otherwise
Age	ESS	Age of the respondent in years
Income	ESS	Subjective feeling about household's income nowadays: 1 (living comfortably on present income), 2 (coping on present income), 3 (difficult on present income), 4 (very difficult on present income)
Subjective general health	ESS	Discrete variable which takes the following values: 1 (Very good), 2 (good), 3 (fair), 4 (bad), 5 (very bad)
Marital Status	ESS	Discrete variable which takes the following values: 1 (married); 2 (in a civil paternship); 3 (separated); 4 (divorced); 5 (widowed); 6 (never married, never in a civil paternship)
Main activity	ESS	Discrete variable which takes the following values: 1 (paid work); 2 (education); 3 (unemployed looking for a job); 4 (unemployed, not looking for a job); 5 (permanently sick or disabled); 6 (retired); 7 (housework and children)
Education	ESS	Discrete variable which takes the following values: 1 (not completed primary education); 2 (primary or first stage of basic); 3 (lower secondary or second stage of basic); 4 (upper secondary); 5 (post secondary, non tertiary); 6 (first stage of tertiary); 7 (second stage of tertiary)
Regions	ESS	Spanish region where the individual lives