Education and Happiness: An Alternative Hypothesis

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Abstract

Recent research has documented a negative relationship between education and happiness. We test the hypothesis that the extent to which education makes an individual happy depends on their current age in life. We find suggestive evidence that people with higher education are more likely to be happier, on average, than their less educated counterparts starting in their early to mid-30s.

1. Introduction

Education is widely acknowledged by economists as one of the most important investments in human capital that helps individuals acquire knowledge, cognitive skills, and intellectual disposition that allow them to participate actively and more productively in social and economic life. Hundreds of academic studies show that more educated people have better job opportunities, greater labor force flexibility, are less likely to be affected by unemployment trends, live longer and healthier lives, and ultimately receive higher salaries and lifetime earnings (Oreopoulos & Salvanes, 2011).

Yet, a growing body of literature has documented a negative or insignificant correlation between education and subjective well-being (SWB) (Clark & Oswald, 1996; Green, 2011; Powdthavee, 2010; Shields, Price, & Wooden, 2009). One possible explanation for these puzzling results is that education makes people more ambitious, which might reduce happiness since higher expectations are more difficult to fulfill (Clark & Oswald, 1996). Another possible story is that most studies estimate reduced form happiness regressions that often control for variables such as income, health, and marital status and thus close these channels through which education may contribute positively to higher levels of SWB (Powdthavee, Lekfuangfu, & Wooden, 2015).

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In this paper, we offer an alternative explanation for the happiness-education puzzle. Namely, the effect of education on happiness depends on one's current age in life. As Nozick (1989) points out, people do not care about the total amount of happiness alone. They also care about how happiness is distributed within one's lifetime. In other words, people care about their life narratives. For many people, a life narrative of increasing happiness over time is preferable to one of decreasing happiness even if the total amount of happiness at the end is greater in the latter case. Higher education promises an upward trajectory in life but also involves a sacrifice of happiness in the short-run. Obtaining a degree means studying for exams, dealing with failure, constant pressure of deadlines, and is associated with high psychological costs (Heckman, Lochner, & Todd, 2006). Even after finishing college, individuals may face high student loan debt repayments and deal with uncertainty for years until they get established in their careers. If this was the case, we would expect the SWB return from education to grow slowly over time causing the negative happiness differential between people with higher degrees and their less educated counterparts to first narrow and then to become positive.

2. Data

Data for the analysis were extracted from the Household Income and Labour Dynamics in Australia (HILDA) survey, waves 1-13.[2] The dataset is a large nationally representative panel that collects annually a wide range of information on respondent's socio-demographic characteristics, subjective well-being, labor market participation, and family circumstances. Our final sample consists of 26,145 individuals, ages 15 and up, and 158,245 individual-year observations for the period 2001-2013. Many of the previous studies that document a negative relationship between education and happiness are based on the HILDA dataset, which makes it ideal for testing the hypothesis in this paper (Powdthavee et al., 2015).

The dependent variable, life satisfaction, is collected with the following question: "*All things considered, how satisfied are you with your life?*" The scale of possible answers is presented using a visual aid in which the extreme points of the scale were labeled 0 "*totally dissatisfied*" and 10 "*totally satisfied*". Thus, our SWB measure is a reflective assessment involving evaluative judgment of one's life as a whole (on the meta level) and requires an effort to remember and evaluate past experiences.

Our measure of education reflects the number of years an individual spends obtaining their highest degree. A respondent who has completed secondary school, for example, is assumed to have completed 12 years of education while somebody with a college degree is assumed to have completed 16 years of education. While we are not measuring the actual number of years spent obtaining a degree (which can vary with the number of degrees or time spent studying that did not lead to a degree), this approach is common in the economics of education literature (Card 1999).

3. Model and Empirical Estimation

We estimate the determinants of subjective well-being, SWB, using the following model:

$$SWB_{it} = \beta EDU_{it} + \phi(EDU \textrm{x} AGE)_{it} + \gamma(EDU \textrm{x} AGE^2)_{it} + \sum_k \delta_k x_{k,it} + \varepsilon_{it}$$

(1)

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where i = individual, t=year, and x = k explanatory variables (including age, age squared, marital status, exercise habits, employment situation, self-rated health, and logarithmic transformation of personal income), EDU = years of education, and ε_{it} is a composite term, $\varepsilon_{it} = \alpha_i + \epsilon_{it}$, that captures unobservable individual specific (time invariant) characteristics, α_i, and an idiosyncratic error, ϵ_{it}. To test our hypothesis, we include interactive terms between education and age and its quadratic term. All regressions include year and region dummies. The panel nature of the data further allows me to use *within*-individual variation and thus remove the individual specific effect, α_i, that captures time-invariant unobservable characteristics such as ability, motivation, or family upbringing that are likely correlated with both SWB and other explanatory variables such as income and health. Even though the dependent variable, life satisfaction, is a categorical variable and requires an ordered logit or probit model, we report the results from a linear fixed-effects model as it is common in the literature. This allows for easier interpretation of the results and previous research finds that it makes little difference in the context of estimating happiness equations (Ferrer-i-Carbonell & Frijters, 2004). The results, however, are robust to using conditional logit estimation and OLS (results available upon request).

TABLE 1: MAIN RESULTS, HILDA 2001-2013

| Variables	(1)		(2)		(3)	
EDU	-0.035***	(0.006)	-0.154***	(0.017)	-0.141***	(0.017)
AGE	-0.029***	(0.003)	-0.072***	(0.010)	-0.076***	(0.010)
AGE^2	0.260***	(0.027)	0.000**	(0.000)	0.000***	(0.000)
EDU x AGE			0.005***	(0.001)	0.004***	(0.001)
EDU x AGE^2			-0.000	(0.000)	-0.000	(0.000)
Marital Status (Base = Married)						
Single	-0.242***	(0.017)			-0.248***	(0.017)
Widowed	-0.525***	(0.032)			-0.505***	(0.032)
Divorced	-0.392***	(0.025)			-0.394***	(0.025)
Separated	-0.665***	(0.025)			-0.665***	(0.025)
Frequency of Exercise (Base==Never)						
Less than weekly	0.063***	(0.012)			0.064***	(0.012)
At least weekly	0.126***	(0.011)			0.124***	(0.011)
Employment Status (Base = Employed)						
Unemployed	0.014	(0.015)			0.016	(0.015)
Health (Base=Poor)						
Fair	0.694***	(0.021)			0.692***	(0.021)
Good	1.061***	(0.023)			1.057***	(0.023)
Very Good	1.321***	(0.023)			1.317***	(0.023)
Excellent	1.535***	(0.026)			1.532***	(0.026)
Log of Income	-0.002	(0.002)			-0.001	(0.002)
Constant	7.914***	(0.090)	10.493***	(0.205)	9.225***	(0.205)
Region	YES		YES		YES	
Year Dummies	YES		YES		YES	
Observations	158,245		158,245		158,245	
Number of Individuals	26,145		26,145		26,145	
R-squared	0.11		0.047		0.0686	

All models are estimated using a fixed effects model with robust standard errors reported in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The estimated association between education and life satisfaction is reported in Table 1. Model (1) does not include any interaction terms and suggests that higher education is associated with lower level of SWB. Furthermore, the estimates from model (1) imply that SWB is a quadratic function of age. Both of these results are consistent

with previous studies using the HILDA dataset (Powdthavee et al., 2015). In model (2) and (3), we add the interactive terms with age and its quadratic. Both of these specifications suggest that the association between education and happiness is conditional on one's age. Specifically, the coefficient on the interactive term between education and happiness is positive and statistically significant at the 1% level suggesting that as age goes up, the overall effect of education on happiness increases too. If causal, the estimated coefficients in model (2), for example, would imply that more educated people, on average, become happier than their less educated counterparts in their early 30s, *ceteris paribus*. Since this model does not control for variables such as income and health that can also affect happiness, one should think of this association as capturing both the direct and indirect effects of education trough these channels. Model (3) adds controls for marital status, health, frequency of exercise, employment status, and the log of personal income. The results remain unchanged and suggest that higher level of education is associated with greater level of happiness beyond the age of 35.

FIGURE 1: PREDICTED LIFE SATISFACTION AT SAMPLE MEANS
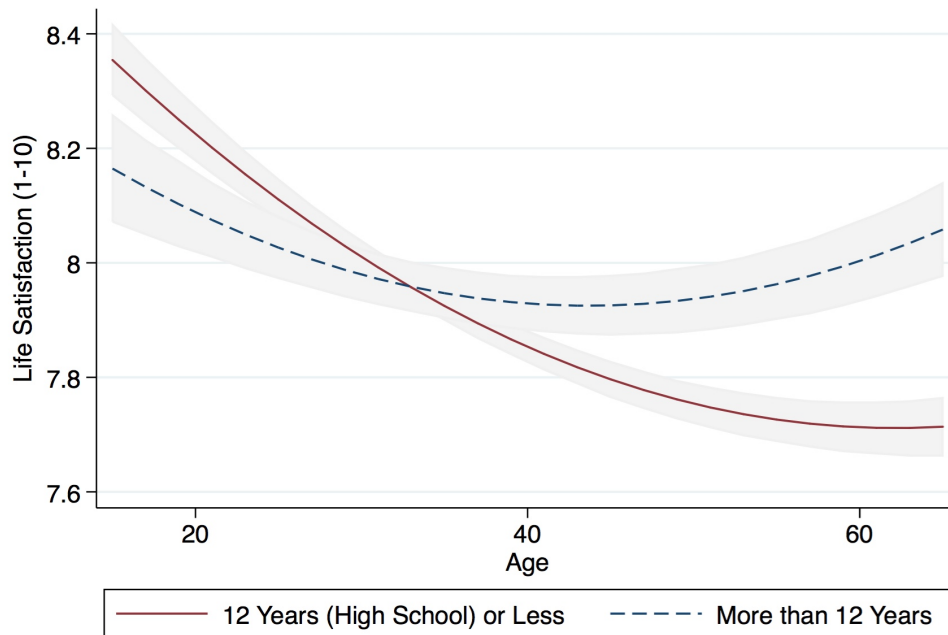
To help visualize the relationship, we next create a dummy variable equal to one if a person has more than 12 years (high school) of education. We rerun model (3) from Table 1 interacting the new variable with age. The results are summarized in Figure 1, which shows predicted life satisfaction (with 95% confidence intervals) at different levels of age, holding all other variables from the model at their sample mean. The figure

implies, for example, that a typical person in their 40s who have more than high school education will be happier than a person with similar socio-economic background who has only a high school or lower education. This happiness gap increases with age, largely because the happiness trajectory of someone with a high school (or lower) education is predicted to be downward over the course of his or her life.

Overall, the results suggest that more educated people, on average, are happier than their less educated counterparts starting in their early to mid-30s. Beyond this age, the happiness differential starts growing in favor of the more educated. It is possible, of course, that this gap captures unobservable characteristics such as one's relative status in society that education may proxy. There are also concerns about endogeneity that remain largely unexplored in the education-happiness literature. The current paper, however, suggests a possible explanation for an otherwise surprising result in the happiness literature and argues that education does pay off in terms of happiness.

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