Life satisfaction and education in South Africa: Investigating the role of attainment and the likelihood of education as a positional good

Ferdi Botha

ERSA working paper 349

May 2013

Life satisfaction and education in South Africa: Investigating the role of attainment and the likelihood of education as a positional good

Ferdi Botha*

May 21, 2013

Abstract

This paper explores various dynamics in the relationship between life satisfaction and education in South Africa using the 2008 National Income Dynamics Survey. The results indicate a strong positive association between educational attainment and individual satisfaction with life, which is true in the overall sample and for men and women. This positive relationship also holds for Black and Coloured individuals, but is insignificant in the Asian and White samples. Evidence indicates that education is a positional good, in that people who have attained more than the mean level of education in their relevant cluster are significantly more satisfied with life compared to those possessing less than the mean education.

Keywords: subjective well-being, positional concerns, education, South Africa

JEL classification: I2; Z13

1 Introduction

The expansion in the subjective well-being literature over the past three decades has uncovered numerous factors associated with self-reported levels of well-being. As one of the determinants of individual well-being, the influence of education has produced some interesting results. While most studies report a positive relationship between education and subjective well-being, insignificant and even negative associations have also been reported. In general, therefore, the evidence regarding the relationship between life satisfaction and educational attainment is relatively ambiguous (Ferrante, 2009; Cuñado and de Gracia, 2012). With respect to existing South African studies especially, the relationship between education and well-being is unclear.

This paper is the first to directly address the association between education and life satisfaction in South Africa, with additional emphasis on the elements of education as it relates to individual well-being. Although earlier studies using South African data included educational measures in their analyses, education served as a control covariate and was hence not the principal focus of these studies. Recent research (Salinas-Jiménez et al., 2011) has also examined the possibility of education as a positional good, where subjective well-being is compared between individuals within similar relative income groups where the levels of education attained may differ. Such an analysis has not previously been conducted for South Africa and is hence another contribution of this paper.

The primary aim of this paper is to assess the relationship between self-reported satisfaction with life and education in South Africa. Furthermore, this paper goes further by examining whether education and life satisfaction are related for men and women, as well as for different racial groups. Distinct socio-economic differences between gender and racial groups are likely to influence the importance of education for each group in facilitating higher levels of well-being. Constructing a measure of relative education, this paper also tests whether education serves as a positional good with respect to its relationship with life satisfaction.

The remainder of this paper is structured as follows: Section 2 presents an overview of the relevant theoretical and empirical literature. Section 3 discusses the findings from previous South African research as well as the local context with respect to educational endowments among individuals of various groups. Section 4 states the hypotheses examined in this paper. Section 5 discusses the data and econometric methods employed, while Section 6 contains the empirical results. Section 7 concludes.

2　The literature

Theoretically, there are two stands of literature regarding the influence education may exhibit on individual subjective well-being. The one strand posits in general that education increases satisfaction with life due to several favourable economic and psychological factors resulting from the attainment of higher education. The second strand argues that education, especially after a certain threshold level, may decrease life satisfaction since those with more education generally set higher goals and may tend to work harder; failure to reach specified personal goals and low job satisfaction negatively affect individual well-being

Cuñado and de Gracia (2012) state two channels (direct and indirect) through which education affects individual well-being. The direct channel refers to the increased self-confidence and self-estimation gained from higher levels of education, while the indirect channel suggests that education facilitates better probability of employment, income, job quality and health. Thus, higher education should facilitate higher levels of life satisfaction when based on these premises. In addition, Castriota (2006) lists several explanations for why education should lead to an improvement in individual life satisfaction For instance, individuals

require some level of education to live in public without the risk of shame; education serves as a signal of competence while prestige provides indirect individual utility; education facilitates labour market factors such as higher probabilities of employment, job quality; higher earnings; education should improve individual health status, as educated people are more likely to have healthier habits (Checchi, 2006). In addition, the productivity and social status facilitated by higher education should raise individual well-being (Witter et al., 1984; Mahadea and Rawat, 2008).

Michalos (2008) argues that education is beneficial to individual well-being through assisting with the appreciation of various substantive and intangible personal benefits. According to Chen (2012), education enables individuals to establish and pursue their own duties and therefore people are more likely to live a happy and fulfilling life. Chen (2012) views the role of education as fostering meaningful social connections and interactions with individuals such as friends and relatives, as well as with the world in general. These connections in turn are likely to foster uplifting emotions, thereby enhancing a person's general level of well-being.

In contrast to the theoretical propositions for why education should increase individual well-being, other theories contend that, in general, the attainment of higher education may trigger processes that are detrimental to individual well-being. Clark and Oswald (1994, 1996) argue that since higher educated individuals earn higher incomes, the probability of greater mental distress associated with the cost of possibly being unemployed in future is more likely among these individuals. Higher educated individuals, moreover, possess greater job expectations and personal aspirations that, if not met, may lead to a decline in well-being (Salinas-Jiménez et al. 2011). Finally, since the distribution of individuals' incomes rises with education, people who compared themselves to others with similar educational attainment but higher income are likely to experience a decline in satisfaction (Clark and Oswald, 1994, 1996; Peiró, 2006).

Ferrante (2009) provides an interesting explanation for the negative relationship between life satisfaction and education, namely that of regret. Individual choices regarding education, and in particular whether to attain higher levels of education, are some of the main sources of regret. According to Ferrante (2009), education could cause regret and hence a decline in life satisfaction if, in light of the fact that education increases an individual's aspirations and opportunities in general, aspirations exceed opportunities As such, Ferrante (2009) argues that individuals may experience aspirations bias, which would negatively affect life satisfaction if we contend that individual aspirations reflect prediction errors and people fail to anticipate changes in their aspirations.

Salinas-Jiménez et al (2011) recently investigated education as a positional good, based on the assumption that education facilitates greater life satisfaction by means of positional concerns. The authors use data from the 2005-2006 World Values Survey (WVS) for 11 OECD countries, and evaluate people in the same perceived level of relative income with different educational attainments. Salinas-Jiménez et al. (2011) find that people display positional concerns with respect to education: The impact of educational attainment on life satisfaction

is different across perceived income groups. Furthermore, while the association between education and life satisfaction is largely insignificant in the higher income groups, education remains an important predictor of life satisfaction for people within lower perceived income groups. The results are interpreted by Salinas-Jiménez et al. (2011) as evidence of education being a positional good.

In general, relative income is strongly positively associated with life satisfaction (Luttmer, 2005; Clark et al., 2008) and this relationship has also been confirmed in South Africa (Posel and Casale, 2011), thus presenting a strong case in favour of relative income being a positional gain. However, as Salinas-Jiménez et al. (2011) rightly note, the prospect of education as a positional good has not been investigated in the literature on subjective well-being and, as previously stated, Salinas-Jiménez et al.'s (2011) study is in fact the first to directly consider this question

In spite of the continually increasing body of literature on subjective well-being, its relationship with education has received surprisingly little direct attention. Nevertheless, the majority of existing findings indicate a positive association between well-being and education. However, education often has no significant effect on well-being while studies are also increasingly reporting negative associations, especially in developed countries.

Oswald (1997) reported a positive association between education and well-being using the Eurobarometer Survey conducted among European countries. For Germany and Switzerland, Frey and Stutzer (2000) found higher educated individuals to be more satisfied than those with less education, whereas Borooah (2006) reported the same results for Northern Ireland. Using data from the WVS, comprising 94 countries, Stanca (2009) found education to have a positive association with subjective well-being. Similar findings are reported by Hartog and Oosterbeek (1998) for the Netherlands and Gerdtham and Johannesson (2001) for Swedish data. Dittmann and Goebel (2010) analyse data from the German Socio-Economic Panel over the years 2000-2006 and find that an extra year of education significantly increases life satisfaction. However, the significance of education disappears when controlling for individual fixed effects.

Using data from the 1991 British Household Panel Survey (BHPS), Clark and Oswald (1994) found that those with higher levels of education are less satisfied compared to people with lower levels of education, which they attribute to both greater mental distress and personal aspirations possibly not met. Theodossiou (1998) when employing the 1992 BHPS also confirmed the negative effect of education on well-being.

Education has also been found to have no significant impact on subjective well-being, which is attributed to the failure of higher expectations to be affected by current income, and if one controls for variables such as income (through which education influences well-being), the effect of education diminishes (Powdthavee 2003; Peiró 2006). Helliwell (2003) employed data on 46 countries from the WVS and found no significant relationship between subjective well-being and education, which is explained by the fact that the effects of education per se are already taken into account in other variables such as health and higher incomes through which the benefits of higher education flow.

4

Also using the WVS, Stack and Eshleman (1998) and Peiró (2006) found an insignificant relationship between well-being and education in 17 and 15 countries, respectively.

Chen (2012) employs the 2008 East Asian Social Survey to investigate the relationship between education and individual well-being in Japan, Taiwan, Korea and China. Using OLS and controlling for individual characteristics such as age, gender, and marital status, education was found to be positively related to well-being levels in all four countries. With the inclusion of income, the coefficient on education declined only slightly in the case of Japan, Taiwan and Korea. For China, however, the education coefficient declined substantially when controlling for income, suggesting that higher income is an important component in explaining the relationship between well-being and education. Cuñado and de Gracia (2012) investigate the association between education and well-being in Spain using data from the 2008 European Social Survey. Estimating ordered logit models, the authors find a significant positive relationship between well-being and education. However, when controlling for income, this significant association disappears, suggesting that the effect of education on well-being is indirect through income.

3   South African research and context

South African studies to date have reported mixed results, with findings ranging from well-being being positively, negatively, and insignificantly related to education. Powdthavee (2003) employed data from the 1993 South African Labour Research Unit Survey and found a higher level of education to be associated with a lower level of subjective well-being. When using the 1997 South African October Household Survey in a later study, Powdthavee (2005) found a positive association between well-being and education. Hinks and Gruen (2007) reported a positive but weak relationship between well-being and educational attainment in South Africa using pooled data for 1999-2004 from the Quality of Life/Needs Assessment Survey for the city of Durban. Posel and Casale (2011) investigate the role of relative standing in South Africa in explaining subjective well-being. Using data from the 2008 National Income Dynamics Survey, the authors include years of education as a control in their analysis and report a weak yet positive relationship between education and life satisfaction in South Africa. This weak relationship is ascribed to other control variables capturing most of the effects of higher education.

The distribution of educational attainment across South African sex and racial groups is immensely unequal. These differences, especially with respect to race, mainly reflect the consequences of apartheid policies that restricted access to education for certain racial groups. On average, women still possess lower levels of education relative to men (Statistics South Africa, 2012). Roughly 19% of Black individuals have at most primary-level education, compared to 0.5% and 4.2% of Whites and Asians, respectively. In addition, 84.6% and 73.7% of Whites and Asians, respectively, have completed secondary-level education or

higher, while only 40% of Blacks and 42% of Coloured persons have completed this level (Statistics South Africa, 2011).[1]

Apart from educational attainment differences, income disparities are also present. Monthly income is higher for men than for women. Furthermore, on average White individuals earn the greatest amount per month, followed by Asian and Coloured persons, with Black individuals earning on average the lowest levels of income (Statistics South Africa, 2006). These statistics point to significant differences in educational attainment, income and status across sex and racial groups. Educational attainment, social status and income are lower among women. Also, Black and Coloured persons possess the lowest levels of education on average, earn the lowest levels of income, and possess the lowest social ranking. It is therefore conceivable that education would be of greatest intrinsic value to women as well as for Black and Coloured people.

4   Hypotheses

Based on the theoretical and empirical discussion and in light of the South African context, this paper postulates the following hypotheses:

Hypothesis 1: Education is positively related to life satisfaction in all samples.

Hypothesis 2: The importance of education in enhancing individual life satisfaction is greater for women than for men.

Hypothesis 3: The life satisfaction benefits from higher levels of education are greatest for Black and Coloured individuals.

Hypothesis 4: People care about positional status and view education as a means of differentiating themselves from others.

5   The data and method

The data originate from the adult questionnaire of the 2008 National Income Dynamics Survey (NIDS) (NIDS, 2008). This survey is ideally suited for the analysis of subjective well-being and a wide range of variables on the South African population and has been employed in previous South African subjective well-being studies (Posel and Casale, 2011; Botha and Booysen, 2013; Ebrahim et al., 2013). The question measuring life satisfaction in NIDS asks, "Using a scale of 1 to 10 where 1 means 'very dissatisfied' and 10 means 'very satisfied', how do you feel about your life as a whole right now?"

Descriptive analyses are conducted by basic summary statistics and bivariate cross-tabulations. Consistent with previous research (Clark and Oswald, 1994; Gerdtham and Johannesson, 2001; Powdthavee, 2003; Posel and Casale, 2011; Botha and Booysen, 2013; Ebrahim et al., 2013), life satisfaction is assumed to be ordinal in nature. For the regression analyses, therefore, this study estimates ordered probit regressions with heteroscedasticity-robust standard errors,

---

[1] "Coloured" is the term used by South Africans to describe people of mixed race.

where reported life satisfaction is the dependent variable in all regressions. As a measure of educational attainment, two variables are employed. The first is a categorical variable consisting of four categories, namely "none" (base group), "primary", "secondary", and "post-secondary". The absolute number of years of completed education is also included. Consistent with the subjective well-being literature, the control variables included are age, age squared, gender, racial group, health status, absolute income, perceived relative income, religion, employment status, social trust, and marital status.

Age denotes the age of the respondent in years, while gender is a dummy variable taking on a value of 0 if the respondent is male and 1 otherwise. Race consists of four groups, namely Black, Asian, Coloured (mixed race) and White, while health denotes subjective assessment of current health and consists of five categories, which include "poor", "fair", "good", "very good", and "excellent". Absolute income is the natural logarithm of individual monthly income, and relative income denotes a subjective assessment of individuals' income relative to households in their neighbourhood, and consists of "much below average income", "below average income", "average income", "above average income", and "much above average income". Religion refers to the importance of religious activities to the respondent, which is made up of "not at all important", "unimportant", "important", and "very important", while employment status consists of "employed", "not economically active", and "unemployed". Social trust is used as proxy for social capital and is measured by a question asking respondents what they believe the likelihood would be for a neighbour to return their lost wallet containing R200, with responses consisting of "not likely", "somewhat likely", and very likely". Finally, marital status is a categorical variable containing five categories, namely "single", "widowed", "divorced/separated", "married" and "cohabiting". Table 1 presents the summary statistics. Of primary interest here is the overall mean life satisfaction score of 5.43, showing that reported life satisfaction of the average South African lies roughly in the middle of the 10-point scale. In addition, average completed education is 7.59 years, indicating that the average South African possesses little more than primary-level education.

To determine whether education is positional, individuals are first grouped into categories of similar perceived relative income. Since the relative income variable consists of five categories, for comparison two categories were constructed: individuals with a perceived relative income "much below average income" and "below average income" were collapsed into "low income" persons, while the remaining were categorised into "high income" individuals.[2] Next, we constructed a measure of relative education, by calculating the difference between an individual's education and the mean level of education within their relative income cluster. We subsequently include a relative education dummy in distinct regression specifications, where this dummy equals 1 if a person's

---

[2]Since the choice of which categories to create is somewhat arbitrary, it was also experimented to code those with "average income" as "middle income". However, such coding would make it impossible to estimate all regressions given the small sample size of individuals with middle income in some regressions, especially when disaggregated by sex and racial group.

own level of education is higher than the mean educational attainment in the relevant cluster, and zero otherwise.

Ordered probit regressions are estimated for the sample as a whole and, to determine the different associations of education with life satisfaction among gender and racial groups, regressions are estimated for each gender and racial group separately. We also estimate ordered probits to determine the relationship between life satisfaction and relative education.

6   Empirical results

6.1   Education, life satisfaction and the control variables

Reported life satisfaction is disaggregated by level of education in Table 2, with the Pearson χ^2 test indicating a significant relationship between education and satisfaction with life ($p < 0.001$). Most respondents reported a satisfaction score of 5 (18.97%) and 4 (13.65%), while roughly 21.08% reported a satisfaction score of eight of higher. About 36% of respondents have secondary education, while almost 15% possess no level of education. The results clearly show that those with a higher education reported higher levels of satisfaction than those with lower levels of education. For example, 30.63% respondents with post-secondary education reported a life satisfaction score of eight or higher, compared to only 11.15% among those with primary-level education.

Table 2 statistics are disaggregated by gender and race in Table 3. The findings from Table 3 broadly confirm that of the overall sample, in that individuals with higher education report higher levels of life satisfaction. As shown by the Pearson χ^2 statistic, the association between life satisfaction and education is statistically significant for all sex and racial groups, although the evidence is somewhat weak for the Asian sample. In the male sample, for instance, about 31.74% of those with post-secondary education reported a satisfaction level of eight or higher, compared to 12.13% for those with no education. In the female sample, these figures are 29.86% and 10.90%, respectively. In addition, roughly 9.70% of Black individuals with no levels of education reported a satisfaction level of eight or more, compared to 16.87% among those with secondary education. The findings remain roughly similar across other racial groups, although the sample sizes are relatively small for Whites and particularly Asians: higher levels of education are associated with higher levels of life satisfaction.

The ordered probit regression results for the sample as a whole are presented in Table 4. The χ^2 statistic in both regressions shows that the explanatory variables jointly explain the variation in reported satisfaction with life ($p < 0.001$). In the first specification, all coefficients for the education categories are positive and significant, suggesting that individuals with no education are less satisfied with life relative to individuals that have obtained some level of education. Post-estimation tests for the equality of the coefficients also indicate that people with primary education are less satisfied compared to those with secondary ($p < 0.05$) and post-secondary ($p < 0.01$) level education. There is, however, no significant

well-being differences among individuals with secondary and post-secondary education ($p = 0.27$). In the second specification, life satisfaction is also positively and significantly associated with the number of years of education ($p < 0.001$).

Table 5 presents the ordered probit results for men and women. For both sexes, the relationship between education and life satisfaction is positive and statistically significant in general. Among men, those with secondary ($p < 0.01$) and post-secondary ($p < 0.001$) education are significantly more satisfied relative to those with no education, with well-being and the absolute number of years of completed education also being positively related ($p < 0.001$). The same holds in the female sample, in addition to women with primary education being significantly more satisfied than women are with no education ($p < 0.001$) (for women, mean years of education is 7.43, compared to a slightly higher 7.83 years for men).

Table 6 reports the ordered probit results for the various racial groups. Interestingly, the results indicate that education is significantly and positively related to life satisfaction for Black and Coloured persons. However, life satisfaction and education are not significantly related for Asian and White individuals. A possible explanation for these findings is the relative difference in average endowed levels of education. As previously stated, Black people and Coloured people possess the lowest levels of education in South Africa. In the current sample, moreover, mean years of education is 7.26 and 7.59 for Blacks and Coloureds, respectively, compared to 9.27 (Asians) and 11.26 (Whites). Since education remains significant for Black and Coloured persons even after controlling for income, these racial groups attached some intrinsic value to additional levels of education. Thus, since Black and Coloured people possess a low stock of education relative to other racial groups, they are likely to place a deeper personal worth on education. Asian and White persons, on the other hand, possess high levels of educational attainment in general. It is therefore reasonable to expect that Asians and Whites have reached a threshold regarding the influence of education on life satisfaction, where additional education no longer contributes to life satisfaction.

For each sample, predicted probabilities were estimated for each level of education and life satisfaction outcome. These predicted probabilities are shown in Table 7. The results indicate that individuals with higher (lower) levels of education have a greater probability of reported a relatively high (low) level of life satisfaction. For instance, in the overall sample the probability of someone with post-secondary education reporting a life satisfaction score of greater than seven is 27.4%, compared to 11.4% for someone with no education. The likelihood of women with primary-level education reporting a satisfaction level of eight or higher is 15.8% while this probability is about 26.4% for women with post-secondary education. For Black individuals, moreover, the probability is 19.5% for those with post-secondary education to report a satisfaction level of greater than seven and 9.5% for those with no education. The findings are similar within the other samples as well: having higher levels of education on average increases the probability of reporting a higher level of life satisfaction.

As a whole, these findings support the first and third hypotheses of this pa-

per, in that education is significantly positively related to satisfaction with life in South Africa. In addition, only for Asian and White South Africans are additional education not positively related to life satisfaction, attributed partly to diminishing utility derived from additional education where the stock of education is already high.[3] The results for the second hypothesis are somewhat more ambiguous. However, if we consider the predicted probabilities for a satisfaction level above five in Table 7, men are more likely than women to report the relevant life satisfaction level regardless of educational attainment. On this basis, therefore, the second hypothesis should be rejected, although the evidence is relatively unclear. The positive association of education on subjective well-being among the majority of the sample is in accordance with international (Frey and Stutzer, 2000; Stanca, 2009) as well as South African research (Powdthavee, 2005; Hinks and Gruen, 2007).

Results for the control variables are mainly in line with existing research. There is a "U-shaped" relationship between life satisfaction and age, suggesting that well-being decreases with age (until roughly 38 years) and then rises again. Men are found to be more satisfied than women, while Blacks are the most unsatisfied race group and Coloureds the most satisfied (Hinks and Gruen, 2007; Ebrahim et al., 2013). In accordance with previous research (Gerdtham and Johannesson, 2001), health is positively related to satisfaction with life. Absolute income is positively associated with reported life satisfaction, which is supported by many studies (Easterlin, 1995, 2001). People also attach substantial weight to their positional status, indicated by the strong positive association between life satisfaction and perceived relative income. This finding is supported by international (Luttmer, 2005; Clark et al., 2008) and South African (Posel and Casale, 2011) research.

Consistent with Ferriss (2002) and Rule (2006), there is also evidence suggesting that those who attach great importance to religion are more satisfied than those who assign no value to religious activities. Consistent with Clark and Oswald (1994) and Powdthavee (2005), for instance, unemployed individuals are significantly less satisfied with life as compared to the employed. However, this finding surprisingly does not hold in the female, Black and Asian samples. Higher levels of trust are associated with greater life satisfaction across most samples. This finding is consistent with Helliwell and Wang (2011), who found that individuals are more satisfied with life if they are trusting that neighbours

---

[3] Since the relationship between education and life satisfaction may be largely dependent on the higher levels of income, perceived social rank and social capital obtained from additional education, we also estimated a series of regressions to determine what proportion of the association between education and life satisfaction is indirect by means of these three factors. The results (available on request) are consistent with existing research (Chen, 2012; Cuñado and de Gracia, 2012) in that a large explanation for the positive association between education and life satisfaction is that education raises income and perceived income rank, as well as social capital. It is also of note that greater absolute and relative income account for most of the relationship between life satisfaction and educational attainment. In addition, as shown in Table 6, the education coefficient remains significant for Black and Coloured individuals, suggesting that apart from the main indirect effects just mentioned, education is also of intrinsic value to these two groups.

would return a lost wallet. Finally, only the divorced/separated are significantly less satisfied with life compared to single individuals ($p < 0.05$). Post-estimation tests also indicate that the divorced/separated are less satisfied compared to cohabitants ($p < 0.05$), widows/widowers ($p < 0.10$), and married people ($p < 0.01$), while the latter are more satisfied than widows/widowers ($p < 0.10$).

6.2 Education as a positional good

Table 8 reports the ordered probit results from regressing life satisfaction on the relative education dummy and additional control variables for all samples. For all regressions, the control variables are age, age squared, gender, race, health status, absolute income, perceived relative income, religion, employment status, trust, and marital status. The relative education dummy is statistically significant and positive in all samples (overall, male, female, Black, and Coloured) except in the Asian and White regressions. Therefore, except for these latter two groups, education is positional in that reported life satisfaction is significantly greater among persons who possess education levels that exceed the mean level of education in their relevant cluster, as compared to persons with educational attainment below the mean education level.

Predicted probabilities from Table 8's regressions for people below and above the average level of education are shown in Table 9, and indicate that the probability of reporting a relatively high satisfaction level is greater for individuals possessing more than mean education as opposed to those with attainment below mean education. This pattern is reversed for White individuals, but as shown in Table 8, life satisfaction differences between White persons above and below mean educational attainment are not statistically significant. These findings are consistent with what we would expect given the distribution of education across racial groups. While 70.02% and 42.16% of Whites and Asians possess post-secondary education, only 20.51% of Blacks and 19.12% of Coloureds have attained this level. Moreover, about 98% of White and 75% of Asian individuals have attained at least secondary-level education; for Black and Coloured persons this percentage is roughly 56% and 57%, respectively. Black and Coloured people can therefore differentiate themselves from others by pursuing additional education, whereas since most White and Asian people have already attained at least secondary-level education, more education does not enable individuals within the latter two groups to differentiate themselves from others.

The results broadly lend support to this paper's fourth hypothesis, in that education serves as a positional good: Individuals possessing education levels that are higher (lower) relative to other persons in their cluster are significantly more (less) satisfied with life. The findings are also supported by that of Salinas-Jiménez et al. (2011). Particularly for Black individuals, moreover, education is an important status signal that is positively related to life satisfaction, as this group particularly is concerned about their educational attainment relative to that of others.

7 Conclusions

This paper set out to determine the association between education and reported life satisfaction in South Africa. In addition, the paper examined whether education is positional by constructing a relative education measure. The results indicate that, even after controlling for various other factors, there is a strong positive association between life satisfaction and education. People with a higher level of education are more satisfied compared to those with less education. Life satisfaction is also positively associated with each additional year of education, while people with no education are the least satisfied. The results of this paper are in line with the findings of international research and suggest that improvements in the level of education of South African citizens are likely to have a positive effect on individual well-being.

There is evidence that individuals view education as a positional good in that relative education is significantly related to reported life satisfaction. Specifically, except in the White and Asian samples, life satisfaction is significantly greater for persons who have attained more than the mean level of education relative to persons possessing less than the average level of education. Overall, this paper's findings indicate that, in general, additional education enhances South Africans' satisfaction with life, and that most individuals view education as a positional good. The association between education and life satisfaction is particularly strong for Black and Coloured individuals, which is expected given the low stock of average completed education among these two groups.

Given the cross-sectional design of the data, this paper can neither infer causality nor control for individual fixed effects. Future research could exploit the panel nature of future waves of NIDS to control for unobserved heterogeneity. Another possible area for future research would be to examine the influence of changes in the level of education on reported satisfaction with life. As this paper compares subjective well-being among people with differing levels and years of completed education, it would be interesting to investigate how, if at all, an individual's well-being changes if their levels of educational attainment change relative to others. Such analyses are sure to provide a more in-depth view of the actual effect of obtaining a higher education level on individual life satisfaction, as opposed to analysing the associations between education and satisfaction with life.

References

[1] Borooah, V.K. 2006. What makes people happy? Some evidence from Northern Ireland. *Journal of Happiness Studies*, 7, 427–465.

[2] Botha, F. and Booysen, F. 2013. The gold of one's ring is not far more precious than the gold of one's heart: Reported life satisfaction among married and cohabiting South African adults. *Journal of Happiness Studies*, 14(2), 433–456.

[3] Castriota, S. 2006. Education and happiness: A further explanation for the Easterlin Paradox? Mimeo.

[4] Chen, W-C. 2012. How education enhances happiness: Comparison of mediating factors in four East Asian countries. *Social Indicators Research*, 106(1), 117–131.

[5] Clark, A.E. and Oswald, A.J. 1994. Unhappiness and unemployment. *Economic Journal*, 104, 648–659.

[6] Clark, A.E. and Oswald, A.J. 1996. Satisfaction and comparison income. *Journal of Public Economics*, 61, 359–381.

[7] Clark, A.E., Frijters, P. and Shields, M.A. 2008. Relative income, happiness, and utility: An explanation for the Easterlin Paradox and other puzzles. *Journal of Economic Literature*, 46(1), 95–144.

[8] Cuñado, J. and De Gracia, F.P. 2012. Does education affect happiness? Evidence for Spain. *Social Indicators Research*, 108, 185–196.

[9] Dittmann, J. and Goebel, J. 2010. Your house, your car, your education: The socioeconomic situation of the neighbourhood and its impact on life satisfaction in Germany. *Social Indicators Research*, 96, 497–513.

[10] Easterlin, R. 1995. Will raising the incomes of all increase the happiness of all? *Journal of Economic Behaviour and Organization*, 27(1), 35–48.

[11] Easterlin, R. 2001. Income and happiness: Towards a unified theory. *Economic Journal*, 111, 465–484.

[12] Ebrahim, A., Botha, F. and Snowball, J. 2013. The determinants of life satisfaction among race groups in South Africa. *Development Southern Africa*, forthcoming.

[13] Ferrante, F. 2009. Education, aspirations and life satisfaction. *Kyklos*, 62(4), 542–562.

[14] Ferriss, A.L. 2002. Religion and the quality of life. *Journal of Happiness Studies*, 3(3), 199–215.

[15] Frey, B.S. and Stutzer, A. 2000. Maximizing happiness? *German Economic Review*, 1(2), 145–167.

[16] Gerdtham, U-G. and Johannesson, M. 2001. The relationship between happiness, health and socio-economic factors: Results based on Swedish micro data. *Journal of Socio-Economics*, 30, 553–557.

[17] Hartog, J. and Oosterbeek, H. 1998. Health, wealth and happiness: Why pursue a higher education? *Economics of Education Review*, 17(3), 245–256.

13

[18] Helliwell, J.F. 2003. How's life? Combining individual and national variables to explain subjective well-being. *Economic Modelling*, 20, 331–360.

[19] Helliwell, J.F. and Wang, S. 2011. Trust and wellbeing. *International Journal of Wellbeing*, 1(1), 42–78.

[20] Hinks, T. and Gruen, C. 2007. What is the structure of South African happiness equations? Evidence from quality of life surveys. *Social Indicators Research*, 82(2), 311–336.

[21] Luttmer, E.F.P. 2005. Neighbours as negatives: Relative earnings and well-being. *Quarterly Journal of Economics*, 20(3), 963–1002.

[22] Mahadea, D. and Rawat, T. 2008. Economic growth, income, and happiness: An exploratory study. *South African Journal of Economics*, 76(2), 276–290.

[23] Michalos, A.C. 2008. Education, happiness and well-being. *Social Indicators Research*, 87, 347–366.

[24] NIDS. 2008. National Income Dynamics Survey, Wave 1. Cape Town: University of Cape Town, Southern Africa Labour and Development Research Unit.

[25] Oswald, A.J. 1997. Happiness and economic performance. *Economic Journal, 107(445)*, 1815–1831.

[26] Peiró, A. 2006. Happiness, satisfaction and socio-economic conditions: Some international evidence. *Journal of Socio-Economics*, 35, 348–365.

[27] Posel, D.R. and Casale, D.M. 2011. Relative standing and subjective well-being in South Africa: The role of perceptions, expectations and income mobility. *Social Indicators Research*, 104, 195–223.

[28] Powdthavee, N. 2003. Is the structure of happiness equations the same in poor and rich countries? The case of South Africa. The University of Warwick: Department of Economics Research Papers No. 675. UK: Coventry.

[29] Powdthavee, N. 2005. Unhappiness and crime: Evidence from South Africa. *Economica*, 72, 531–547.

[30] Rule, S. 2006. Religiosity and quality of life in South Africa. *Social Indicators Research*, 81(2), 417–434.

[31] Salinas-Jiménez, M., Artés, J. and Salinas-Jiménez, J. 2011. Education as a positional good: A life satisfaction approach. *Social Indicators Research*, 103, 409–426.

[32] Stack, S. and Eshleman, J.R. 1998. Marital status and happiness: A 17-Nation study. *Journal of Marriage and Family*, 60(2), 527–536.

[33] Stanca, L. 2009. With or without you? Measuring the quality of relational life throughout the world. *Journal of Socio-Economics*, 38, 834–842.

[34] Statistics South Africa. 2006. *Income and expenditure of households, 2005/2006. Statistical release P0100*. Pretoria: Statistics South Africa.

[35] Statistics South Africa. 2011. *Labour market dynamics in South Africa, 2010*. Pretoria: Statistics South Africa.

[36] Statistics South Africa. 2012. *General Household Survey 2011. Statistical release P0318*. Pretoria: Statistics South Africa.

[37] Theodossiou, I. 1998. The effects of low-pay and unemployment on psychological well-being: a logistic regression approach. *Journal of Health Economics*, 17, 85–104.

[38] Witter, R., Okun, M.A., Stock, W.A. and Haring, M.J. 1984. Education and subjective well-being: A Meta analysis. *Education Evaluation and Policy Analysis*, 6, 165–173.

Table 1: Summary statistics

Variable	Mean	Standard deviation	Minimum	Maximum
Life satisfaction	5.43	2.45	1	10
Years of education	7.59	4.25	0	19
Relative education	0.18	0.38	0	1
Age	40.17	17.00	18	105
Female	0.61	0.49	0	1
Black	0.78	0.42	0	1
Coloured	0.15	0.35	0	1
Asian	0.01	0.12	0	1
White	0.06	0.24	0	1
Poor health status	0.09	0.00	0	1
Fair health	0.14	0.00	0	1
Good health	0.25	0.00	0	1
Very good health	0.25	0.00	0	1
Excellent health	0.27	0.00	0	1
Absolute income	2979.51	4779.63	0	90000
Much below average relative income	0.19	0.39	0	1
Below average relative income	0.33	0.47	0	1
Average relative income	0.39	0.49	0	1
Above average relative income	0.06	0.25	0	1
Much above average relative income	0.02	0.15	0	1
Religion: Not at all important	0.04	0.21	0	1
Religion: Unimportant	0.07	0.25	0	1
Religion: Important	0.44	0.50	0	1
Religion: Very important	0.45	0.50	0	1
Employment status: Employed	0.41	0.49	0	1
Employment status: Not economically active	0.40	0.49	0	1
Employment status: Unemployed	0.19	0.39	0	1
Trust: Not likely	0.75	0.43	0	1
Trust: Somewhat likely	0.15	0.35	0	1
Trust: Very likely	0.11	0.31	0	1
Single	0.46	0.50	0	1
Cohabitation	0.09	0.29	0	1
Widowed	0.10	0.30	0	1
Divorced/Separated	0.03	0.17	0	1
Married	0.32	0.47	0	1

Table 2: Reported life satisfaction (%), by level of education

Satisfaction score	None	Primary	Secondary	Post-secondary	Total
1	9.54	7.50	7.79	5.19	7.34
2	9.05	6.43	4.62	2.66	5.22
3	13.76	10.75	8.88	4.77	9.03
4	17.81	16.82	12.28	10.09	13.65
5	19.31	18.86	19.76	17.71	18.97
6	11.49	12.63	13.63	13.74	13.10
7	7.71	10.42	11.51	15.22	11.61
8	4.50	6.73	8.61	16.33	9.46
9	1.78	2.21	3.22	5.36	3.29
10	5.05	2.21	9.71	8.94	8.33
Total	100.0 [1802]	100.0 [2985]	100.0 [4439]	100.0 [3043]	100.0 [12269]
$\chi^2 = 723.86$ ($p < 0.001$)					

Note: sample sizes are shown in square brackets.

Table 3: Life satisfaction and level of education (%), by gender and race

	Life satisfaction score										
	1	2	3	4	5	6	7	8	9	10	Total
Male											
None	10.16	7.38	11.64	18.36	18.85	12.46	9.02	5.25	1.80	5.08	100.0 [610]
Primary	7.17	6.50	11.22	15.86	18.31	13.42	10.89	6.67	2.62	7.34	100.0 [1185]
Secondary	7.97	4.59	7.86	10.35	19.26	15.33	11.95	9.74	2.93	10.02	100.0 [1807]
Post-secondary	4.15	2.55	4.07	10.05	18.34	14.04	15.07	16.03	6.14	9.57	100.0 [1254]
Total	7.06	4.88	8.18	12.62	18.74	14.17	12.13	10.05	3.54	8.63	100.0 [4856]
$\chi^2 = 284.17\ (p < 0.001)$											
Female											
None	9.23	9.90	14.85	17.53	19.55	10.99	7.05	4.11	1.76	5.03	100.0 [1192]
Primary	7.72	6.39	10.44	17.44	19.22	12.11	10.11	6.78	1.94	7.83	100.0 [1800]
Secondary	7.67	4.64	9.57	13.60	20.10	12.46	11.21	7.83	3.42	9.50	100.0 [2632]
Post-secondary	5.93	2.74	5.25	10.12	17.27	13.53	15.32	16.55	4.81	8.50	100.0 [1789]
Total	7.51	5.45	9.59	14.33	19.12	12.40	11.26	9.08	3.13	8.13	100.0 [7413]
$\chi^2 = 464.5\ (p < 0.001)$											
Black											
None	10.53	9.96	15.16	17.76	18.58	11.41	6.91	3.99	1.46	4.25	100.0 [1577]
Primary	8.31	7.63	12.62	18.84	18.29	12.62	9.59	4.82	1.71	5.58	100.0 [2346]
Secondary	9.33	5.40	10.59	14.19	19.85	13.70	10.09	6.25	2.58	8.04	100.0 [3410]
Post-secondary	7.47	3.78	6.41	13.47	19.98	14.33	12.92	10.49	3.68	7.47	100.0 [1982]
Total	8.88	6.39	10.98	15.81	19.27	13.17	10.03	6.41	2.40	6.66	100.0 [9315]
$\chi^2 = 344.4\ (p < 0.001)$											
Coloured											
None	2.51	2.01	4.02	18.09	24.12	12.56	13.57	7.54	4.52	11.06	100.0 [199]
Primary	4.25	2.12	3.54	8.67	20.53	13.10	13.98	13.63	4.60	15.58	100.0 [565]
Secondary	2.56	1.71	3.27	5.83	19.49	14.94	15.08	14.22	4.98	17.92	100.0 [703]
Post-secondary	1.42	0.57	1.70	4.82	17.28	11.05	18.13	19.26	7.37	18.41	100.0 [353]
Total	2.86	1.65	3.13	7.86	19.89	13.35	15.16	14.29	5.27	16.54	100.0 [1820]
$\chi^2 = 78.9\ (p < 0.001)$											
Asian											
None	0.00	0.00	10.00	20.00	40.00	10.00	10.00	10.00	0.00	0.00	100.0 [10]
Primary	8.11	2.70	0.00	13.51	21.62	10.81	13.51	24.32	0.00	5.41	100.0 [37]
Secondary	4.69	1.56	0.00	4.69	20.31	6.25	26.56	26.56	3.13	6.25	100.0 [64]
Post-secondary	1.16	0.00	4.65	1.16	15.12	15.12	22.09	25.58	2.33	12.79	100.0 [86]
Total	3.55	1.02	2.54	5.58	19.29	11.17	21.32	24.87	2.03	8.63	100.0 [197]
$\chi^2 = 37.7\ (p < 0.10)$											
White											
None	0.00	0.00	0.00	0.00	50.00	0.00	0.00	50.00	0.00	0.00	100.0 [2]
Primary	0.00	0.00	12.50	25.00	12.50	0.00	0.00	12.50	0.00	37.50	100.0 [8]
Secondary	1.28	3.42	2.99	5.98	20.09	10.68	16.67	20.51	7.26	11.11	100.0 [234]
Post-secondary	0.34	0.34	1.02	3.23	11.04	13.75	19.35	33.11	10.19	7.64	100.0 [589]
Total	0.60	1.20	1.68	4.20	13.69	12.73	18.37	29.41	9.24	8.88	100.0 [833]
$\chi^2 = 76.3\ (p < 0.001)$											

Note: sample sizes are shown in square brackets.

Table 4: Ordered probit regression results for the overall sample

Dependent variable: Life satisfaction	(1)	(2)
Education		
Primary	0.106 [0.035]***	
Secondary	0.182 [0.037]***	
Post-secondary	0.212 [0.042]***	
Years of education		0.016 [0.003]***
Age	-0.013 [0.004]***	-0.013 [0.004]***
Age squared	0.000 [0.000]***	0.000 [0.000]***
Female	-0.050 [0.022]**	-0.050 [0.022]**
Race		
Coloured	0.579 [0.032]***	0.582 [0.032]***
Asian	0.380 [0.079]***	0.382 [0.080]***
White	0.461 [0.040]***	0.463 [0.039]***
Health		
Fair	0.158 [0.045]***	0.159 [0.045]***
Good	0.178 [0.043]***	0.179 [0.043]***
Very good	0.321 [0.044]***	0.322 [0.044]***
Excellent	0.220 [0.046]***	0.220 [0.046]***
Log (income)	0.011 [0.004]**	0.010 [0.004]**
Relative income		
Below average income	0.342 [0.031]***	0.343 [0.031]***
Average income	0.833 [0.033]***	0.835 [0.033]***
Above average income	1.098 [0.048]***	1.099 [0.048]***
Much above average income	1.237 [0.090]***	1.237 [0.090]***
Religion		
Unimportant	-0.028 [0.068]	-0.029 [0.068]
Important	0.047 [0.057]	0.047 [0.057]
Very important	0.276 [0.058]***	0.277 [0.058]***
Employment status		
Not economically active	0.017 [0.032]	0.016 [0.032]
Unemployed	-0.089 [0.035]**	-0.089 [0.035]**
Trust		
Somewhat likely	0.069 [0.028]**	0.069 [0.028]**
Very likely	0.241 [0.037]***	0.241 [0.037]***
Marital status		
Cohabitant	0.002 [0.037]	0.002 [0.037]
Widow/Widower	-0.044 [0.043]	-0.042 [0.043]
Divorced/separated	-0.154 [0.065]**	-0.152 [0.065]**
Married	0.036 [0.029]	0.038[0.029]
Observations	10042	10042
Pseudo R^2	0.0604	0.0602
χ^2	2540.4***	2535.0***

*Note: Robust standard errors are shown in parenthesis. $p < 0.001$ ***, $p < 0.05$ **. Omitted categories are as follows: Education = "None"; Female = "Male"; Race = "Black"; Health = "Poor"; Relative income = "Much below average income"; Religion = "Not at all important"; Employment status = "Employed"; Trust = "Not likely"; Marital status = "Single".*

Table 5: Ordered probit regression results for gender groups

Dependent variable: Life satisfaction	Male		Female	
	(3)	(4)	(5)	(6)
Education				
Primary	0.089 [0.059]		0.118 [0.043]***	
Secondary	0.166 [0.063]***		0.192 [0.046]***	
Post-secondary	0.249 [0.067]***		0.188 [0.055]***	
Years of education		0.017 [0.005]***		0.015 [0.004]***
Age	-0.011 [0.006]*	-0.011 [0.006]*	-0.014 [0.005]***	-0.014 [0.005]***
Age squared	0.000 [0.000]**	0.000 [0.000]**	0.000 [0.000]***	0.000 [0.000]***
Race				
Coloured	0.516 [0.051]***	0.513 [0.051]***	0.622 [0.041]***	0.628 [0.041]***
Asian	0.271 [0.131]**	0.282 [0.131]**	0.453 [0.100]***	0.449 [0.101]***
White	0.395 [0.062]***	0.413 [0.061]***	0.507 [0.052]***	0.499 [0.051]***
Health				
Fair	0.154 [0.085]*	0.156 [0.085]*	0.158 [0.053]***	0.158 [0.053]***
Good	0.148 [0.079]*	0.149 [0.079]*	0.194 [0.051]***	0.192 [0.051]***
Very good	0.340 [0.081]***	0.345 [0.080]***	0.303 [0.054]***	0.301 [0.054]***
Excellent	0.256 [0.082]***	0.261 [0.082]***	0.183 [0.057]***	0.178 [0.057]***
Log (income)	0.005 [0.006]	0.006 [0.006]	0.016 [0.006]***	0.015 [0.006]**
Relative income				
Below average income	0.304 [0.050]***	0.307 [0.050]***	0.368 [0.040]***	0.368 [0.040]***
Average income	0.743 [0.051]***	0.748 [0.051]***	0.893 [0.042]***	0.891 [0.042]***
Above average income	1.026 [0.076]***	1.035 [0.076]***	1.153 [0.063]***	1.147 [0.063]***
Much above average income	1.317 [0.144]***	1.319 [0.143]***	1.185 [0.116]***	1.184 [0.116]***
Religion				
Unimportant	0.035 [0.086]	0.035 [0.086]	-0.117 [0.108]	-0.118 [0.108]
Important	0.094 [0.074]	0.095 [0.074]	0.018 [0.089]	0.018 [0.089]
Very important	0.286 [0.077]***	0.287 [0.077]***	0.270 [0.089]***	0.271 [0.089]***
Employment status				
Not economically active	-0.015 [0.053]	-0.018 [0.053]	0.037 [0.049]	0.038 [0.041]
Unemployed	-0.146 [0.058]**	-0.142 [0.058]**	-0.047 [0.046]	-0.049 [0.045]
Trust				
Somewhat likely	-0.003 [0.045]	-0.001 [0.045]	0.116 [0.036]***	0.115 [0.036]***
Very likely	0.225 [0.056]***	0.226 [0.056]***	0.256 [0.049]***	0.252 [0.049]***
Marital status				
Cohabitant	-0.037 [0.060]	-0.039 [0.060]	0.032 [0.049]	0.034 [0.049]
Widow/Widower	-0.069 [0.107]	-0.066 [0.108]	-0.050 [0.049]	-0.047 [0.049]
Divorced/separated	-0.189 [0.117]	-0.188 [0.117]	-0.140 [0.078]*	-0.136 [0.078]*
Married	-0.012 [0.051]	-0.011 [0.051]	0.078 [0.037]**	0.079 [0.037]**
Observations	3927	3927	6115	6115
Pseudo R^2	0.0532	0.0529	0.0661	0.0660
χ^2	896.8***	885.9***	1679.6***	1679.5***

*Note: Robust standard errors are shown in parenthesis. $p < 0.001$ ***, $p < 0.05$ **, $p < 0.10$* . Omitted categories are as follows: Education = "None"; Race = "Black"; Health = "Poor"; Relative income = "Much below average income"; Religion = "Not at all important"; Employment status = "Employed"; Trust = "Not likely"; Marital status = "Single".*

Table 6: Ordered probit regression results for racial groups

Dependent variable: Life satisfaction	Black (7)	Black (8)	Coloured (9)	Coloured (10)	Asian (11)	Asian (12)	White (13)	White (14)
Education								
Primary	0.086 [0.038]**		0.161 [0.094]*		-0.038 [0.381]		-0.193 [1.203]	
Secondary	0.166 [0.042]***		0.210 [0.093]**		0.328 [0.431]		-0.155 [0.824]	
Post-secondary	0.173 [0.048]***		0.300 [0.115]***		0.537 [0.521]		-0.006 [0.825]	
Years of education		0.013 [0.004]***		0.022 [0.008]***		0.038 [0.040]		0.039 [0.035]
Age	-0.015 [0.004]***	-0.015 [0.004]***	0.003 [0.010]	0.004 [0.010]	-0.060 [0.040]	-0.058 [0.040]	-0.040 [0.017]**	-0.041 [0.017]**
Age squared	0.000 [0.000]***	0.000 [0.000]***	0.000 [0.000]	0.000 [0.000]	0.001 [0.000]*	0.001 [0.000]*	0.001 [0.000]***	0.001 [0.000]***
Female	-0.084 [0.026]***	-0.084 [0.026]***	0.037 [0.058]	0.040 [0.057]	0.190 [0.188]	0.190 [0.189]	0.160 [0.082]*	0.168 [0.082]**
Health								
Fair	0.133 [0.049]***	0.134 [0.049]***	0.187 [0.121]	0.190 [0.121]	0.371 [0.333]	0.375 [0.324]	0.678 [0.294]**	0.667 [0.292]**
Good	0.127 [0.048]***	0.127 [0.047]***	0.333 [0.115]***	0.336 [0.115]***	0.504 [0.328]	0.518 [0.332]	0.735 [0.278]***	0.726 [0.275]***
Very good	0.290 [0.050]***	0.291 [0.050]***	0.386 [0.118]***	0.393 [0.118]***	0.346 [0.368]	0.387 [0.369]	1.003 [0.281]***	0.995 [0.280]***
Excellent	0.163 [0.052]***	0.163 [0.052]***	0.233 [0.121]*	0.238 [0.121]**	0.745 [0.370]**	0.796 [0.369]**	1.270 [0.286]***	1.263 [0.285]***
Log (income)	0.018 [0.005]***	0.018 [0.005]***	-0.008 [0.012]	-0.007 [0.012]	0.005 [0.033]	0.004 [0.033]	-0.007 [0.012]	-0.006 [0.012]
Relative income								
Below average income	0.361 [0.034]***	0.363 [0.034]***	0.253 [0.091]***	0.253 [0.091]***	-0.340 [0.348]	-0.331 [0.353]	0.032 [0.322]	0.021 [0.323]
Average income	0.859 [0.036]***	0.860 [0.035]***	0.741 [0.092]***	0.738 [0.092]***	0.400 [0.290]	0.459 [0.283]	0.339 [0.316]	0.330 [0.317]
Above average income	1.214 [0.056]***	1.214 [0.056]***	0.822 [0.132]***	0.822 [0.131]***	0.173 [0.499]	0.267 [0.486]	0.516 [0.326]	0.509 [0.326]
Much above average income	1.201 [0.096]***	1.201 [0.096]***	1.270 [0.355]***	1.263 [0.355]***	1.425 [0.755]*	1.525 [0.746]**	1.259 [0.461]***	1.252 [0.461]***
Religion								
Unimportant	-0.038 [0.073]	-0.038 [0.073]	-0.027 [0.311]	-0.032 [0.311]	1.815 [0.632]***	1.723 [0.638]***	0.060 [0.247]	0.054 [0.267]
Important	0.064 [0.061]	0.066 [0.061]	0.102 [0.282]	0.098 [0.282]	1.263 [0.487]***	1.147 [0.470]**	-0.116 [0.207]	-0.128 [0.207]
Very important	0.300 [0.063]***	0.301 [0.063]***	0.286 [0.280]	0.280 [0.280]	1.582 [0.459]***	1.489 [0.454]***	0.081 [0.207]	0.062 [0.206]
Employment status								
Not economically active	0.022 [0.036]	0.022 [0.036]	0.025 [0.096]	0.027 [0.095]	-0.049 [0.261]	-0.098 [0.260]	-0.147 [0.127]	-0.152 [0.127]
Unemployed	-0.051 [0.039]	-0.051 [0.039]	-0.202 [0.104]*	-0.200 [0.103]*	0.499 [0.394]	0.443 [0.396]	-0.448 [0.193]**	-0.251 [0.193]**
Trust								
Somewhat likely	0.074 [0.032]**	0.074 [0.032]**	0.026 [0.080]	0.031 [0.080]	-0.244 [0.314]	-0.249 [0.309]	0.078 [0.093]	0.085 [0.093]
Very likely	0.278 [0.045]***	0.277 [0.045]***	-0.077 [0.113]	-0.079 [0.113]	0.153 [0.254]	0.183 [0.260]	0.239 [0.099]**	0.251 [0.097]**

Marital status								
Cohabitant	0.014 [0.041]	0.014 [0.041]	-0.119 [0.093]	-0.114 [0.092]	-0.340 [1.026]	-0.448 [1.067]	0.147 [0.277]	0.152 [0.275]
Widow/Widower	0.001 [0.049]	0.004 [0.049]	-0.218 [0.119]*	-0.213 [0.119]*	-0.436 [0.389]	-0.418 [0.379]	-0.183 [0.217]	-0.181 [0.215]
Divorced/separated	-0.134 [0.085]	-0.129 [0.085]	-0.237 [0.148]	-0.239 [0.148]	-0.563 [0.476]	-0.569 [0.475]	-0.162 [0.208]	-0.166 [0.205]
Married	0.065 [0.033]*	0.067 [0.033]**	-0.129 [0.076]	-0.125 [0.075]*	0.602 [0.287]**	0.618 [0.283]**	-0.007 [0.158]	-0.006 [0.156]
Observations	7706	7706	1490	1490	158	158	688	688
Pseudo R^2	0.0446	0.0444	0.0313	0.0313	0.0979	0.0945	0.0478	0.0475
χ^2	1375.9***	1368.7***	180.1***	180.6***	74.4***	75.0***	117.9***	117.2***

Note: Robust standard errors are shown in parenthesis. $p < 0.001$ ***, $p < 0.05$ **, $p < 0.10$. Omitted categories are as follows: Education = "None"; Female = "Male"; Health = "Poor"; Relative income = "Much below average income"; Religion = "Not at all important"; Employment status = "Employed"; Trust = "Not likely"; Marital status = "Single".

Table 7: Predicted probabilities from ordered probit regressions

					Life satisfaction score					
	1	2	3	4	5	6	7	8	9	10
Overall										
None	0.118	0.069	0.118	0.172	0.206	0.117	0.087	0.059	0.017	0.038
Primary	0.086	0.056	0.102	0.159	0.208	0.129	0.104	0.076	0.023	0.058
Secondary	0.066	0.046	0.088	0.147	0.205	0.136	0.116	0.090	0.028	0.078
Post-secondary	0.041	0.032	0.066	0.121	0.191	0.142	0.133	0.114	0.038	0.122
Male										
None	0.117	0.070	0.111	0.161	0.205	0.125	0.093	0.062	0.017	0.040
Primary	0.087	0.058	0.097	0.150	0.208	0.136	0.108	0.077	0.022	0.056
Secondary	0.062	0.046	0.081	0.134	0.202	0.145	0.124	0.096	0.029	0.082
Post-secondary	0.037	0.031	0.059	0.108	0.185	0.149	0.141	0.121	0.040	0.130
Female										
None	0.117	0.067	0.123	0.180	0.207	0.112	0.084	0.057	0.016	0.037
Primary	0.086	0.054	0.105	0.165	0.208	0.124	0.101	0.075	0.023	0.060
Secondary	0.068	0.046	0.093	0.155	0.207	0.130	0.111	0.087	0.027	0.076
Post-secondary	0.044	0.033	0.071	0.129	0.195	0.137	0.128	0.110	0.037	0.117
Black										
None	0.127	0.075	0.131	0.183	0.196	0.115	0.077	0.045	0.014	0.036
Primary	0.102	0.065	0.120	0.178	0.203	0.126	0.088	0.053	0.018	0.046
Secondary	0.078	0.055	0.106	0.167	0.206	0.137	0.101	0.065	0.022	0.063
Post-secondary	0.057	0.043	0.089	0.151	0.203	0.146	0.116	0.079	0.028	0.088
Coloured										
None	0.050	0.028	0.044	0.104	0.243	0.133	0.136	0.110	0.036	0.117
Primary	0.034	0.021	0.035	0.086	0.223	0.133	0.146	0.125	0.043	0.154
Secondary	0.026	0.017	0.029	0.075	0.208	0.132	0.150	0.135	0.048	0.179
Post-secondary	0.015	0.011	0.020	0.058	0.183	0.128	0.156	0.149	0.055	0.225
Asian										
None	0.079	0.023	0.045	0.095	0.272	0.111	0.194	0.153	0.005	0.022
Primary	0.084	0.022	0.042	0.088	0.252	0.105	0.193	0.173	0.007	0.034
Secondary	0.040	0.013	0.026	0.059	0.205	0.102	0.216	0.251	0.013	0.075
Post-secondary	0.027	0.008	0.017	0.041	0.156	0.087	0.211	0.306	0.018	0.128
White										
None	0.003	0.015	0.021	0.065	0.199	0.167	0.206	0.239	0.049	0.035
Primary	0.002	0.011	0.017	0.052	0.168	0.151	0.201	0.268	0.068	0.062
Secondary	0.004	0.016	0.021	0.060	0.175	0.149	0.194	0.256	0.065	0.060
Post-secondary	0.002	0.008	0.012	0.038	0.133	0.131	0.193	0.300	0.088	0.095

Table 8: Life satisfaction and relative education

Dependent variable: Life satisfaction	Overall	Male	Female	Black	Coloured	Asian	White
Relative education dummy	0.114***	0.127***	0.109***	0.112***	0.105*	0.259	-0.408
	[0.026]	[0.041]	[0.036]	[0.030]	[0.060]	[0.304]	[0.355]
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10095	3954	6141	7746	1494	159	696
Pseudo R^2	0.0602	0.0531	0.0658	0.0443	0.0307	0.0951	0.0481
χ^2	2545.0***	891.4***	1681.8***	1373.3***	172.9***	75.5***	119.5***

Note: Robust standard errors are presented in square brackets. Comparison group for relative education dummy is "below mean education". p < 0.001***, p < 0.10*.

Table 9: Predicted probabilities and relative education for all samples

	Life satisfaction score									
	1	2	3	4	5	6	7	8	9	10
Overall										
Below mean education	0.098	0.060	0.108	0.164	0.207	0.124	0.070	0.070	0.020	0.050
Above mean education	0.057	0.040	0.080	0.137	0.199	0.138	0.100	0.100	0.032	0.095
Male										
Below mean education	0.098	0.063	0.102	0.155	0.206	0.131	0.102	0.072	0.020	0.050
Above mean education	0.054	0.041	0.074	0.126	0.196	0.145	0.128	0.104	0.033	0.097
Female										
Below mean education	0.098	0.059	0.111	0.171	0.207	0.119	0.095	0.069	0.020	0.051
Above mean education	0.059	0.041	0.084	0.144	0.201	0.132	0.118	0.096	0.031	0.093
Black										
Below mean education	0.107	0.067	0.122	0.178	0.201	0.124	0.086	0.052	0.017	0.045
Above mean education	0.063	0.046	0.093	0.155	0.203	0.143	0.112	0.076	0.027	0.081
Coloured										
Below mean education	0.047	0.027	0.043	0.102	0.239	0.133	0.137	0.112	0.037	0.123
Above mean education	0.030	0.019	0.032	0.081	0.213	0.133	0.147	0.131	0.045	0.170
Asian										
Below mean education	0.150	0.028	0.051	0.096	0.238	0.091	0.158	0.141	0.006	0.040
Above mean education	0.082	0.019	0.037	0.077	0.225	0.099	0.191	0.197	0.009	0.063
White										
Below mean education	0.003	0.014	0.018	0.053	0.160	0.139	0.189	0.270	0.073	0.079
Above mean education	0.005	0.019	0.024	0.067	0.186	0.150	0.190	0.245	0.059	0.055