Educated and Happy

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Educated and Happy: A Four-Year Study Explaining the Links Between Education, Job Fit, and Life Satisfaction

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Drawing on a bottom-up theoretical perspective on life satisfaction, we developed and tested a model that specifies distinct paths from education to life satisfaction through three domain satisfactions (i.e., job, financial, and health satisfactions). Furthermore, we proposed explanatory mechanisms for each of these three paths (i.e., job fit, financial literacy, and proactive healthy behaviours). To test our hypotheses, we used a large probability sample comprising 3,011–9,669 individuals, from the Netherlands, who provided survey responses over four consecutive years. The results supported the hypothesised mediating mechanisms explaining the indirect relationship between education and job, financial, and health satisfactions. Findings also showed that each of these domain satisfactions independently predicts general life satisfaction. Overall, the study shows the importance of education for life satisfaction and highlights the importance of work (i.e., job fit and job satisfaction) for individuals' general subjective well-being.

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Achieving a high level of education is a valued outcome in our post-industrial society. Education is valued because of its presumed positive influence on one's well-being (Witter, Okun, Stock, & Haring, 1984), as we tend to believe that educated people have better lives because they are better informed and thus make better decisions, hold better jobs, and are better off financially, among other things. Central to this assumption is the role of work as an explanatory mechanism for why more educated people would have more satisfying lives. Indeed, in the latest review of the literature linking the work domain to life satisfaction, Erdogan, Bauer, Truxillo, and Mansfield (2012) noted that work "is a source of need gratification, particularly for financial needs" (p. 1052) and, like others who reviewed the predictors and correlates of subjective well-being (e.g., Diener, Suh, Lucas, & Smith, 1999; Heller, Watson, & Ilies, 2004), identified job satisfaction as one of the most important predictors of life satisfaction.

In this article, we take a bottom-up theoretical perspective on life satisfaction (see Diener et al., 1999) that focuses on the need satisfaction capacities of education. As explained by many authors (e.g., David, Green, Martin, & Suls, 1997; Heller et al., 2004), a bottom-up approach to explaining life satisfaction proposes that individuals' satisfactions with specific life domains (e.g., work, marriage, health, etc.) all contribute to their overall life satisfaction.[1] Within this general framework, we propose and test a novel psychological mechanism that links education to job satisfaction and further to life satisfaction: job fit— the extent to which one believes that one fits with his or her job well in terms of one's skills, abilities, and education (Edwards, 1991; Kristof, 1996). Furthermore, we include two other domain satisfactions (i.e., financial and health) as proximal predictors of life satisfaction in our model and examine distinct mechanisms explaining how education is linked to life satisfaction through each of these domain satisfactions. We examine these links and mechanisms in an integrated model that we test using a large probability sample of households in the Netherlands and a design that includes measuring the constructs included in a model at different times.

We believe our research is well positioned to contribute to the literature on education and life satisfaction in at least three ways. First, we contribute to theory and research on job satisfaction by proposing a conceptual mechanism specifying that those who are more educated would find and hold jobs that fit better with their skills and abilities, which makes them more satisfied with their jobs. Second, our theorising and empirical testing that consider job satisfaction in conjunction with health and financial satisfactions as proximal predictors of life satisfaction represent a more integrative view of employees' attitudes about

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[1] This is in contrast to the top-down approach whereby individuals' temperaments or personalities largely determine their life satisfaction which in turn influences the domain satisfactions.

important aspects spanning their work and life domains and the contributions of these attitudes in influencing their global life satisfaction. That is, even though there has been work linking education to perceived economic well-being and further to general subjective well-being (see Judge, Ilies, & Dimotakis, 2010), we contribute beyond that work by specifying distinct paths from education to life satisfaction through three domain satisfactions (i.e., job, financial, and health) and propose explanatory mechanisms for each of these three paths. Third, within the need satisfaction bottom-up perspective on life satisfaction that we adopt (Diener et al., 1999; Wilson, 1967), we specify explanatory mechanisms for why education leads to financial and health satisfactions (i.e., financial literacy and proactive healthy behaviours), thus contributing to theory and research on education and well-being.

THEORY AND HYPOTHESES

As mentioned, we examine the link between education and life satisfaction through a need satisfaction bottom-up theoretical lens (Diener et al., 1999; Heller et al., 2004; Wilson, 1967), and we give the work domain (i.e., job fit and job satisfaction) a central role in our model. Unlike previous research that examined mechanisms linking education to life satisfaction (e.g., Judge et al., 2010), the central path that predicts life satisfaction in our model runs from education to job satisfaction through job fit, and our analyses account (control) for influences that education has on life satisfaction through financial and health satisfactions.

Education, Job Fit, and Job Satisfaction

Bottom-up explanations for why people are satisfied (or dissatisfied) with their lives essentially assume that life conditions, resources, situations and events sum up to form one's life satisfaction. Relevant for our purpose here, these bottom factors can be grouped under various life domains (e.g., work, health, marriage, etc.) and then the domain satisfactions (e.g., job satisfaction) in combination form life satisfaction (Heller et al., 2004). In contrast, top-down models assume that temperamental differences between individuals lead to differences in life satisfaction and, subsequently, in various domain satisfactions (perhaps through affect which can influence all attitudinal constructs similarly). Need fulfilment has long been specified in bottom-up theoretical models of life satisfaction as an explanatory mechanism for why certain resources or conditions in one's life (e.g., education, money, and health) may influence one's happiness or life satisfaction (e.g. Wilson, 1967). Similarly, job satisfaction has also been conceptualised as arising when the job fulfils employees' needs (Erdogan et al., 2012; Locke, 1976). Furthermore, job satisfaction emerged as one of the strongest meta-analytic correlates of life

satisfaction (corrected correlation of .44 in Heller et al., 2004), and theoretically job satisfaction should influence life satisfaction because people spend a large proportion of their time at work and they derive a sense of purpose and meaning from work (Heller et al., 2004). Therefore, we shall propose that job satisfaction is a more immediate outcome of education (than life satisfaction is). Thus, work experiences and outcomes, in essence, would explain the observed link between education and life satisfaction (Witter et al., 1984; see Diener, Sandvik, Seidlitz, & Diener, 1993).

To be sure, we are not the first to theorise or test that work explains why more educated people are more satisfied with their lives (see Judge et al., 2010), and several intermediary mechanisms have been proposed (e.g., occupational status, income, etc.; see Diener et al., 1993, Judge et al., 2010). Herein we propose that education is positively associated with job satisfaction and, through job satisfaction, it further affects life satisfaction. But why would education result in achieving a more satisfying job? The role of economic well-being notwithstanding (see Judge et al., 2010, for example), and we do include financial satisfaction in our model, we propose a novel mechanism by which those who are more educated have jobs that fit with their knowledge and skills better, compared to those who are less educated, and this better achieved fit leads to higher job satisfaction. This mechanism is entirely consistent with the need fulfillment approach to examining job and life satisfaction (Erdogan et al., 2012; Diener et al., 1993) because obtaining better fit with one's job should make one more fulfilled with one's work.

Like the bottom-up need fulfilment theory of life satisfaction (see Diener et al., 1993), theory on person-job (PJ) fit specifies that one "form of PJ fit occurs when employees' needs, desires, or preferences are met by the jobs that they perform" and that this type of fit "has been the emphasis of various theories of adjustment, well-being, and satisfaction" (Kristof-Brown, Zimmerman & Johnson, 2005, pp. 284–285). There is also theory and evidence supporting a link between education and job fit. The gravitational hypothesis, which was first used in personnel selection to justify criterion occupational groups, assumes "that people tend to gravitate towards and remain in jobs that they are able to perform and that are reasonably compatible with their personal characteristics" (McCormick, DeNisi, & Shaw, 1979, p. 52; see also McCormick, Jeanneret, & Mecham, 1972). Wilk, Desmarais, and Sackett (1995), for example, offered a compelling test of the gravitational hypothesis with respect to cognitive ability. Yet these authors did state the gravitational hypothesis in a more general form that specifically focused on person-job fit (p. 79): "The gravitational hypothesis posits that individuals over the course of their labor market experiences, will sort themselves into jobs that are compatible with their interests, values, and abilities, that is, jobs for which there is a good person-job fit." And again, obtaining good fit should enable employees to fulfil their needs with respect to work and thus increase their job satisfaction.

What we propose herein is a more nuanced gravitational hypothesis with respect to education. That is, we shall make a case that people not only gravitate towards jobs that better fit their education, but also their person-job fit is influenced by their level of education. In short, it is our contention that those who are more educated qualify for more specialised jobs and thus, over time, they gravitate towards jobs where they fit better, compared to those who are less educated and qualify for a wider range of more general jobs that can only offer limited fit. Furthermore, as already noted, we believe that the enhanced job fit further leads to increased job satisfaction because better job fit implies more effective need fulfilment (Kristof-Brown et al., 2005) which increases job satisfaction (Erdogan et al., 2012). Indeed, meta-analytic evidence supports a strong positive association between person-job fit and job satisfaction (Kristof-Brown et al., 2005). There is also evidence showing that mismatches on more specific dimensions (e.g., skills and education) decrease job satisfaction (e.g., Badillo-Amador & Vila, 2013; Lee & Sabharwal, 2016). Therefore, we propose:

> *Hypothesis 1*: There will be a positive indirect effect of education on job satisfaction through person-job fit.

Education, Financial Literacy, and Financial Satisfaction

We argue that financial literacy could be one of the mediating factors that explain the observed relationship between education and economic well-being, and also perhaps the relationship between general mental ability (GMA) and economic well-being (Judge et al., 2010). Previous studies have provided some insights into the relationship between education and financial literacy. Using a sample of 924 college students, Chen and Volpe (1998) found that class ranks (i.e., freshman, sophomore, junior, senior, and graduate) were positively related to levels of financial knowledge, controlling for the age of the respondents. In a longitudinal panel study, Lusardi and Mitchell (2007a) revealed that individuals with higher levels of education were more likely to answer financial queries correctly. Although we expect to replicate these results by finding a significant positive association between education and financial literacy, we should note that because of the known relationship between GMA and education (e.g., Judge et al., 2010) as well as the documented associations between indicators of GMA (e.g., numeracy; see Fernandes, Lynch & Netemeyer, 2014) and financial literacy, it is possible that GMA explains, at least in part, the association between education and financial literacy.

Although there is little research examining the link between financial literacy and financial satisfaction, scholars have found that financial knowledge influences financial behaviours (Hilgert, Hogarth, & Beverly, 2003) and predicts household wealth accumulation and better retirement planning (Lusardi &

Mitchell, 2007b; van Rooij, Lusardi, & Alessie, 2012). Drawing on these findings, we expect that financial literacy leads to better financial performance, which will ultimately impact financial satisfaction and (as we will explain later) general life satisfaction. Taking together, we postulate:

> *Hypothesis 2*: There will be a positive indirect effect of education on financial satisfaction through financial literacy.

Education, Proactive Healthy Behaviours, and Health Satisfaction

In a study using data from the Swedish Adoption/Twin Study, Judge and colleagues (2010) reported inconsistent findings on the relationship between education and health-related outcomes. On one hand, they found a significant association between educational achievements and objective physical health ($r = .15$, $p < .01$). On the other hand, there was only a small and non-significant association between education and unhealthy behaviours ($r = -.07$). The authors called for a more in-depth exploration of the relationship between education and health-related behaviours. Gottfredson and Deary (2004) suggested that education could be one of the mediating factors that explain the relationship between cognitive ability and health-related outcomes, because education could enhance one's health literacy and help one understand the value of healthy behaviours. In line with Gottfredson and Deary (2004), Ross and Wu (1995) replicated results with two samples and consistently found that individuals who were more educated were less likely to smoke and more likely to exercise. In addition, with the dietary information from more than 15,000 women in the United Kingdom, Cade and colleagues (1999) showed that women in the healthy diet group had a higher educational level than women in the least healthy diet group. Taking these findings into consideration, we therefore contend that relatively highly educated individuals are more likely to engage in proactive healthy behaviours (i.e., healthy diet and physical exercise) and, as such, become more satisfied with their health as compared to less educated individuals.

> *Hypothesis 3*: There will be indirect positive associations between education and satisfaction with health via engagement in proactive healthy behaviours: (a) healthy diet, and (b) physical exercise.

The Multidimensional Nature of Life Satisfaction

Life satisfaction is an attitudinal variable, reflecting an evaluative summary along a continuum ranging from positive to negative about one's life (Heller

et al., 2004). As one of the core components of subjective well-being (Andrews & Withey, 1976), life satisfaction reflects a set of evaluative judgments about various dimensions of one's life. In their meta-analytic investigation of what predicts life satisfaction, Heller et al. (2004) distinguished between top-down (i.e., person-specific antecedents, like personality or temperament) and bottom-up approaches (i.e., the role of contextual factors) and tested competing models explaining life satisfaction. Their results supported an integrative approach to life satisfaction and showed that satisfaction with various life domains (marital and job satisfaction) contributed to life satisfaction (and also explained in part the effects of personality factors on life satisfaction; Heller et al., 2004).

Theoretically, when one is asked to evaluate one's life in general, one takes into account, sometimes subconsciously, one's satisfaction with various life domains to arrive at the overall life satisfaction evaluation. By taking into consideration job, health, and financial satisfaction, our study answers the call of Heller et al. (2004) for large-sample research exploring the ways in which satisfaction with a larger variety of life domains influences general life satisfaction. Prior research has extensively documented the positive association between job satisfaction and general life satisfaction, yet only scant empirical evidence explored the association between financial and health satisfactions on the one hand and general life satisfaction on the other hand. As health and financial satisfactions reflect evaluative judgments in two important life domains, we argue that health, financial, and job satisfactions positively and independently predict general life satisfaction. Finally, as these three domain satisfactions are likely to be interrelated (e.g., job satisfaction is influenced by the financial satisfaction which is given primarily by the job), it is important to examine whether the previously documented relationships of job satisfaction with life satisfaction (e.g., Heller et al., 2004) is maintained when controlling for health and financial satisfactions.

Hypothesis 4: Financial satisfaction (a), job satisfaction (b), and health satisfaction (c) will each independently predict life satisfaction.

METHOD

Participants and Procedure

To test our model and hypotheses, we used data from the Longitudinal Internet Studies for the Social Sciences (LISS) panel administered by CentERdata (Tilburg University, The Netherlands). Participants were selected based on a true probability sample of households drawn from the population register in The Netherlands and they filled out the questionnaires online. The average age

TABLE 1
Numbers of Respondents for the Main Variables

Variable	Year	Number of respondents
Education	2009	9,669
Financial literacy	2010	7,887
Physical exercise	2010	4,668
Physical exercise	2011	4,102
Healthy diet	2010	4,663
Healthy diet	2011	4,097
Job fit	2010	3,800
Job fit	2011	3,011
Health satisfaction	2011	4,116
Job satisfaction	2011	3,081
Financial satisfaction	2011	4,179
Life satisfaction	2012	5,037

of the respondents, measured in 2009, was 43.49 years ($SD = 14.21$). Fifty-four per cent of the respondents were women. We used four waves of the LISS panel data collected in 2009, 2010, 2011, and 2012. Notably, different variables were assessed in different years, precluding lagged panel procedures that would control confounding effects of time. Results of analyses described below mostly assuage concerns about temporal confounds. The constructs in our model were measured at least one year apart (see Table 1 for details on when the constructs were measured). Compared with cross-sectional designs that involve concurrent measurement, this separation of some of the measurements in time offers an important methodological advantage in relating the constructs measured at different times by reducing common method and rater bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).[2]

Analytical Strategy

Although some measurements were assessed in multiple years, we tested our hypotheses using cross-sectional analyses because the nature of the data precluded us from conducting lagged panel analysis and also because the outcomes that we study—especially the end outcome, life satisfaction—showed

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[2] For physical exercise, healthy diet, and job fit which were measured in both 2010 and 2011, we used the scores from both years in order to increase reliability of the scale scores by minimising transient errors. When participants are largely influenced by their specific situation (e.g., mood, focus of attention) at the time of measurement, their responses are subject to transient errors (Schmidt, Le, & Ilies, 2003). By combining measurements from different time points, participants' responses in different situations are averaged and thus transient errors are alleviated (Litwin, 1995).

high temporal stability.[3] We did not control for construct scores measured at a previous time period when predicting endogenous constructs that were measured more than one time (i.e., we did not control for life satisfaction measured in 2011 when predicting life satisfaction measured in 2012). Therefore, we did not study changes over time but rather examined whether those who are more educated are also more satisfied with their finance, job, health, and life in general. Having measurements separated in time alleviates common method and rater bias concerns as we explained above. However, the temporal ordering of the measurements is confounded with the causal ordering of the constructs, which could influence the results as correlations tend to decay over time. To test this possibility, we computed the correlations between education and life satisfaction, and also between education and all three domain satisfactions measured in different years. The correlations between education and life satisfaction measured in 2010, life satisfaction measured in 2011, and life satisfaction measured in 2012 were identical (.08), which indicates there was no decay in the magnitude of the association over time. There was also no apparent decay in the correlations for job satisfaction (.07, .05 and .08) and for health satisfaction (.10, .07 and .09). The correlations between education and financial satisfaction seemed to become weaker (.15, .11, and .10), but the last two are not significantly different from each other. The stability of the noted relationships, along with the high test-retest correlations for the satisfaction measures, suggests that temporal confounds do not unduly threaten interpretations of construct order in model testing.

As there was a relatively large amount of missing data from the LISS panel data (see Table 1), we used a full-information-maximum-likelihood approach with pairwise deletion in our analyses to maximise statistical power. We examined whether the different (but overlapping) samples resulting from pairwise deletion were homogeneous in terms of demographics by comparing the average gender and age between each pair of these samples. For gender, 65 out of 66 pairs of samples showed no significant differences, lending strong support to homogeneity across these samples. For age, although 41 out of 66 comparisons showed significant differences, the average age of all samples displayed a narrow range from 40.92 to 44.01 years, which lent some support for homogeneity across samples. Taken together, we consider the samples for different variables as demographically homogeneous.

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[3] The one-year test-retest correlations were .73 for life satisfaction, .68 for job satisfaction, .61 for health satisfaction, and .69 for financial satisfaction (2011–2012). The temporal stability of these construct scores supports the cross-sectional analysis approach that we use (rather than studying changes).

Measures

Education was measured in 2009 by asking participants to report the highest level of education they completed (not in progress), using six educational categories defined by the Dutch Central Bureau of Statistics (1 = primary school, 2 = intermediate secondary education, 3 = higher secondary education, 4 = intermediate vocational education, 5 = higher vocational education, 6 = university education).

Financial literacy was measured in 2010 using four items that evaluated respondents' knowledge on three key dimensions of financial literacy—interest compounding, inflation and risk diversification (Lusardi & Mitchell, 2007b; van Rooij, Lusardi, & Alessie, 2011). Sample items include: "A share in a company usually offers a more certain return than an investment fund that only invests in shares" (1 = true, 2 = not true, 3 = I don't know, 4 = I would rather not say), and "If the interest rate goes up, what should happen to bond prices?" (1 = they should increase, 2 = they should decrease, 3 = they should stay the same, 4 = none of the above, 5 = I don't know, 6 = I would rather not say). Correct answers were coded as 1, and other answers as 0. Cronbach's alpha for these scores was .79.

Proactive healthy behaviours were evaluated in 2010 and 2011 using two indices—physical exercise and healthy diet. The index for *physical exercise* included the following three questions: "If you look back on the last seven days, on how many of those days did you perform a strenuous physical activity such as lifting heavy loads, digging, aerobics or cycling?" (0 to 7); "If you think of the past seven days, on how many of those days did you perform a moderately intensive physical activity such as carrying light loads, cycling at a normal pace or a doubles game of tennis?" (0 to 7); and "If you look back on the last seven days, on how many of those days did you spend at least 10 minutes walking? Think of walking on the job and at home, walking to get from one place to another, and all the walking you did as part of recreation, sports or leisure time activities." (0 to 7). Cronbach's alpha for these scores was .61. The index for a *healthy diet* was measured using four items. Sample items include "how often do you eat raw or cooked vegetables?" and "how often do you eat fruits?" Respondents answered these questions using a six-point scale (1 = never, 2 = 1 to 3 times per month, 3 = 1 time per week, 4 = 2 to 4 times per week, 5 = 5 to 6 times per week, 6 = every day). Cronbach's alpha for these scores was .71.

Job fit was evaluated in 2010 and 2011 with two questions: "Please indicate on a scale from 0 to 10 how your highest level of education suits the work that you now perform" (0 means that your highest level of education does not at all suit your work and 10 means that your highest level of education perfectly suits your work) and "Please indicate on a scale from 0 to 10 how your knowledge and skills suit the work you do" (0 means that your knowledge and skills do

not at all suit your work and 10 means that your knowledge and skills perfectly suit your work). Cronbach's alpha for these scores was .83.

Financial satisfaction was evaluated in 2011 with three items on a 10-point Likert scale. The items include: "How satisfied are you with your financial situation?" (0 = not satisfied at all, 10 = entirely satisfied); "Can you indicate, on a scale from 0 to 10, whether your financial situation has gotten better or worse compared to one year ago?" (0 = much worse, 10 = much better); and "Can you indicate, on a scale from 0 to 10, how hard or how easy it is for you to live off your income?" (0 = very hard, 10 = very easy). The reliability of these scores was $\alpha = .80$.

Health satisfaction was measured in 2011 using five items referring to participants' subjective perceptions of their overall health: "How would you describe your health, generally speaking?" (1 = poor, 2 = moderate, 3 = good, 4 = very good, 5 = excellent); "Can you indicate whether your health is poorer or better compared to last year?" (1 = considerably poorer, 2 = somewhat poorer, 3 = the same, 4 = somewhat better, 5 = considerably better); "To what extent did your physical health or emotional problems hinder your daily activities over the past month" (1 = very much, 2 = quite a lot, 3 = a bit, 4 = hardly, 5 = not at all); "To what extent did your physical health or emotional problems hinder your social activities over the past month, such as visiting friends and acquaintances?", (1 = very much, 2 = quite a lot, 3 = a bit, 4 = hardly, 5 = not at all); and "To what extent did your physical health or emotional problems hinder your work over the past month, for instance in your job, the housekeeping, or in school?" (1 = very much, 2 = quite a lot, 3 = a bit, 4 = hardly, 5 = not at all). The scores on these items were first transformed to *z*-scores before computing the scale scores. Cronbach's alpha for these scores was .84.

Job satisfaction was evaluated in 2011 with five items: "How satisfied are you with your working hours?", "How satisfied are you with the work you do?", "How satisfied are you with the general atmosphere among your colleagues?", "How satisfied are you with your career so far?", and "How satisfied are you with your current work?". Cronbach's alpha for these scores was .85.

Life satisfaction was evaluated in 2012 with the five-item Satisfaction with Life Scale (Diener, Emmons, Larsen & Griffin, 1985) using a 1–7 agreement scale (1 = completely disagree, 7 = completely agree). Sample items include: "In most ways my life is close to my ideal," and "I am satisfied with my life." Cronbach's alpha for these scores was .88.

Gender and *age*, as well as their product term, served as control variables in our analyses, as previous studies have suggested that age, gender and the interaction between them influence subjective well-being (Diener et al., 1999; Inglehart, 2002; Shmotkin, 1989). We obtained information on participants' gender (1 = male, 2 = female) and age from the LISS panel data.

Statistical Analyses

We used the Mplus 7 (Muthén & Muthén, 2012) and SPSS 24.0 statistical analysis platforms to analyse our data. Before testing our hypotheses, we examined the normality of the scores of variables. We conducted tests on item-level skewness and kurtosis as well as multivariate kurtosis (Henson, 1999). Based on the results of the normality test and the relatively large amount of missing data, we were able to determine the estimator function to be used in our structural equation modelling (SEM) analyses. To test our hypotheses, we adopted Anderson and Gerbing's (1988) two-step SEM approach to model testing. We first tested the measurement model for the constructs included in our study using confirmatory factor analysis. Then we tested our proposed model (a fully mediated model) and a series of alternative models (which specified partial mediation for various indirect effects) using full SEM modelling, whereby each construct was specified to be indicated by all the items of its respective scale. Based on model fit information and the principle of parsimony, we decided on the final model (shown in Figure 1) and tested our hypotheses based on this model.

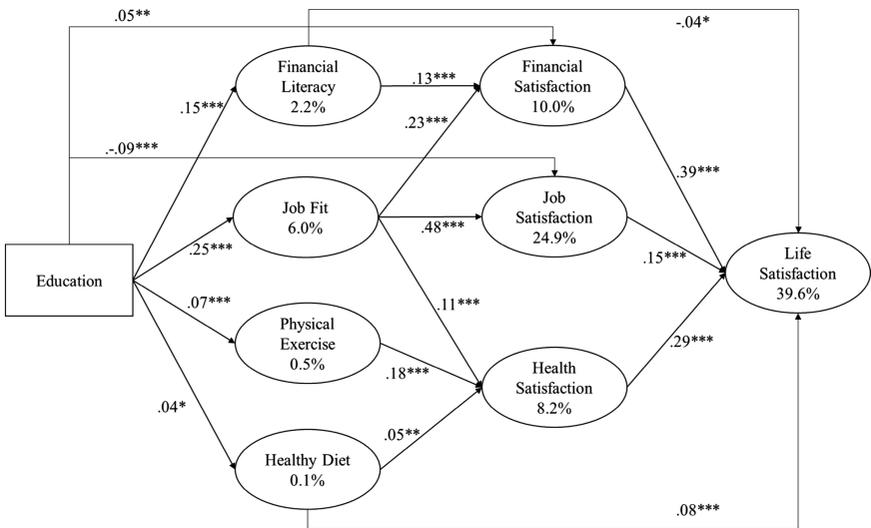FIGURE 1.   Path coefficients and variance explained for endogenous variables in the final model (Model 4).
Notes: Path coefficients are standardised. For the purpose of clarity, control variables and indicators of latent variables are not shown.
$*p < .05.$ $**p < .01.$ $***p < .001.$ Percentages in ellipses denote variance explained for each endogenous variable.

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RESULTS

Descriptive Statistics and Normality Testing

We present the descriptive statistics of and intercorrelations among variables in Table 2. To test the normality of the data, we first analysed item-level skewness and kurtosis. According to West, Finch, and Curran (1995), the distributions were judged as sufficiently close to normal to avoid the need for item-level transformations. Although all items of the study variables displayed univariate normal distributions, these variables might not necessarily be under multivariate normality (Henson, 1999). Therefore, we calculated Mardia's (1970) coefficients of multivariate skewness and kurtosis with all variables in our theoretical model. The multivariate normality test showed that the data were not normally distributed (skewness = 8.186, $\Delta\chi^2$ (9) = 2817.32, $p < .001$, kurtosis = 115.379, $z = 26.45, p < .001$).

When data are not normally distributed, it is likely that the standard errors of estimates are negatively biased and the model rejection rates are excessively high (e.g., West et al., 1995). Therefore, the violation of multivariate normal distribution may yield biased results in this study. Recent advances in SEM have recommended that fit indices be corrected for non-normal data (e.g., Lei & Lomax, 2005; Maydeu-Olivares, 2017). In Mplus, the MLR estimator function (a full-information-maximum-likelihood estimator with robust standard errors) corrects biased model fit indices (Muthén & Muthén, 2012), and has been shown to be effective in a simulation analysis comparing MLR and a traditional maximum likelihood approach (Maydeu-Olivares, 2017). In addition, given that measurements across multiple years yielded a relatively large amount of missing data, a full-information-maximum-likelihood approach with robust standard errors is appropriate because it acquires maximal information and corrects the biased standard errors caused by missing data (Enders, 2001). Taken together, we specified MLR as the estimator function throughout our subsequent analyses to deal with non-normality and missing data.

Confirmatory Factor Analyses

We conducted a set of confirmatory factor analyses to ensure that the eight latent variables (financial literacy, job fit, physical exercise, healthy diet, financial satisfaction, job satisfaction, health satisfaction, and life satisfaction) in our study had satisfactory discriminant validity. We used the full-information-maximum-likelihood approach (and accordingly, pairwise deletion) with data from a total of 3,829 participants. We followed the methodological literature on SEM to select fit indices to report (Hu & Bentler, 1999; Steiger, 1990). We chose standardised root mean square residual (SRMR) as a typical absolute fit index and root mean square error of approximation (RMSEA) as a typical

TABLE 2
Means, Standard Deviations, and Correlations for the Study Variables

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Gender	1.55	.50										
2. Age	43.49	14.21	−.048**									
3. Education	3.43	1.52	−.051**	.072**								
4. Financial literacy	.28	.34	−.135**	.174**	.178**							
5. Physical exercise	2.75	1.47	.023	−.031*	.053**	.046**						
6. Healthy diet	4.29	.71	.169**	.196**	.135**	.109**	.171**					
7. Job fit	6.34	2.11	−.049**	.195**	.257**	.037*	.002	.102**				
8. Health satisfaction	3.78	.77	−.075**	−.135**	.068**	.056**	.146**	.061**	.038*			.
9. Job satisfaction	7.44	1.29	.017	.142**	.047*	.052**	−.008	.067**	.405**	.155**		
10. Financial satisfaction	6.22	1.59	−.002	.017	.120**	.117**	.069**	.128**	.172**	.270**	.330**	
11. Life satisfaction	5.05	1.11	.012	.002	.080**	.026	.081**	.144**	.152**	.381**	.336**	.465**

Notes: $N = 2{,}497 - 6{,}227$ (correlations were computed using pairwise deletion). $*p < .05$, $**p < .01$.

noncentrality-based index. Given that SRMR and RMSEA are both positively biased, especially with a low degree of freedom, we also report the Tucker-Lewis index (TLI) which is unbiased when parameters are added. These fit indices complement each other and offer a comprehensive yet parsimonious evaluation of goodness of fit. Empirical studies in applied psychology have widely reported this combination of indices in SEM analyses (e.g., Diefendorff & Richard, 2003; Ryan, West, & Carr, 2003).

Table 3 presents the results of our confirmatory factor analyses. First, we found that an eight-factor model, in which each latent variable corresponded to its items, displayed adequate fit to the data (χ^2 (712) = 9256.65, RMSEA = .04, TLI = .87, SRMR = .05). Second, we found that the above eight-factor model was superior over a few alternative models, including a six-factor model in which financial, job, and health satisfactions were loaded on one single factor ($\Delta\chi^2$ (13) = 11769.22, $p < .001$, RMSEA = .06, TLI = .69, SRMR = .10), a seven-factor model in which financial literacy and financial

TABLE 3
Confirmatory Factor Analyses

Model Description	$\Delta\chi^2$ (df) (compared to the eight-factor model)	RMSEA	TLI	SRMR
Eight-factor model: Financial literacy, job fit, physical exercise, healthy diet, financial satisfaction, job satisfaction, health satisfaction, and life satisfaction are independent factors.		.04	.87	.05
Six-factor model: Compared with the eight-factor model, three domain satisfactions are combined as one single factor.	11769.22*** (13)	.06	.69	.10
Seven-factor model: Compared with the eight-factor model, financial literacy and financial satisfaction are combined as one single factor.	5305.65*** (7)	.05	.79	.08
Seven-factor model: Compared with the eight-factor model, job fit and job satisfaction are combined as one single factor.	3086.41*** (7)	.04	.82	.06
Six-factor model: Compared with the eight-factor model, physical exercise, healthy diet, and health satisfaction are combined as one single factor.	7877.87*** (13)	.05	.75	.07

Notes: *** $p < .001$. We retained the eight-factor model as the optimal model.

satisfaction were loaded on one single factor ($\Delta\chi^2$ (7) = 5305.65, $p < .001$, RMSEA = .05, TLI = .79, SRMR = .08), a seven-factor model in which job fit and job satisfaction were loaded on one single factor ($\Delta\chi^2$ (7) = 3086.41, $p < .001$, RMSEA = .04, TLI = .82, SRMR = .06), and a six-factor model in which physical exercise, healthy diet and health satisfaction were loaded on one single factor ($\Delta\chi^2$ (13) = 7877.87, $p < .001$, RMSEA = .05, TLI = .75, SRMR = .07). These results indicated that the latent variables in our study were conceptually distinct.

Structural Model Testing

We first tested a structural model that incorporated the relationships described in the formal hypotheses and considered the mediated effects to be fully explained by the mediators (full mediation). In this model, education is a precursor to job fit, financial literacy, healthy diet and physical exercise. Job fit, as our central work-related proximal outcome of education, was specified to influence job satisfaction as well as financial and health satisfactions (because we wanted to control for the effects of financial and health satisfaction on life satisfaction when we later evaluated the effect of job satisfaction on life satisfaction). Financial satisfaction was predicted by financial literacy and health satisfaction by physical exercise and healthy diet. Finally, financial, job and health satisfactions were specified as predictors of general life satisfaction. The model displayed adequate fit to the data, χ^2 (866) = 11416.94, RMSEA = .05, TLI = .82, CFI = .83, SRMR = .06 (Hu & Bentler, 1999; Steiger, 1990).

Next, we tested a series of alternative models that added paths indicating direct effects successively to Model 1, starting with the direct effects of education on the three domain satisfactions (evaluating these direct effects allowed us to examine whether the data supported full or partial mediation for mediated effects such as that from education to job fit to job satisfaction). To decide which model to select among pairs of alternative models, we used the $\Delta\chi^2$ test. However, as this test is known to be very sensitive to large sample sizes (i.e., it shows even trivial differences as statistically significant when sample size is large, e.g., Cheung & Rensvold, 2002), we used the formula for computing the effect size for χ^2 (e.g., Rosenthal & DiMatteo, 2001) to compute the effect size for $\Delta\chi^2$ ($w = \Delta\chi^2/(N*\Delta df)$), and used Cohen's (1992) value of 0.1 as a cutoff for a small effect size (i.e., when w was smaller than 0.1 we retained the more parsimonious model). We also considered (and we report) other fit indices (e.g., RMSEA, TLI), but these fit indices indicated good fit for all the other models and showed little difference when comparing alternative models.

In all, we estimated 15 different models that added one or more direct paths, successively, starting from Model 1. In Table 4, we present the model fit indices for Model 1 (the full mediation model) and for three alternative models: a model where direct effects from education to the three domain satisfactions

TABLE 4
Full Mediation Model and Alternative Models

Model	Description	χ^2 (df)	RMSEA	TLI	CFI	SRMR	Model Comparison	$\Delta\chi^2$ (df)	w
1	*Model 1*: Full mediation model.	11416.94*** (866)	.05	.82	.83	.06	–	-	-
2	*Model 2*: Paths from education to three domain-specific satisfactions are added to Model 1.	11381.42*** (863)	.05	.82	.83	.06	Model 2 & 1	35.52*** (3)	.12
3	*Model 3*: Path from education to health satisfaction is removed from Model 2.	11384.02*** (864)	.05	.82	.83	.06	Model 3 & 2	2.60 (1)	.05
4	*Model 4*: Paths from financial literacy and from healthy diet to life satisfaction are added to Model 3.	11354.28*** (862)	.05	.82	.83	.06	Model 4 & 3	29.75*** (2)	.13

Notes: *** $p < .001$. We retained Model 4 as the final model with the best fit to the data.

were added (Model 2), a model similar to Model 2 but without the direct effect from education to health satisfaction because this effect was not significant in the previous model (Model 3), and a model that added paths from financial literacy and from healthy diet to life satisfaction (Model 4, which was the final model that we retained as the model with the best fit to the data). Figure 1 shows the final model retained and used for hypothesis testing (Model 4), along with its path coefficients and variance explained in the endogenous variable scores. We also used Model 4 to evaluate which of the mediations in our framework were partial and which were full (i.e., whether there was a significant direct effect in addition to the indirect effect through the mediators).

Hypothesis Testing

We tested our hypotheses using the parameters estimated in Model 4. To test the mediation hypotheses, we used the delta method. Unlike other methods of modelling indirect effect (e.g., Sobel test), the delta method does not require the covariance among continuous observed variables to be zero (MacKinnon, 2008). Given that the covariance terms are not zero under MLR, the delta method is appropriate. We estimated 95 per cent confidence intervals (CI) around the indirect effects; a CI excluding zero would provide support for mediation.

Hypothesis 1 posited an indirect effect of education on job satisfaction through job fit. Indeed, education had a significant relationship with job fit ($\beta = .25$, $p < .001$), which in turn had a significant relationship with job satisfaction ($\beta = .48$, $p < .001$). The association between education and job satisfaction was mediated by job fit (indirect effect = .117, 95% CI = [.094, .141]). Thus, Hypothesis 1 was supported.

Hypothesis 2 stated that there would be an indirect relationship between education and financial satisfaction via financial literacy. The relationship between education and financial literacy was positive and significant ($\beta = .15$, $p < .001$), and the relationship between financial literacy and financial satisfaction was also positive and significant ($\beta = .13$, $p < .001$). Moreover, the relationship between education and financial satisfaction through financial literacy was positive and distinguishable from zero (indirect effect = .020, 95% CI = [.013, .027]). Thus, Hypothesis 2 received support.

Hypothesis 3 was also supported, as education had significant relationships with both healthy diet ($\beta = .04$, $p = .012$) and physical exercise ($\beta = .07$, $p < .001$), and these two constructs in turn had significant relationships with health satisfaction ($\beta = .05$, $p = .006$, for healthy diet; $\beta = .18$, $p < .001$, for physical exercise). Both healthy diet (indirect effect = .002, 95% CI = [.000, .004]) and physical exercise (indirect effect = .013, 95% CI = [.006, .019]) mediated the relationship between education and health satisfaction.

TABLE 5
Indirect Effect, Direct Effect, and Total Effect in Mediated Relationships Based on
the Final Model (Model 4)

Mediation Path	Indirect Effect	95% CI	Direct Effect	Total Effect
Education-Job Fit-Job Satisfaction (H1)	.117	[.094, .141]	−.091***	.026
Education-Financial Literacy-Financial Satisfaction (H2)	.020	[.013, .027]	.045**	.122
Education-Healthy Diet-Health Satisfaction (H3a)	.002	[.000, .004]	0	.042
Education-Physical Exercise-Health Satisfaction (H3b)	.013	[.006, .019]		
Financial Literacy-Financial Satisfaction-Life Satisfaction	.052	[.037, .067]	−.041*	.011
Job Fit-Job Satisfaction-Life Satisfaction	.073	[.048, .098]	0	.194
Healthy Diet-Health Satisfaction-Life Satisfaction	.014	[.004, .024]	.078***	.092
Physical Exercise-Health Satisfaction-Life Satisfaction	.053	[.043, .073]	0	.053
Education-Financial Literacy-Financial Satisfaction-Life Satisfaction	.008	[.005, .011]	0	.061
Education-Job Fit-Job Satisfaction-Life Satisfaction	.018	[.011, .025]		
Education-Healthy Diet-Health Satisfaction-Life Satisfaction	.001	[.000, .001]		
Education-Physical Exercise-Health Satisfaction-Life Satisfaction	.004	[.002, .006]		

Notes: *p < .05. **p < .01. ***p < .001.
In some cases, the indirect effect and the direct effect do not add up to the total effect; this is because, in these cases, there are other indirect effects which are not presented in this table and were not hypothesised (for example, the direct effect of education on financial satisfaction and the indirect effect through financial literacy do not add up to the total effect, because there is another indirect path through job fit which is included in Model 4 but not presented here or hypothesised).

Finally, Hypothesis 4 was supported by the data. Job satisfaction ($\beta = .15$, $p < .001$), health satisfaction ($\beta = .29$, $p < .001$) and financial satisfaction ($\beta = .39$, $p < .001$) were all significant independent predictors of life satisfaction, showing sizable path coefficients. This finding shows that work-, health-, and economic-related well-being are all important in predicting life satisfaction and their effects do not completely overlap.

Although not formally hypothesised, our theoretical framework suggests indirect relationships between financial literacy, job fit, physical exercise and

healthy diet and life satisfaction through domain-specific satisfactions. Furthermore, our theorising and model imply that there should be a set of sequential mediation paths (e.g., a path from education to financial literacy, to financial satisfaction, and finally to life satisfaction). Indirect, direct, and total effects for these sequentially mediated relationships (and for our hypothesised mediated relationships) are summarised in Table 5.

DISCUSSION

We found that education contributed to increased job, financial, and health satisfactions through perceptual-, knowledge-, and behavioural-based mechanisms reflected in job fit, financial literacy, and healthy behaviours respectively. Furthermore, we found satisfaction with these three domains had independent effects in predicting life satisfaction, our end outcome. There were also some surprising findings; in the final model that we retained, education and financial literacy had small but significant negative direct effects ($-.09$ and $-.04$) on job satisfaction and life satisfaction, respectively. It is possible that these negative effects reflect social comparison processes, as it has long been known that more educated people are less satisfied with the same job outcomes than those less educated, presumably because of social comparisons that they make (see Freedman, 1978). Suggestively, Sweeney and McFarlin (2004) found that social comparisons based on education (e.g., "Compared to people with the same level of education or training as yourself...", p. 151) had a negative effect on income satisfaction in The Netherlands (controlling for income).[4] Nevertheless, our results concerning the hypothesised effects supported our expectations (and the significant non-hypothesised effects were smaller in magnitude compared to the effects that we hypothesised), and we believe these findings have important implications for theory and research on life satisfaction, for the development of conceptual models explaining how and why work influences employees' lives, and for practice and everyday life.

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[4] It is also possible that these negative direct effects are artifacts of the timing of the measurements. For example, if the correlation of job fit to job satisfaction is stronger than the correlation of education to job satisfaction because of the closer time proximity of the job fit and job satisfaction measurement, the negative direct effect of education on job satisfaction (partialling out job fit) would be at least somewhat spurious. To examine this possibility we determined that the correlation between education and job satisfaction would have to be $r = .111$ to render a direct effect of zero (instead of $-.09$). Comparing this correlation to the actual correlation of education and job satisfaction observed in the data ($r = .047$) suggests that the negative direct effect is not only a temporal artifact because it is unlikely that the additional year or two of measurement separation accounts for this rather large difference.

Implications for Theory and Research

Our study contributes to the subjective well-being literature in several ways. First, prior studies on the relationship between education and various conceptualisations of subjective well-being have examined the mediating roles of occupational prestige and income (Diener et al., 1993; Judge et al., 2010), and we believe we further contribute to this important stream of research. The current finding about the mediating role of person-job fit in the relationships between education and job satisfaction adds to our understanding of how education leads to job satisfaction and, through job satisfaction, further affects life satisfaction. Using data from a representative sample, we also found that educated individuals were more likely to experience job satisfaction because they enjoyed a better person-job fit. In fact, our findings suggest that the extent to which people successfully gravitate towards jobs that fit them (which is indicated by their perception of job fit) is influenced by their education. That is, we tested and found support for an indirect relationship from education to job fit to job satisfaction. We based this prediction on the argument that those who are more educated qualify for more specialised jobs which have the potential to offer them better fit (compared to the more general jobs for which those with lower education qualify). We recommend that future research examines this argument more closely by measuring job specialisation, and perhaps job complexity, and tests whether these factors mediate the effect of education on job fit (along with potential moderating effects).

Yet our theorising and suggestive findings can lead to more sophisticated tests of the gravitational hypothesis, perhaps more readily applicable to the study of person-organisation fit. If people are most successful in organisations that fit their personalities (Kristof-Brown et al., 2005) and if our speculation is correct, then those who are more educated would achieve higher person-organisation fit. We do not have the data to test this proposition, but we suggest that future research investigating the moderating effect of education (or perhaps general mental ability; Wilk et al., 1995) on the relationship between the degree of person-job or person-organisation fit and various outcomes would contribute to a more nuanced understanding of how successful different people are in gravitating towards satisfying jobs and organisations where they can thrive.

Second, not only did we find support for the mediated path through which education influenced life satisfaction through job fit and job satisfaction, but we found evidence of two other paths through health and financial satisfaction, which provides support for a bottom-up perspective on understanding life satisfaction whereby individuals' satisfactions with various aspects of their life, including work, add up to form their general life satisfaction. With respect to health satisfaction, by measuring various healthy behaviours such as exercise and diet, we respond to the call by Judge and colleagues (2010) to further

investigate the relationship between education and health-related behaviours. Our results suggest that those who are more educated tend to engage in healthier behaviour, which has real consequences for their well-being. Importantly, the effect of job satisfaction on life satisfaction was maintained when controlling for health and financial satisfaction, which attests to our thesis that work (job fit and job satisfaction) has a central role in determining individuals' general well-being.

Practical Implications

Our findings also hold important implications for employees as well as employers. First, we hope that our findings will encourage under-qualified employees to pursue further education when such opportunities are available, if they have the ability required for such higher education, rather than gravitate towards jobs where they would fit better according to their current level of education. Doing so would enable them to achieve optimal person-job fit, job satisfaction and enhanced subjective well-being. According to a 2014 survey by *The Financial Times*, 41 per cent of 1,100 companies indicated that they would increase spending on executive education over the next three years, such as sending employees to Masters of Business Administration programs. Given the importance of education for various life domains, employees should consider these opportunities for further education carefully and try to utilise them instead of viewing them as a distraction from work. Of course, employers should be mindful that with increased education they should also offer opportunities for advancement to maximise the job fit and satisfaction of the more educated employees.

Second, given the positive association between education and health-related behaviours, employers can take education into consideration when designing employee assistance programmes. This is useful because it can potentially help employers reduce the costs in employee healthcare. By no means are we encouraging employers to discriminate against candidates with lower education levels. In fact, perhaps targeted health and lifestyle education programmes (e.g., educational workshops about the benefits of healthy behaviours and exercise, gym memberships, etc.) could very well offset a lower level of general education and, as our findings suggest, result in employees who are more satisfied with their lives in general. Similarly, offering financial education programmes could result in happier employees, perhaps leading to higher retention rates as people would be less likely to simply try to get a better paying job. In a more general sense, our findings clearly suggest that the predictive power of education goes well beyond job performance.

Limitations

Like all studies, ours has limitations that are worth mentioning and that can perhaps inform future research. First, we were limited by the measures

available in the LISS panel survey. For example, it would have been ideal to have a more comprehensive measure of person-job fit along with measures of person-vocation or person-organisation fit (Kristof-Brown et al., 2005) to be able to differentiate the effects of education on these different types of person-environment fit. Also, as we noted in the introduction, it is possible that GMA explains part of the effects of education on other constructs in our model (e.g., financial literacy). Yet a measure of GMA was not available to us. Thus, we recommend that future research controls for GMA in testing the effects of education on well-being. It is also possible that some participants increased their education over the course of the study and such increases may have influenced linkages between education and other variables. However, participants' education was only assessed in 2009 and thus we could not examine this possibility. Second, although we based our main theoretical argument on the gravitational hypothesis, we did not assess job changes. In fact, as we noted in the method section, our analyses are cross-sectional and thus our findings do not speak to changes over time in any of the constructs included in our model. As a result, we cannot draw temporally based causal inferences based on these findings. Nevertheless, our large sample of representative employees gives us some confidence in our findings.

   Third, related to the cross-sectional nature of our analyses, all of our measures were self-reported, which raises the question of whether same-source bias explains or inflates some of the relationships in our model. However, given that constructs that are not expected to be related exhibited virtually zero correlations (e.g., between physical exercise and job satisfaction), coupled with the separation of measures over four different years and the objectivity of certain measures (e.g., financial literacy was essentially measured with a test), this concern should be mitigated to some extent. Fourth, as noted in the section on our analytical strategy, the temporal order of the measurements in our study is confounded with the causal ordering of the constructs in our model. Therefore we recommend that future research using a cross-lagged design (repeated measures of all constructs) further tests the relationships that we documented herein. Last, the data were collected in the Netherlands, which may limit the generalisability of the findings to the United States or other countries. However, the data come from a nationally representative large sample, which suggests that our findings are not limited to specific educational levels or occupational groups.

Conclusion

By proposing and testing an integrative model that explicates distinct paths from education to life satisfaction through three domain satisfactions (i.e., job, financial, and health satisfaction), we believe the present study adds to the body of research on individual differences in well-being. Importantly, this

study includes mediating mechanisms (i.e., job fit, financial knowledge and proactive healthy behaviours) that explain the effects of education on domain satisfactions, which may suggest potential interventions aiming to improve various aspects of well-being. Furthermore, building on the need fulfilment approach to examining job and life satisfaction (Erdogan et al., 2012), our findings shed light on a novel mechanism that links education to job satisfaction through job fit and further to general well-being.

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