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Global Life Satisfaction in Adolescence

The Role of Personality Traits, Self-Esteem, and Self-Efficacy

Jenny Marcionetti¹ and Jérôme Rossier²

¹Department of Education and Learning, University of Applied Sciences and Arts of Southern Switzerland, Locarno, Switzerland

²Institute of Psychology, University of Lausanne, Switzerland

Abstract: Positive levels of global life satisfaction are associated with a broad range of positive personal, psychological, and social outcomes both in the present and future. However, for adolescents, little is known about the underlying personal characteristics that predict global life satisfaction. Thus, the aim of the study was to investigate the relationship between personality traits, self-esteem, self-efficacy, and global life satisfaction in a sample of 437 Swiss adolescents attending the second last year of compulsory school. Results have shown that conscientiousness, neuroticism, extraversion, self-esteem, and self-efficacy are significantly associated with global life satisfaction. Moreover, self-esteem seems to be a mediator of the relationship between personality traits and global life satisfaction, suggesting that it might be considered as a process variable regulating behaviors, feelings, and thoughts that are related to personality dimensions.

Keywords: adolescence, global life satisfaction, personality, self-esteem, self-efficacy

For adolescents who have to cope with forthcoming life changes induced by their transition to post-compulsory education, being satisfied with their lives is an important resource upon which they can build and plan their future life (Bowman, 2010). For instance, high levels of life satisfaction during the transition from compulsory school to upper secondary education were found to predict academic and school engagement in post-compulsory academic education and vocational training (Salmela-Aro & Tuominen-Soini, 2010). In fact, global life satisfaction is associated with a broad range of positive personal, psychological, and social outcomes both during adolescence (Proctor, Linley, & Maltby, 2009) and adulthood (DeNeve & Cooper, 1998). Global life satisfaction is the cognitive component of subjective well-being and is defined as an individual's appraisal of the overall quality of his or her life (Diener, 1984). Compared to the other components of subjective well-being (i.e., positive and negative affects) global life satisfaction is less influenced by mood states and changes less quickly to life events (Diener, Suh, Lucas, & Smith, 1999).

Despite an increasing interest in studying global life satisfaction, little is known about the predictors of adolescent's life satisfaction. In particular, the association between the five-factor model of personality traits and life satisfaction has been well documented in adults (for a

review see Steel, Schmidt, & Shultz, 2008) but remains only partially investigated in adolescents. In fact, in their literature review, Proctor et al. (2009) reported only four studies on adolescents, and all were limited on the relationships between neuroticism, extraversion, and life satisfaction. Recently, three more studies were performed, which considered also openness, agreeableness, and conscientiousness (Garcia, 2011; Suldo, Minch, & Hearon, 2015; Weber & Huebner, 2015). Moreover, possible mediators of these relationships should be further examined, with some studies suggesting that self-esteem (Furnham & Cheng, 2000; Kwan, Bond, & Singelis, 1997) and self-efficacy (Strobel, Tumasjan, & Spoörrle, 2011) could be potential candidates. Testing these effects could be of interest, given that as suggested by Rossier (2015a), mediation effects could be the result of a regulation process, which allows adapting the expression of relatively stable dispositions to changing social expectations and evolving environments. The first aim of this research was to study the respective contribution of personality traits, considering all the main dimensions of the five-factor model, self-esteem, and self-efficacy to global life satisfaction in adolescents. The second aim of our research was to test if self-esteem and/or self-efficacy mediate the relationship between personality traits and global life satisfaction.

Personality Traits, Subjective Well-being, and Global Life Satisfaction

Many studies have provided extensive evidence of associations between personality traits and life satisfaction in adults (DeNeve & Cooper, 1998; Steel et al., 2008). Indeed, the meta-analyses by DeNeve and Cooper (1998) showed that the strongest correlation with life satisfaction for adults was a negative one with neuroticism ($-.24$), followed by positive ones with conscientiousness (.22), extraversion (.17), agreeableness (.16), and openness to experience (.14), whereas the review by Steel et al. (2008) found the strongest correlations with, respectively, neuroticism ($-.38$) and extraversion (.28), followed by conscientiousness (.22), agreeableness (.14), and openness to experience (.03). In youth, neuroticism and extraversion were found to predict mental well-being and life satisfaction 40 years later (Gale, Booth, Möttus, Kuh, & Deary, 2013). In a population of undergraduate students, Jovanovic (2010) found that neuroticism seems to be a slightly weaker predictor of global life satisfaction, the cognitive component of subjective well-being, compared to its contribution to the affective component (i.e., positive and negative affects). The review by Proctor et al. (2009) concerning youths' life satisfaction, found that only a few studies have considered the associations between personality traits and life satisfaction in adolescents (for instance, Fogle, Huebner, & Laughlin, 2002), and among these rare studies, all focused on the neuroticism and extraversion dimensions.

Recently, three studies analyzed the relationships between all five personality traits and life satisfaction in adolescents. In a Swedish sample of adolescents, Garcia (2011) observed that neuroticism ($\beta = -.37$) and extraversion ($\beta = .34$) predicted life satisfaction whereas conscientiousness predicted rather global psychological well-being ($\beta = .32$). No relationship was observed between agreeableness and openness to experience and subjective well-being or psychological well-being. Suldo et al. (2015) recently conducted a study on the relationship between the five-factor model of personality traits and global life satisfaction in a sample of southeastern American high school students. They found that personality globally accounted for 47% of the variance of global life satisfaction. In their study, four personality traits emerged as significant predictors, neuroticism being the strongest ($\beta = -.59$), followed by conscientiousness ($\beta = .12$), extraversion ($\beta = .10$), and agreeableness ($\beta = .08$). Finally, the study by Weber and Huebner (2015) confirmed the important role played by neuroticism ($\beta = -.38$), followed by conscientiousness ($\beta = .22$), agreeableness ($\beta = .13$), and extraversion ($\beta = .10$) in predicting southeastern American 7th grade students' life satisfaction. Personality traits are therefore clearly associated with adolescents' global life satisfaction. However, results

highlight some differences in the proportion of variance explained by single dimensions and studies conducted in other cultural settings could give an idea about the generalizability of these results. Moreover, it would be interesting to further study if the impact of personality traits is mediated by some other variables such as self-esteem and general self-efficacy as suggested in the results obtained by Furnham and Cheng (2000), Kwan et al. (1997), and Strobel et al. (2011).

Self-Esteem and Global Life Satisfaction

Self-esteem refers to the subjective and emotional evaluation of one's own worth and includes self-acceptance and self-respect (Rosenberg, 1965), and therefore tends to capture an affective evaluation of the self (Chen, Gully, & Eden, 2001). Self-esteem was shown to be strongly associated with life satisfaction for adults (see Baumeister, Campbell, Krueger, & Vohs, 2003 for a review) and adolescents (Dew & Huebner, 1994; Diener & Diener, 1995; Furnham & Cheng, 2000). Coopersmith (1967) showed that children and adolescents with high levels of academic self-esteem tend to be more exploratory, persevering, and active participants in their academic environment, and the literature review by Baumeister et al. (2003) highlighted that individuals high in self-esteem seem to have a more wise and prudent persistence at tasks. Finally, Aunola, Stattin, and Nurmi (2000) found an association between low self-esteem and the use of maladaptive academic achievement strategies. These results seem to support the notion that individuals who perceive high self-esteem apply more adaptive self-regulatory strategies than individuals having low self-esteem (Baumeister et al., 2003). These strategies may in fact influence their higher levels of reported satisfaction with life. Moreover, some studies found that self-esteem is a full mediator of the relationship between the conscientiousness and agreeableness traits of personality, and global life satisfaction; and a partial mediator of the relationship between extraversion and neuroticism, and global life satisfaction (Furnham & Cheng, 2000; Kwan et al., 1997).

General Self-Efficacy and Global Life Satisfaction

General self-efficacy, which was also shown to be strongly associated with life satisfaction for adults (Judge, Locke, Durham, & Kluger, 1998) and adolescents (Bradley & Corwyn, 2004; Suldo & Huebner, 2006), is defined as "one's estimate of one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise general control over events in one's life"

(Judge et al., 1998, p. 19). General self-efficacy captures beliefs regarding task-specific capabilities and can therefore strengthen or weaken motivation (Chen et al., 2001). Thus people with high general self-efficacy beliefs can choose to perform more challenging tasks, set themselves higher goals, and be more perseverant (Bandura, 1997), whereas adolescents or young adults having low self-efficacy beliefs may be more likely to use self-handicapping strategies, such as avoiding test situations at school or work (Pulford, Johnson, & Awaida, 2005). Moreover, the study conducted by Strobel et al. (2011) seems to indicate self-efficacy as a possible mediator of the effects of neuroticism, extraversion, openness, and conscientiousness on global life satisfaction.

The Present Study

The literature suggests that personality traits, self-esteem, and general self-efficacy are predictors of global life satisfaction both in adults and in adolescents. However, given the few studies conducted that analyze all five personality traits in association with global life satisfaction, it is not clear for adolescents, which specific personality traits affect global life satisfaction and whether these traits have a direct or indirect effect. Moreover, some rare studies suggest that self-esteem and general self-efficacy could mediate the relationship between personality traits and global life satisfaction. Therefore, the first aim of this study was to verify the effects of personality traits, self-esteem, and general self-efficacy on adolescents' global life satisfaction, and the second aim was to test a model in which self-esteem and self-efficacy act as full or partial mediators of the relationship between personality traits and global life satisfaction. Given the fact that no other studies were done so far on this issue on an Italian-speaking sample of Swiss adolescents, this research is fundamentally exploratory in nature. However, results on other adolescents' samples permitted to delineate some assumptions. More precisely, as already observed in the US and in Sweden, we expected neuroticism, extraversion, and conscientiousness to have the strongest relationships with global life satisfaction. We also expected to find strong associations between both self-esteem and self-efficacy, and global life satisfaction. Finally, as suggested by some scarce studies, we assumed that self-esteem and self-efficacy would fully or partially mediate the effect of some personality traits on global life satisfaction.

Method

Participants and Procedure

The study was conducted in the Swiss state of Ticino, where Italian is the official language. The total sample consisted of

437 students, 204 girls and 233 boys. The sample represented about one-sixth of the total population of students in the second last year of compulsory school (Rigoni, 2013) and can be considered as quite representative of the students of that age and of that state of Switzerland. Their age ranged from 12 to 16 years, with a mean age of 13.37 years and a standard deviation of 0.61. Most students were 13 years old ($n = 298$). Three hundred sixteen were Swiss and 121 non-Swiss.

Students of that specific academic year from seven middle schools of the state of Ticino were invited to answer an online questionnaire in an IT classroom in the presence of the first author. Students who had difficulties in understanding some questions could ask the researcher for additional explanations. This research complied with the ethical rules of the Swiss Society of Psychology.

Measures

Satisfaction With Life Scale

The Italian version of the Satisfaction with Life (SWL) Scale (Diener, Emmons, Larsen, & Griffin, 1985; Di Fabio & Palazzeschi, 2012) was used. This 5-item scale measures the global cognitive judgment of satisfaction with one's life using a 7-point Likert-type response scale ranging from 1 (= *strongly disagree*) to 7 (= *strongly agree*). Cronbach's alpha was .87 for the original English scale (Diener et al., 1985) and .88 for the Italian scale (Di Fabio & Palazzeschi, 2012).

NEO Five-Factor Inventory-3

To assess personality traits, the Italian version of the NEO Five-Factor Inventory-3 (NEO-FFI-3; McCrae & Costa, 2010; Terracciano, 2003) was used. This questionnaire is a brief version of the Italian version of the revised NEO Personality Inventory-3. The NEO-FFI-3 is a 60-item questionnaire that assesses the five main personality dimensions of the Five-Factor Model: Neuroticism (N), extraversion (E), openness to experience (O), agreeableness (A), and conscientiousness (C). The response scale is a 5-point Likert-type scale ranging from 1 (= *strongly disagree*) to 5 (= *strongly agree*). Cronbach's alphas reported by McCrae and Costa (2010) were, respectively, .79, .79, .80, .75, and .83 for N, E, O, A, and C. However, Caruso (2000) reported slightly lower values for some scales, in particular O and A.

Rosenberg Self-Esteem Scale

To assess self-esteem, the Italian version of the Rosenberg Self-Esteem Scale (RSES) was used (Prezza, Trombaccia, & Armento, 1997; Rosenberg, 1965). The scale consists of 10 items, rated using a 4-point Likert-type scale ranging from 1 (= *strongly disagree*) to 4 (= *strongly agree*). Cronbach's alpha of the original English scale, as well of the validated Italian version, was .84.

General Self-Efficacy Scale

To measure self-efficacy, the Italian version of the General Self-Efficacy (GSE) Scale was used (Schwarzer & Jerusalem, 1995; Sibilis, Schwarzer, & Jerusalem, 1995). This unidimensional scale contains 10 items, rated using a 4-point Likert-type scale ranging from 1 (= *not at all true*) to 4 (= *exactly true*). Validated in a sample of 23 countries, Cronbach's alphas ranged from .75 to .91, with the majority in the high .80s. The Italian version has psychometric qualities similar to the English one (Scholz, Gutiérrez-Doña, Sud, & Schwarzer, 2002).

Data Analysis

Scale internal consistencies were measured using Cronbach's alpha. Correlation analyses were performed to describe the relationships between all the considered variables. These variables were then included in hierarchical multiple regression analyses in order to test the single, as well as the overall effect of demographic variables, personality traits, and self-evaluation processes on global life satisfaction. These hierarchical regressions identified the variables that had a unique direct effect on global life satisfaction that were then included in the overall mediation model. Indeed, a direct association is a prerequisite for standard mediation analyses (Baron & Kenny, 1986). Path analysis using SEM was computed using the AMOS (Arbuckle, 2012) statistical package. The χ^2 per degree of freedom (χ^2/df), the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA) were used to assess the model fit. According to literature, a model is considered to have a satisfactory fit if the χ^2/df is lower than 3, if the GFI, CFI, and TLI values are about .90 or above (Medsker, Williams, & Holahan, 1994), and if the RMSEA is about .05 or less (RMSEA of about .08 or less being acceptable, Byrne, 2001). Finally, using bootstrapping on 5,000 samples we estimated the 95% confidence intervals for the direct, simple indirect, and total indirect mediation effects. Specific indirect effects were computed using the phantom model approach (Macho & Ledermann, 2011).

Results

In a first step, Cronbach's alpha coefficients and correlations between gender, nationality, the five personality traits, self-esteem, self-efficacy, and global life satisfaction were computed. As can be seen from Table 1, the internal reliabilities were all above the threshold of .60 (Kline, 1999), except openness (.58). Significant positive correlations were found between global life satisfaction and self-esteem,

self-efficacy, extraversion, openness to experience, agreeableness, and conscientiousness, whereas a moderate negative correlation was found between global life satisfaction and neuroticism (see Table 1). Self-esteem and self-efficacy (with the exception of self-efficacy with agreeableness) were both correlated with all personality traits, and especially negatively with neuroticism and positively with conscientiousness. Some gender differences were also observed: girls scored higher than boys on all personality traits except conscientiousness, whereas they scored lower on self-esteem. Being Swiss or non-Swiss had no impact. To assess what the correlations would look like without measurement errors, we recomputed correlations correcting for attenuation. As expected, correlations were associated with slightly larger effects-sizes but the pattern of associations was similar with conscientiousness ($r = .60$) and neuroticism ($r = -.37$) having the strongest associations with global life satisfaction, followed by extraversion, openness to experience, and agreeableness with a r of .36, .27, and .21, respectively.

To measure the effect of demographic variables, personality traits, self-esteem, and self-efficacy on global life satisfaction, two hierarchical linear multiple regressions were computed (see Table 2). In a first hierarchical regression, demographic variables were added in the first step, personality traits were added in the second step, and the third step included self-esteem and general self-efficacy. In the second hierarchical regression, step 2 and step 3 were inverted: self-esteem and self-efficacy were added in the second step and personality traits in the third step.

Demographic variables explained 1% of global life satisfaction's variance. The second step of both hierarchical regressions (involving, respectively, personality traits or self-esteem and self-efficacy) explained 27% of global life satisfaction's variance. At this level, neuroticism, extraversion, and conscientiousness, and self-esteem and general self-efficacy were found to significantly explain variance in global life satisfaction. The complete model involving the three steps explained 35% of the variance of global life satisfaction. In this last model, only conscientiousness, self-esteem, and self-efficacy were found to significantly predict global life satisfaction. Considering that neuroticism, extraversion, and conscientiousness were related to global life satisfaction, self-esteem, and general self-efficacy, and that self-esteem and general self-efficacy were related to life satisfaction after controlling for the three personality traits, the hierarchical regressions performed suggested that self-esteem and general self-efficacy might partially or fully mediate the relationship between personality traits and life satisfaction.

Path analysis was then conducted to assess the direct and indirect effects of the three personality traits that had a unique contribution to global life satisfaction considering

Table 1. Means, standard deviations, reliabilities, and correlations

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Life satisfaction	24.39	6.22	(.85)									
2. Gender	–	–	.01	–								
3. Nationality	–	–	.09	–.05	–							
4. Self-esteem	29.27	4.95	.49***	–.16**	.07	(.82)						
5. Self-efficacy	28.41	4.47	.36***	–.00	.03	.39***	(.83)					
6. Neuroticism	25.43	6.15	–.28***	.25***	.07	–.50***	–.30***	(.67)				
7. Extraversion	29.35	5.30	.26***	.18***	–.03	.27***	.33***	–.13**	(.63)			
8. Openness	27.27	5.22	.19***	.13**	.05	.19***	.34***	–.01	.34***	(.58)		
9. Agreeableness	27.61	5.81	.16**	.25***	.02	.13**	.05	–.17***	.25***	.17***	(.67)	
10. Conscientiousness	27.42	6.36	.49***	.07	–.00	.47***	.43***	–.30***	.32***	.34***	.23***	(.78)

Notes. Gender: 0 = Boy, 1 = Girl; Nationality: 0 = Non-Swiss, 1 = Swiss. Gender and Nationality were dichotomous variables and for this reason Spearman's rhos were computed for these variables. In parentheses, Cronbach's alpha coefficients are reported for each scale. ***p* < .01. ****p* < .001.

Table 2. Hierarchical multiple linear regression analyses predicting global life satisfaction

Variables	Step 1 of regressions 1 and 2			Step 2 of regression 1			Step 2 of regression 2			Step 3 of regressions 1 and 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Gender	0.19	0.60	.02	–0.12	0.56	–.01	1.01	0.52	.08	0.31	0.54	.03
Nationality	1.12	0.67	.08	1.01	0.57	.07	0.69	0.57	.05	0.84	0.55	.06
Neuroticism				–0.13	0.05	–.13**				0.00	0.05	.00
Extraversion				0.13	0.05	.11*				0.07	0.05	.06
Openness				0.00	0.06	–.00				–0.04	0.05	–.04
Agreeableness				0.02	0.05	.02				0.04	0.05	.03
Conscientiousness				0.41	0.05	.42***				0.29	0.05	.29***
Self-esteem							0.54	0.06	.43***	0.38	0.06	.31***
Self-efficacy							0.26	0.06	.19***	0.15	0.07	.11*
Total <i>R</i> ²			.01			.28			.28			.35
ΔR^2						.27			.27			.07
<i>F</i>		1.43			23.85***			42.99***			25.60***	

Notes. Total *R*², ΔR^2 , and *F* always refer to results obtained when the last step reported in the column is added to the model. **p* < .05, ***p* < .01, ****p* < .001.

self-esteem and self-efficacy as potential mediators. To avoid the negative impact of the relatively low loadings of some personality items on their respective latent variable, we created four homogeneous parcels per personality scale. This was done in pairing items with the highest correlations and then using the mean score of the three items (Rogers & Schmitt, 2004). After applying this technique, standardized parcel weights ranged from .45 to .72 for E, from .51 to .76 for N, and from .69 to .76 for C. The models proved to fit the data well, with CFI and TLI above .95, RMSEA between .01 and .07, and χ^2/df lower than 3. Finally to further simplify the model, we used the mean score of the self-esteem and self-efficacy scales as

suggested by Kline (1998). In AMOS, this was performed adding an exogenously observed variable with a path fixed to one, in order to ensure that the AMOS software did not treat the endogenous variables (mediators) as residual or exogenous variables associated with some other latent variables (neuroticism, extraversion, or conscientiousness). The model tested (Figure 1) adequately fitted the data, $\chi^2/df = 2.19$, CFI = .94, TLI = .93, and RMSEA = .05. Standardized coefficient estimates showed that both extraversion and self-efficacy do not have any direct impact on global life satisfaction, that extraversion does not directly affect self-esteem, that neuroticism does not directly affect global life satisfaction, and that there is no covariation of

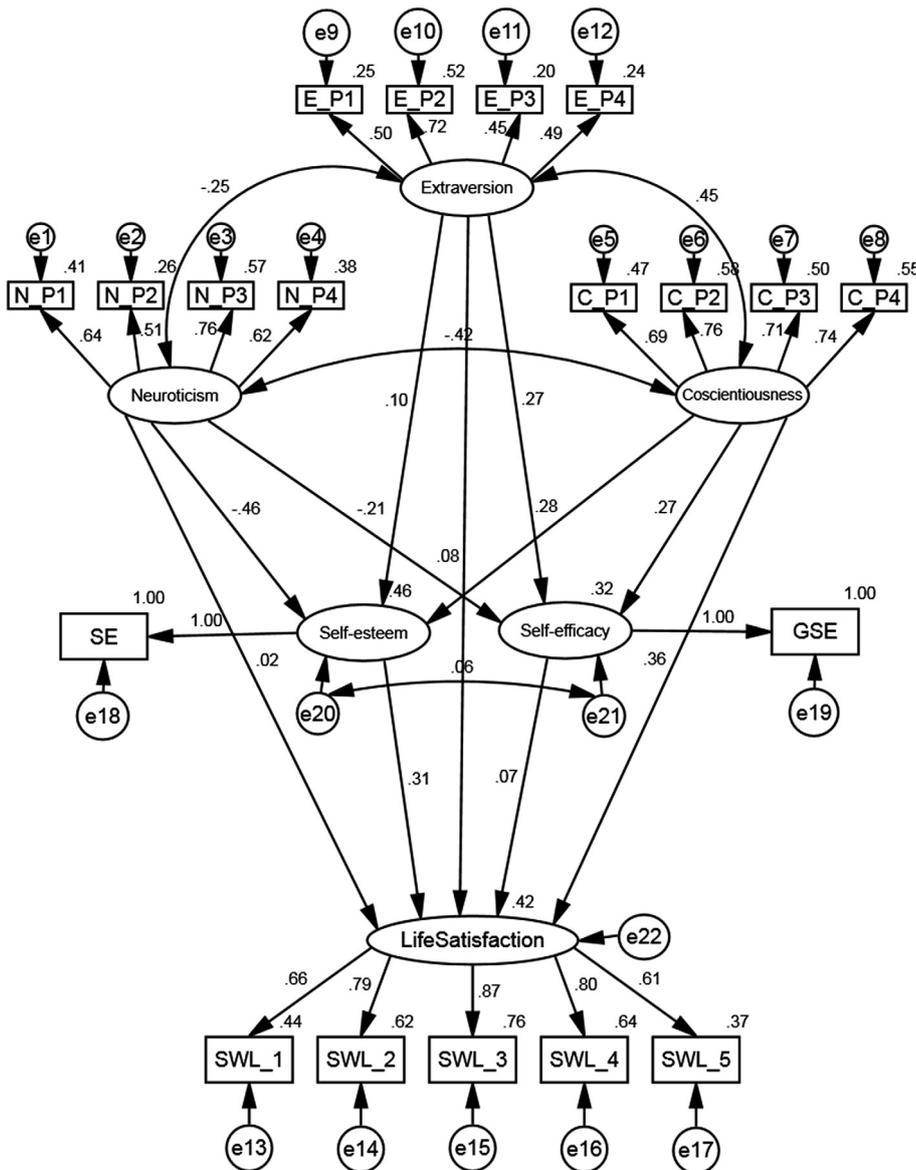


Figure 1. Structural equation model with standardized coefficient estimates.

self-esteem and self-efficacy (see Figure 1). Therefore, self-efficacy does not seem to mediate the effect of the three personality traits on global life satisfaction, whereas self-esteem seems to partially mediate the impact of conscientiousness on global life satisfaction and to fully mediate the impact of neuroticism on global life satisfaction.

To more precisely analyze the relationships between the variables of our model, we performed bootstrapping on 5,000 samples to obtain point estimates, standard errors, and confidence intervals of the direct and indirect effects of conscientiousness, neuroticism, and extraversion on global life satisfaction. The results of these analyses are provided in Table 3 and confirm the significance of the direct effect of conscientiousness on global life satisfaction and the indirect effects of conscientiousness and

neuroticism on global life satisfaction. While no significant direct effect of extraversion on global life satisfaction was found, an indirect effect was detected. Estimation of the simple indirect effects confirmed that also for extraversion, the indirect effect on global life satisfaction is mediated by self-esteem.

Discussion

Considering that previous studies have shown that global life satisfaction is related to the overall quality of life not only in the present but also in the future (Diener & Chan, 2011), the study of the individual characteristics underlying adolescents' global life satisfaction is of importance. In line

Table 3. Estimated effects and 95% bootstrapped confidence intervals for direct and indirect effects of C, N, and E on global life satisfaction

Effect	Contrast being tested	Value ^a	95% Bias-corrected CI	
			LL	UL
1	Direct effect of C on GLS	0.279	0.169	0.410
2	Direct effect of N on GLS	0.021	-0.116	0.149
3	Direct effect of E on GLS	0.102	-0.090	0.295
4	Total indirect effect of C on GLS	0.081	0.032	0.147
5	Total indirect effect of N on GLS	-0.133	-0.225	-0.070
6	Total indirect effect of E on GLS	0.064	0.001	0.154
7	Simple indirect effect of C on GLS through self-esteem	0.067	0.023	0.121
8	Simple indirect effect of N on GLS through self-esteem	-0.122	-0.206	-0.061
9	Simple indirect effect of E on GLS through self-esteem	0.041	0.001	0.009
10	Simple indirect effect of C on GLS through self-efficacy	0.013	-0.012	0.053
11	Simple indirect effect of N on GLS through self-efficacy	-0.012	-0.043	0.011
12	Simple indirect effect of E on GLS through self-efficacy	0.022	-0.022	0.087

Notes. GLS = Global life satisfaction; C = Conscientiousness; N = Neuroticism; E = Extraversion; CI = Confidence interval; LL = Lower limit; UL = Upper limit.

^aUnstandardized estimate of the effect obtained with the Maximum Likelihood procedure.

with previous findings, we observed that conscientiousness, neuroticism, extraversion, and self-esteem globally make a strong contribution to global life satisfaction. Moreover, we found that self-esteem seems to mediate the relationship between these personality traits and global life satisfaction, suggesting that self-esteem might be an especially important process to consider in adolescents.

The present study confirms that only specific personality traits are directly associated with global life satisfaction as reported by Steel et al. (2008) in their literature review. The results of the present study are however slightly different. In our study, only conscientiousness had a direct effect, whereas neuroticism and extraversion had indirect effects on global life satisfaction. Another difference is in the small contribution of neuroticism, compared to the large one of conscientiousness on global life satisfaction observed in this study. This result could be partly attributed to the better reliability of the conscientiousness scale. However, as suggested by Judge and Ilies (2002), the relationship between conscientiousness and global life satisfaction might be due to the fact that this personality domain is linked with overall motivation (Judge & Ilies, 2002), which leads conscientious individuals to be more efficient and perseverant (McGregor & Little, 1998). This in turn has a positive impact on global life satisfaction (DeNeve & Cooper, 1998). In fact, these associations could be even stronger during adolescence, when motivation to succeed at school has an important impact on personal identity but is also a crucial resource to manage the first vocational transition to vocational training or higher education, one of the most challenging life situations that adolescents face. It is important to note that in Switzerland about two-thirds of the adolescents will choose vocational training and that in this case they have to make their first career choice very

early. Moreover, adolescents have to apply for an apprenticeship in the open labor market and their school grades will have a strong impact on the choices or opportunities they will concretely have. For these reasons, the strength of the association between conscientiousness and global life satisfaction could be age- and vocational education system-specific. Concerning the slightly weaker contribution of neuroticism, this seems to be in line with the results of Jovanovic (2010) conducted with Serbian undergraduate students, who found neuroticism to be a better predictor of the affective component of subjective well-being, rather than the cognitive one. With regard to the indirect effect of extraversion observed in this research, other studies reported similar results in adults. Some studies found an indirect effect of extraversion on subjective well-being through intrinsic goal importance in a group of older adults (Gomez, Allemand, & Grob, 2012) and through social self-efficacy for students (Fogle et al., 2002).

In our study, self-esteem played an especially important role, by having an important direct effect, along with conscientiousness, and by mediating the effect of neuroticism and extraversion. Notably, only very few studies have considered self-esteem as a possible mediator and most studies on the impact of personality on global life satisfaction were conducted with adults, even if interest in adolescents seems to have recently increased. This study not only confirms the results of some previous studies (i.e., Suldo & Huebner, 2006) but also emphasizes the importance of self-esteem for adolescents. The differences according to the impact of personality traits and the mediators considered, as already said, could not only be due to the age group studied but also to the cultural setting, considering that culture is known for having an impact on this relationship (Bradley & Corwyn, 2004; Pulford et al., 2005).

The important effect of self-esteem on global life satisfaction, and the absence of an association between self-efficacy and global life satisfaction, could indicate that in adolescence the acceptance or respect individuals have for themselves has more of an impact on their global life satisfaction than the perception of their capabilities and resources to exercise control over their life. Importantly, for some authors self-esteem and self-efficacy are very similar and for others self-efficacy might be a component of self-esteem (Judge, Erez, Bono, & Thoresen, 2002). If we consider that self-esteem refers to the subjective and emotional evaluation of one's own worth and includes self-acceptance and self-respect, it is interesting to note that it mediates the two personality traits, neuroticism and extraversion, that are associated, respectively, with negative and positive affectivity (Revelle & Scherer, 2009).

This research investigated the respective contributions of personality traits, self-esteem, and self-efficacy on global life satisfaction in order to better understand the contributions and functions of stable and processual individual characteristics in adolescents. Although the results are encouraging, this study has several limitations. Firstly, the cross-sectional nature of the study does not allow us to draw any conclusion considering causal relationships. Secondly, reliability of the openness to experience scale, in particular, is slightly low. A third limitation is that the sample is somewhat representative of only one linguistic region of Switzerland. Future studies could adopt a longitudinal and multi-centric approach, in order to describe more precisely the causal relationships and the impact of the cultural setting. Moreover, given the exploratory nature of this research, it would be useful to replicate the study on bigger samples of Swiss-Italian adolescents, permitting also to assess possible age and vocational education system differences. Future studies might also benefit from the use of a longer/more comprehensive personality inventory.

To conclude, consistent with the results of Diener and Seligman (2002) in their study with adults, and with those of Suldo and Huebner (2006) in their study with adolescents, global life satisfaction seems to stem from a combination of multiple elements. Nevertheless, some components seem to be more essential than others. In this study, the conscientiousness personality dimension and self-esteem had the strongest associations with global life satisfaction. These results are consistent with those of the study of Salmela-Aro and Tuominen-Soini (2010) which showed that global life satisfaction during the transition from compulsory school to academic or vocational training is predicted by adolescents' academic achievement and self-esteem, which, in turn, were found to be related to conscientiousness (for a review see De Raad & Schouwenburg, 1996). Moreover, the mediator role of self-esteem between personality traits and global life satisfaction is consistent

with the conceptualization suggested by Rossier (2015a, 2015b), who argues that self-regulatory processes mediate the expression of stable dispositions such as personality traits. Self-esteem seems to mediate the impact of personality traits related with emotions. Thus preventive health and well-being promotion efforts, psychosocial interventions, vocational guidance, and career interventions might be aimed at also increasing these personal "resources," which could increase global life satisfaction levels and decrease the risk of entering in a vicious circle that lowers global life satisfaction consistently.

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References

- Arbuckle, J. L. (2012). *IBM SPSS Amos 21 user's guide*. Chicago, IL: SPSS.
- Aunola, K., Stattin, H., & Nurmi, J.-E. (2000). Adolescents' achievement strategies, school adjustment, and externalizing and internalizing problem behaviors. *Journal of Youth and Adolescence*, 29, 289–306. doi: 10.1023/A:1005143607919
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173–1182. doi: 10.1037/0022-3514.51.6.1173
- Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest*, 1, 1–44. doi: 10.1111/1529-1006.01431
- Bowman, N. A. (2010). The development of psychological well-being among first-year college students. *Journal of College Student Development*, 51, 180–200. doi: 10.1353/csd.0.0118
- Bradley, R. H., & Corwyn, R. F. (2004). Life satisfaction among European American, African American, Chinese American, Mexican American, and Dominican American adolescents. *International Journal of Behavioral Development*, 28, 385–400. doi: 10.1080/01650250444000072
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Erlbaum.
- Caruso, J. C. (2000). Reliability generalization of the NEO personality scales. *Educational and Psychological Measurement*, 60, 236–254. doi: 10.1177/00131640021970484
- Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational Research Methods*, 4, 62–63. doi: 10.1177/109442810141004

- Coopersmith, S. (1967). *The antecedents of self-esteem*. San Francisco, CA: Freeman.
- DeNeve, K. M., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin*, *124*, 197–229. doi: 10.1037/0033-2909.124.2.197
- De Raad, B., & Schouwenburg, H. C. (1996). Personality in learning and education: A review. *European Journal of Personality*, *10*, 303–336. doi: 10.1002/(SICI)1099-0984(199612)10:5<303::AID-PER262>3.0.CO;2-2
- Dew, T., & Huebner, E. S. (1994). Adolescents' perceived quality of life: An exploratory investigation. *Journal of School Psychology*, *32*, 185–199. doi: 10.1016/0022-4405(94)90010-8
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, *95*, 542–575. doi: 10.1037/0033-2909.95.3.542
- Diener, E., & Chan, M. Y. (2011). Happy people live longer: Subjective well-being contributes to health and longevity. *Applied Psychology: Health and Well-Being*, *3*, 1–43. doi: 10.1111/j.1758-0854.2010.01045.x
- Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, *68*, 653–663. doi: 10.1037/0022-3514.68.4.653
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, *49*, 71–75. doi: 10.1207/s15327752jpa4901_13
- Diener, E., & Seligman, M. E. P. (2002). Very happy people. *Psychological Science*, *13*, 81–84. doi: 10.1111/1467-9280.00415
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. E. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*, 276–302. doi: 10.1037/0033-2909.125.2.276
- Di Fabio, A., & Palazzeschi, L. (2012). La Satisfazione With Life Scale (SWLS): un contributo alla validazione italiana con lavoratori adulti [The Satisfaction With Life Scale (SWLS): A contribution to the Italian validation with adults workers]. *Counseling*, *5*, 207–215.
- Fogle, L. M., Huebner, E. S., & Laughlin, J. E. (2002). The relationship between temperament and life satisfaction in early adolescence: Cognitive and behavioral mediation models. *Journal of Happiness Studies*, *3*, 373–392. doi: 10.1023/A:1021883830847
- Furnham, A., & Cheng, H. (2000). Perceived parental behavior, self-esteem and happiness. *Social Psychiatry and Psychiatric Epidemiology*, *35*, 463–470. doi: 10.1007/s001270050265
- Garcia, D. (2011). Two models of personality and well-being among adolescents. *Personality and Individual Differences*, *50*, 1208–1212. doi: 10.1016/j.paid.2011.02.009
- Gale, R. G., Booth, T., Möttus, R., Kuh, D., & Deary, I. J. (2013). Neuroticism and extraversion in youth predict mental well-being and life satisfaction 40 years later. *Journal of Research in Personality*, *47*, 687–697. doi: 10.1016/j.jrp.2013.06.005
- Gomez, V., Allemand, M., & Grob, A. (2012). Neuroticism, extraversion, goals, and subjective well-being: Exploring the relations in young, middle-aged, and older adults. *Journal of Research in Personality*, *46*, 317–325. doi: 10.1016/j.jrp.2012.03.001
- Jovanovic, V. (2010). Personality and subjective well-being: One neglected model of personality and two forgotten aspects of subjective well-being. *Personality and Individual Differences*, *50*, 631–635. doi: 10.1016/j.paid.2010.12.008
- Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2002). Are measures of self-esteem, neuroticism, locus of control, and generalized self-efficacy indicators of a common core construct? *Journal of Personality and Social Psychology*, *83*, 693–710. doi: 10.1037/0022-3514.83.3.693
- Judge, T. A., & Ilies, R. (2002). Relationship of personality to performance motivation: A meta-analytic review. *Journal of Applied Psychology*, *87*, 797–807. doi: 10.1037/0021-9010.87.4.797
- Judge, T. A., Locke, E. A., Durham, C. C., & Kluger, A. N. (1998). Dispositional effects on job and life satisfaction: The role of core evaluations. *Journal of Applied Psychology*, *83*, 17–34. doi: 10.1037/0021-9010.83.1.17
- Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York, NY: Guilford.
- Kline, P. (1999). *The handbook of psychological testing* (2nd ed.). London, UK: Routledge.
- Kwan, V. S. Y., Bond, M. H., & Singelis, T. M. (1997). Pancultural explanations for life-satisfaction: Adding relationship harmony to self-esteem. *Journal of Personality and Social Psychology*, *73*, 1038–1051. doi: 10.1037/0022-3514.73.5.1038
- Macho, S., & Ledermann, T. (2011). Estimating, testing, and comparing specific effects in structural equation models: The phantom model approach. *Psychological Methods*, *16*, 34–43. doi: 10.1037/a0021763
- McCrae, R. R., & Costa, P. T. (2010). *NEO inventories professional manual: NEO-PI-3, NEO-FFI-3, NEO PI-R*. Lutz, FL: Psychological Assessment Resources.
- McGregor, I., & Little, B. R. (1998). Personal projects, happiness, and meaning: On doing well and being yourself. *Journal of Personality and Social Psychology*, *74*, 494–512. doi: 10.1037/0022-3514.74.2.494
- Medsker, G. J., Williams, L. J., & Holahan, P. J. (1994). A review of current practices for evaluating causal-models in organizational behavior and human resources management research. *Journal of Management*, *20*, 439–464. doi: 10.1016/0149-2063(94)90022-1
- Prezza, M., Trombaccia, F. R., & Armento, L. (1997). La scala dell'autostima di Rosenberg: traduzione e validazione italiana [The Rosenberg's self-esteem scale: Translation and Italian validation]. *Bollettino di Psicologia Applicata*, *223*, 35–44.
- Proctor, C. L., Linley, P. A., & Maltby, J. (2009). Youth life satisfaction: A review of the literature. *Journal of Happiness Studies*, *10*, 583–630. doi: 10.1007/s10902-008-9110-9
- Pulford, B. D., Johnson, A., & Awaida, M. (2005). A cross-cultural study of predictors of self-handicapping in university students. *Personality and Individual Differences*, *39*, 727–737. doi: 10.1016/j.paid.2005.02.008
- Revelle, W., & Scherer, K. R. (2009). Personality and emotions. In D. Sanders & K. S. Scherer (Eds.), *The Oxford companion to emotion and the affective sciences* (pp. 304–306). Oxford, UK: Oxford University Press.
- Rigoni, B. (2013). *Statistica degli allievi 2012–13* [Students' statistic 2012–13]. Bellinzona, Switzerland: UMSS.
- Rogers, W. M., & Schmitt, N. (2004). Parameter recovery and model fit using multidimensional composites: A comparison of four empirical parceling algorithms. *Multivariate Behavioral Research*, *39*, 379–412. doi: 10.1207/S15327906MBR3903_1
- Rosenberg, M. (1965). *Society and the adolescence self-image*. Princeton, NY: Princeton University Press.
- Rossier, J. (2015a). Career adaptability and life designing. In L. Nota & J. Rossier (Eds.), *Handbook of life design: From practice to theory and from theory to practice* (pp. 153–167). Göttingen, Germany: Hogrefe.
- Rossier, J. (2015b). Personality and career interventions. In P. J. Hartung, M. L. Savickas, & W. B. Walsh (Eds.), *APA handbook of career intervention: Foundations* (Vol. 1, pp. 327–350). Washington, DC: American Psychological Association. doi: 10.1037/1438-018
- Salmela-Aro, K., & Tuominen-Soini, H. (2010). Adolescents' life satisfaction during the transition to post-comprehensive education: Antecedents and consequences. *Journal of Happiness Studies*, *11*, 683–701. doi: 10.1007/s10902-009-9156-3

- Scholz, U., Gutiérrez-Doña, B., Sud, S., & Schwarzer, R. (2002). Is perceived self-efficacy a universal construct? Psychometric findings from 25 countries. *European Journal of Psychological Assessment, 18*, 242–251. doi: 10.1027/1015-5759.18.3.242
- Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35–37). Windsor, UK: NFER-NELSON.
- Sibilia, L., Schwarzer, R., & Jerusalem, M. (1995). Generalized perceived self-efficacy. Retrieved from <http://userpage.fu-berlin.de/~health/selfscal.htm>
- Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin, 134*, 138–161. doi: 10.1037/0033-2909.134.1.138
- Strobel, M., Tumasjan, A., & Spörrle, M. (2011). Be yourself, believe in yourself, and be happy: Self-efficacy as a mediator between personality factors and subjective well-being. *Scandinavian Journal of Psychology, 52*, 43–48. doi: 10.1111/j.1467-9450.2010.00826.x
- Suldo, S., & Huebner, E. S. (2006). Is extremely high life satisfaction during adolescence advantageous? *Social Indicators Research, 78*, 179–203. doi: 10.1007/s11205-005-8208-2
- Suldo, S. M., Minch, D. R., & Hearon, B. V. (2015). Adolescent life satisfaction and personality characteristics: Investigating relationships using a five factor model. *Journal of Happiness Studies, 16*, 965–983. doi: 10.1007/s10902-014-9544-1
- Terracciano, A. (2003). The Italian version of the NEO PI-R: Conceptual and empirical support for the use of targeted rotation. *Personality and Individual Differences, 35*, 1859–1872. doi: 10.1016/S0191-8869(03)00035-7
- Weber, M., & Huebner, E. S. (2015). Early adolescents' personality and life satisfaction: A closer look at global vs. domain-specific satisfaction. *Personality and Individual Differences, 83*, 31–36. doi: 10.1016/j.paid.2015.03.042

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Jenny Marcionetti

Department of Education and Learning (DFA)

University of Applied Sciences and Arts of Southern Switzerland (SUPSI)

Piazza San Francesco 19

6600 Locarno

Switzerland

Tel. +41 058 666-6838

Fax +41 058 666-6819

E-mail jenny.marcionetti@supsi.ch