Do life goals mediate the link between personality traits and mental well-being?

Yaşam amaçları, kişilik özellikleri ve mental iyi oluş arasindaki ilişkiye aracilik eder mi?

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Abstract

The present study examined, first, the connections between life goals and different dimensions of mental well-being, and, second, life goals as mediators in the previously established relation between personality traits and mental well-being. The data were drawn from 42- and 50-year-old participants ($n = 242$) in the Jyväskylä Longitudinal Study of Personality and Social Development. Regression analysis revealed that, in women, leisure-related goals (including items on hobbies, relationships and sexuality) were positively linked to emotional, psychological, and social well-being. In men, performance-related goals (mental performance, family's welfare, work and economic welfare) positively predicted psychological and social well-being, and leisure-related goals social well-being. Hierarchical regression analysis showed that, in women, leisure-related goals were a partial mediator in the links from neuroticism and extraversion to emotional well-being: low neuroticism and high extraversion were positively associated with leisure-related goals, which in turn were positively related to emotional well-being. In men, performance-related goals were a partial mediator between extraversion and psychological well-being: extraversion was positively linked to performance-related goals, which was further positively related to psychological well-being. In conclusion, the present results indicate, first, that life goals are linked to different dimensions of mental well-being; second, that life goals partially mediate the associations between personality traits and mental well-being; and, third, that some gender differences exist in the relations between personality traits, life goals, and mental well-being.

Keywords: Personality traits, life goals, emotional well-being, psychological well-being, social well-being

Özet

Bu çalışmada öncelikle yaşam amaçları ve mental iyi oluşun farklı boyutları arasındaki ilişki incelenmiştir. Daha sonra ise, yaşam amaçlarının kişilik özellikleri ve mental iyi oluş ilişkisine aracılık edip etmediğini incelenmiştir. Veriler Jyväskylä Kişilik ve Sosyal Gelişim Boylamsal çalışmasının 42 ve 50 yaş aralığındaki katılımcılarından (N = 242) edinilmiştir. Regresyon analizleri kadınlarda boş zaman ile ilişkili amaçların (hobi, ilişkiler ve cinselliği içeren maddeler) duygusal, psikolojik, ve sosyal iyi oluş ile olumlu ilişkili olduğunu göstermiştir. Erkeklerde performans ile ilişkili amaçların (zihin performansı, ailenin rahatlığı, iş ve ekonomik rahatlık) psikolojik ve sosyal iyi oluşu ve boş zaman ile ilişkili hedeflerin sosyal iyi oluşu olumlu yordadığı bulunmuştur. Hiyerarşik regresyon analizleri kadınlarda boş zaman ile ilişkili amaçların nevrotizm ve dışa dönüklük ve duygusal iyi oluş arasındaki ilişkide kısmi aracı olduğunu, dolayısıyla duygusal iyi oluş ile olumlu ilişkili olduğunu göstermiştir. Erkeklerde performans ile ilişkili amaçların psikolojik iyi oluş ile daha fazla ilişkili olduğu bulunmuştur. Sonuç olarak, bu çalışmanın sonuçları, ilk olarak yaşam hedeflerinin mental iyi oluşun farklı boyutları ile ilişkili olduğunu, ikinci olarak yaşam amaçlarının kişilik özellikleri ve mental iyi oluş arasındaki ilişkiye kısmi olarak aracılık ettiğini ve üçüncü olarak kişilik özellikleri, yaşam amaçları ve mental iyi oluş arasında bazı cinsiyet farklılıkları olduğunu göstermiştir.

Anahtar Kelimeler: Kişilik özellikleri, yaşam amaçları, duygusal iyi oluş, psikolojik iyi oluş, ve sosyal iyi oluş

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Introduction

It has been shown that the Big Five personality traits (also known as Five Factors) and mental (particularly emotional) well-being are closely associated (e.g., Deneve & Cooper, 1998; Hill, Turiano, Mroczek, & Roberts, 2012; Kokko, Tolvanen, & Pulkkinen, 2013b; Lamers, Westerhof, Kovacs, & Bohlmeijer, 2012; Steel, Schmidt, & Shultz, 2008; Tanksale, 2015). These associations have been explained by reference to common biological mechanisms (e.g., serotonin and dopamine transmitters) and to genetic background (Steel et al., 2008). Furthermore, Steel et al. (2008) argue that the associations between personality traits and well-being may be indirect, insofar as personality traits predispose individuals to experience certain life events which then contribute to well-being. In the present study, we aimed at providing empirical information on the possible mediating variables explaining the relationship between personality traits and mental well-being (comprising psychological, social, and emotional well-being).

One candidate mediator is individuals' life goals. As DeNeve and Cooper (1998) stated in their meta-analysis on the links between personality traits and well-being, to fully understand subjective well-being (henceforth emotional well-being), one must also investigate situational variables such as goal strivings. Furthermore, Albuquerque and her colleagues (2013) found that while personal projects mediate the connections between personality traits and emotional well-being, there remains an urgent need to test the mediator role of other types of goals on the links between traits and mental well-being (including different dimensions). Hence, the main purpose of this study was to investigate the possible mediator role of life goals in the links between the Big Five personality traits and multidimensional mental well-being in women and men. The present participants are drawn from the Jyväskylä Longitudinal Study of Personality and Social Development (JYLS) in which a randomly selected longitudinal sample has been followed from childhood to middle adulthood (Pulkkinen, 2006, 2009). This study focused on the participants at ages 42 and 50.

Conceptual Background of the Study

In the multilevel model of personality, personality traits are situated on the first level (called dispositional traits), life goals are situated on the second level (characteristic adaptations), and integrative life narratives (self, life-story) form the third level (McAdams, 1995; McAdams & Adler, 2006; McAdams & Pals, 2006; see Sheldon, 2004). Of these levels, the first and second were studied here. The Big Five personality traits summarize individual differences as enduring patterns of thoughts, feelings and behaviours (McCrae & Costa, 2008). Analyses across diverse cultures have shown personality trait structure to be universal (Costa & McCrae, 2001; McCrae & Costa, 1999). The Five-Factor Model (FFM) of personality, also known as the Big Five (Digman, 1990), is the most widely investigated taxonomy of traits (e.g., McCrae & Costa, 1997). Based on to the model, the five traits of neuroticism, openness to experience (henceforth "openness"), extraversion, agreeableness, and conscientiousness describe the main part of the individual differences in personality traits. Neurotic individuals are typically anxious and insecure. Open individuals are creative and broad-minded. Extraverted individuals are characterized as social and active, whereas agreeable individuals are described as friendly and cooperative. Conscientious individuals are responsible and organized.

The second level in McAdams's (1995) multilevel model of personality is formed by so called characteristic adaptations, such as motives, goals, and values that are linked to motivational life, e.g. personal projects (Albuquerque, Pedroso de Lima, Matos, & Figueiredo, 2013). The present study focused on life goals, which can be defined as "a person's aspirations to shape his or her life context and establish general life structures such as having a career, a family, and a certain kind of lifestyle" (Roberts, O'Donnell, & Robins, 2004, p. 542). Goal-related constructs, such as

values, goals (Schwartz, 1994), personal strivings, life aspirations, and personal projects can be seen as closely allied concepts, as they have been used in free variation in previous studies (e.g., Albuquerque et al., 2013; Frost & Frost, 2000; Ingrid, Majda, & Dubravka, 2009; Kasser & Ryan, 1993; Romero, Gómez-Fraguela, & Villar, 2012; Salmela-Aro, 1997). In earlier studies which have investigated the connections between life goals and mental well-being, life goals have mainly been classified into extrinsic and intrinsic goals (Kasser & Ryan, 1993; Martos & Kopp, 2012; Romero et al., 2012; Ryan et al., 1999; Schmuck, Kasser, & Ryan, 2000; Yamaguchi & Halberstadt, 2012). Extrinsic or materialistic goals have included, e.g., financial success, social recognition, and attractive appearance whereas intrinsic goals have included, e.g., close relationships, self-actualization, physical fitness, community feeling, and self-acceptance.

Mental well-being has recently been conceptualized and empirically analysed as a tripartite construct, including such dimensions as emotional, psychological, and social well-being (e.g., Keyes, 2005; Kokko, Korkalainen, & Lyyra, 2013a). Emotional well-being consists of positive affectivity and low negative affectivity (emotional dimension) as well as life satisfaction (cognitive dimension) (Diener & Emmons, 1984; Diener, Suh, Lucas, & Smith, 1999). Psychological well-being is, conversely, focused on becoming "one self" and finding a meaning in life (Ryff, 1989; Ryff & Keyes, 1995). Ryff (1989) has defined it to include the following six components: self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life, and personal growth. Social well-being is an evaluation of circumstances and one's own functioning in society (Keyes, 2005). According to Keyes (1998), social well-being combines the following five components: social integration, social contribution, social coherence, social actualization, and social acceptance.

Theoretical and Empirical Background of the Study

There is abundant empirical evidence on the contribution of personality traits' to mental well-being. Overall, this evidence indicates that high neuroticism is a risk factor for well-being and the other Big Five personality traits are resource factors for it (DeNeve & Cooper, 1998; Haslam, Whelan, & Bastian, 2009; Hill et al., 2012; Lamers et al., 2012; Steel et al., 2008). Of the other personality traits, extraversion has been the most consistently linked to well-being, and more highly to psychological than emotional well-being, as shown in the JYLS-based results (Kokko et al., 2013b). However, Albuquerque and colleagues (2013) have suggested that this link from personality traits to well-being is not direct. Accordingly, we based our rationale for investigating the mediator role of life goals between personality traits and mental well-being on the following theoretical arguments and research findings. First, according to the five-factor theory of personality (FFT; McCrae & Costa, 1999, 2008), traits contribute to goals; that is, goals are direct or indirect expressions of personality traits. In line with this assumption, several empirical studies have shown that personality traits are related to goals and values (e.g., Athota & O'Connor, 2014; Roccas, Sagiv, Schwartz, & Knafo, 2002; Romero et al., 2012; Vecchione, Alessandri, Barbaranelli, & Caprara, 2011). For example, Romero and colleagues (2012) showed that extraversion and conscientiousness were linked positively to both extrinsic and intrinsic goals. Moreover, openness and agreeableness were connected negatively to extrinsic goals and positively to the importance of intrinsic goals. Neuroticism instead was related positively to the importance of extrinsic goals and negatively to the likelihood of having and achievement of intrinsic goals (Romero et al., 2012). On the other hand, the role of neuroticism in life goals seems less evident than the role of the other traits; namely, several studies have not found a link between neuroticism and goals (Olver & Mooradian, 2003; Roberts & Robins, 2000; Roccas et al., 2002). One explanation could be that many goals demand approach behaviour whereas neuroticism is usually linked to withdrawal behaviour (Roberts & Robins, 2000).

Intrinsic goals reflect natural psychological needs and growth aspirations and, consequently, are assumed to associate with high psychological well-being (Kasser & Ryan, 1993, 1996). Conversely, extrinsic goals are considered to be linked to a need to gain acceptance from others and to ignorance of one's own needs, both of which may further impair well-being (Frost & Frost, 2000). Previous cross-country studies have shown that orientation to extrinsic goals such as reputation, physical attractiveness, and economic success, are connected to low mental well-being, whereas intrinsic life goals, such as friendships, self-acceptance, and personal growth, are related to high mental well-being (e.g., Frost & Frost, 2000; Kasser & Ryan, 1993; Romero et al., 2012; Ryan et al., 1999; Schmuck et al., 2000; Yamaguchi & Halberstadt, 2012).

The Present Study

Based on previous studies (e.g., Haslam et al., 2009; Hill et al., 2012; Lamers et al., 2012; Steel et al., 2008; Tanksale, 2015), confirmed also in the JYLS-based results (Kokko et al., 2013b), we assumed the first requirement of a mediator analysis (Baron & Kenny, 1986), i.e. that a significant link exists between personality traits and mental well-being, has been satisfied. Furthermore, on the basis of earlier findings from the present sample (Hietalahti, Tolvanen, & Kokko, 2015b) and other studies (e.g., Athota & O'Connor, 2014; Roccas et al., 2002; Romero et al., 2012; Vecchione et al., 2011), we expected the second requirement of a mediator analysis (Baron & Kenny, 1986), i.e. that a significant association exists between goals and traits, has been satisfied.

The first aim of this study was to examine whether the life goals reported by the participants at age 42 are related to their mental well-being eight years later, that is, at age 50 (see Fig. 1). The different dimensions of mental well-being - emotional, psychological, and social – described earlier were all taken into account in these analyses. We hypothesized that investment in extrinsic goals would be negatively associated with the different dimensions of mental well-being. We also expected investment in intrinsic goals to be positively linked to mental well-being (e.g., Frost & Frost, 2000; Kasser & Ryan, 1993; Romero et al., 2012; Ryan et al., 1999; Schmuck et al., 2000; Yamaguchi & Halberstadt, 2012). The self-oriented, leisure-related, physical fitness and meaning-of-life goals studied here represent intrinsic goals while performance-related goals represent (in part) extrinsic goals (see also Kasser & Ryan, 1996).

The second aim of the present study was to analyze whether the life goals reported at age 42 function as mediators in the relationships between the Big Five personality traits reported at age 42 and the dimensions of mental well-being (i.e., emotional, psychological, and social) assessed at age 50. We hypothesized that life goals would function as mediators in the link between the Big Five traits and mental well-being (see Fig. 1)**.** This hypothesis is based on a recent study which showed that personal projects mediated the associations between personality traits and emotional well-being (Albuquerque et al., 2013). Personal projects are goal-related constructs and can be seen as expressions of values in particular life domains (Little, 1983; Schwartz, 1994). Moreover, goal prioritization differs between genders (e.g., Roberts & Robins, 2000). Consequently, in all our analyses, we examined whether the studied associations in the middle-aged sample were different for women and men.

To facilitate interpretation of the possible predictive associations between life goals and well-being, we measured life goals earlier in time (age 42) than mental well-being (age 50). Based on the self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000), there are theoretical reasons to believe that the choice of life goals impacts well-being rather than vice versa. For example, striving for intrinsic life goals enables satisfaction of basic psychological needs (competence, autonomy, and relatedness) and consequently enhances well-being (Ryan & Deci, 2000). Thus, the direction of effect in the present study is from intrinsic goals to high well-being and from extrinsic goals to low well-being.
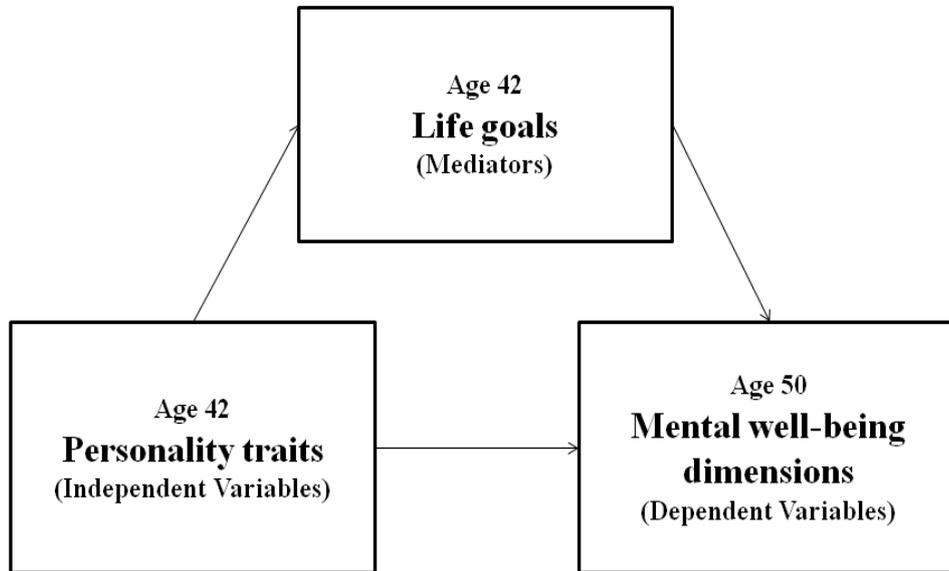
Figure 1. *The conceptual mediator model of the present study*

Method

Participants and Procedure

In the present study, we utilised data drawn from the JYLS (Pulkkinen et al., 2003; Pulkkinen, 2006, 2009; Pulkkinen & Kokko, 2010). The initial data included 12 second-grade school-classes, i.e. classes of 8-year-old pupils, randomly selected from schools in Jyväskylä. The classes comprised of all together 369 pupils, 196 boys (53%) and 173 girls (47%), of whom almost all (94%) were born in 1959 (the remainder in either 1958 or 1960). All the participants were born in Finland. Since age 8, the main data collection waves of the JYLS have been conducted at ages 14, 27, 36, 42, and 50 (Pulkkinen & Kokko, 2010). Because life goals (with 15 items) were not measured in the earlier data collection phases, this study used data collected at ages 42 (in 2001) and 50 (in 2009) (Table 1). At these ages, assessed against data from Statistics Finland, the participants continued to be highly representative of the Finnish age cohort born in 1959, for example in the amount of children, marital status, education, and unemployment (Pulkkinen et al., 2003; Pulkkinen & Kokko, 2010).

Table 1. *Study participants*

Participants	Age 42		Age 50	
Eligible sample	343 (93% of the initial sample, 186 men, 157 women)		323 (88% of the initial sample, 174 men, 149 women)	
Deceased	6 (2%)		12 (3%)	
Withdrawn their participation	20 (5%)		34 (9%)	
	Men*	Women*	Men*	Women*
Interview**	131 (70%)	126 (80%)	116 (67%)	111 (74%)
Personality trait inventory	115 (62%)	118 (75%)		
Life goals	122 (66%)	120 (76%)		
Well-being inventories			109 - 113 (about 64%)	109 - 111 (about 74%)

*Percentages in parentheses refer to the proportion of the eligible sample

**Interview = semi-structured psychological interview, including questions about life goals and self-report inventories on mental well-being.

Measures

NEO-PI Personality Inventory: Personality traits were measured at age 42 using a 60-item version of the original, 181-item NEO-PI Personality Inventory (Costa & McCrae, 1985) standardized for the non-Indo-European languages of Estonian and Finnish (Pulver, Allik, Pulkkinen, & Hämäläinen, 1995). One-tenth of the items in this 60-item version are substitutes for the original American items corresponding to the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1989). Participants returned the mailed inventory after the interview. All the following five subscales (12 items each) were used in the current study: Neuroticism (e.g., "*At times I have been so ashamed I just wanted to hide*"), extraversion (e.g., "*I often feel as if I'm bursting with energy)*", openness (e.g., "*I have a lot of intellectual curiosity*"), conscientiousness (e.g., "*When I make a commitment, I can always be counted on to follow through*"), and agreeableness (e.g., "*I'm known as a warm and friendly person*"). The response scale ranged from *1 = strongly disagree* to *5 = completely agree*. Mean-scores were calculated for each of the five traits. Cronbach's alpha coefficients were as follows: neuroticism .87; extraversion .75; openness .78; agreeableness .79; and conscientiousness .78.

    Goal Pattern Schedule Life: Goals were measured at age 42 using the Goal Pattern Schedule, which consisted of ten items developed by Staudinger and her colleagues (Personal Life Investment scale; Staudinger & Fleeson, 1996) and five items that were created for the present JYLS study. The new items were selected to represent the central life domains of middle-aged individuals. The participant answered according to how much he or she thinks and/or does currently for the life area in question. The following 15 central life goals were included (the first

ten from Personal Life Investment scale): health, mental performance, hobbies, relationships with friends and acquaintances (relationships), sexuality, family's welfare, tasks related to his or her profession or work (work), independence, thinking about his or her life (life reflection), death, religious matters, economic welfare, physical capabilities, expressing his or her hopes or abilities, and wisdom (understanding life). The response scale ranged from 1 = *currently think or do nothing to* 5 = *currently think or do very much*. In the present study, we conducted exploratory factor analysis (EFA) with principal axis factoring (PAF) and promax rotation to find out what kind of goal factors would emerge for the 15 items of the Goal Pattern Schedule at age 42 (see our previous analyses of the 10 items, Hietalahti, Tolvanen, & Kokko, 2015a). The EFA findings were corroborated by confirmatory factor analysis (CFA) with Mplus (Muthén and Muthén 1998-2012) using the maximum likelihood estimation (MLR; full information maximum likelihood). Results showed the following five-factor structure (the CFA standardized factor loadings are given after each item; every loading is statistically significant): *meaning-of-life goals* (life reflection .85; wisdom .62; religious matters .46; and death .24), *leisure-related goals* (sexuality .55; relationships .55; and hobbies .52), *performance-related goals* (work .40; family's welfare .55; economic welfare .33; and mental performance .73), *physical fitness goals* (health .63 and physical capabilities .66), and *self-oriented goals* (independence .64 and expressing own hopes or abilities .76). The Cronbach's alpha coefficients were for meaning-of-life goals .62, for leisure-related goals .54, for performance-related goals .57, for physical fitness goals .59, and for self-oriented goals .63. The selected factor model's RMSEA was .065 and SRMR .056. RMSEA values close to .06 or below and SRMR values close to .08 or below indicate an acceptable model fit with the data (Hu & Bentler, 1999).

Positive Affect and Negative Affect Schedule (PANAS): Emotional well-being was measured at age 50 using three mean-scores formed on the basis of the standardized mean-scores of negative affectivity, positive affectivity, and satisfaction with life. The negative affectivity scale was reversed before calculating the mean-score. Negative and positive affectivity were measured with ten adjectives from the Positive Affect and Negative Affect Schedule (PANAS) (Thompson, 2007; Watson, Clark, & Tellegen, 1988). The participants were given the following instruction: *"Thinking about yourself and how you normally feel, to what extent do you generally feel?"* Negative affectivity was measured with the five items frightened, nervous, upset, ashamed, and hostile, and positive affectivity with the items determined, attentive, alert, enthusiastic, and active. The response scale varied from 1 = *does not describe my mood at all* to 5 = *describes me very well.* Reliability, measured by Cronbach's alpha, was .81 for positive affectivity, and .77 for negative affectivity. Additionally, the mean-score of the five items (e.g., *"If I could live my life over, I would change almost nothing"*) of the Satisfaction with Life Scale was included in the mean-score of emotional well-being (Diener, Emmons, Larsen, & Griffin, 1985). The response scale varied from *1 = strongly disagree to 7 = strongly agree*. Cronbach's alpha, for life satisfaction was .88. Reliability, measured by Cronbach's alpha, for the mean-score of emotional well-being was .60.

Psychological Well-Being Scales (PWBS): Psychological well-being was measured at age 50 with the Psychological Well-Being Scale (Ryff, 1989). The scale included 18 items, e.g., "*I like most aspects of my personality*". The response scale varied from 1 = *strongly disagree* to 4 = *strongly agree*. A mean-score for the 18 items was calculated. Reliability, measured by Cronbach's alpha, was .77.

Social Well-Being Scale (SWBS): Social well-being was measured at age 50 with the Social Well-Being Scale (Keyes, 1998). The scale included 15 claims, e.g., "*I have something valuable to give the world*". The response scale varied from *1 = strongly disagree to 4 = strongly agree*. A

mean-score for the 15 items was calculated. Reliability, measured by Cronbach's alpha for social well-being, was .79.

Statistical Analysis

Data were analysed using IBM SPSS Statistics program (version 20). First, mean level differences between women and men were described by independent samples *t*-tests for all studied variables. The descriptive analyses were then continued by calculating correlations between the study variables, that is, the personality traits, life goals, and different dimensions of mental well-being. Correlations were calculated for women and men separately to see which associations were significant in both genders and which only in women or in men. The significance of the differences between the correlation coefficients in men and women were further analysed using the Fisher *r*-to-*z* transformation.

We investigated the relations between life goals and the mental well-being dimensions by a regression analysis with a forward method. In this analysis, life goals were set as independent variables and psychological, social, and emotional well-being as dependent variables to be analysed one at a time. In the final regression models, we retained the independent variables which significantly explained the dependent variable in question.

To find out whether life goals functioned as mediators between the personality traits and different dimensions of mental well-being, we conducted hierarchical regressions (stepwise method) after checking that the initial requirements for mediation were met (Baron & Kenny, 1986). These were, first, that the independent variables (personality traits) correlated with the dependent variables (dimensions of mental well-being), second, that the independent variables (personality traits) correlated with the mediator variables (life goals), and, third, that the mediator variables (life goals) correlated with the dependent variables (dimensions of mental well-being). Hence, only those variables which satisfied these three preconditions were included in the subsequent hierarchical regression analysis.

Personality traits were entered into the regression equation in the first step and life goals in the second step. The dimensions of well-being were entered one at a time. The potential mediator role of the life goals between the personality traits and well-being was determined in accordance with the level of significance of the coefficients of determination in the model. We also took into consideration whether the direct connection between the traits and well-being was weakened or disappeared when the potential mediator was entered in to the model. A further analysis with the Sobel test was conducted to confirm the statistical significance of each mediation effect (Baron & Kenny, 1986; Soper, 2015). In all analyses, missing data were treated using a pairwise -method.

Results

Descriptive Statistics for and Correlations between Study Variables

Independent samples *t*-tests revealed some statistically significant mean-level differences in personality traits and life goals between the genders (Table 2). Women scored higher in openness and agreeableness compared to men, as previously reported for the same sample (see Kokko et al., 2013b; Rantanen, Metsäpelto, Feldt, Pulkkinen, & Kokko, 2007). Women rated the meaning-of-life goals more highly than men. In the different dimensions of mental well-being, no statistically significant mean-level differences were observed between the genders.

Table 2. *Means (M) and standard deviations (SD) of the Big Five personality traits (age 42), life goals (age 42) and of the well-being dimensions (age 50): T-test for independent samples*

Variables	Women		Men		T-test		
	M	*SD*	*M*	*SD*	*T*	*df*	*p*
Neuroticism	2.40	0.61	2.33	0.75	0.72	231	.474
Extraversion	3.33	0.53	3.27	0.63	0.73	231	.468
Openness	3.46	0.56	3.17	0.60	3.77	231	.000
Conscientiousness	3.76	0.54	3.63	0.52	1.87	231	.063
Agreeableness	3.72	0.54	3.53	0.49	2.84	231	.005
Meaning-of-life goals	2.89	0.66	2.63	0.73	2.90	240	.004
Leisure-related goals	3.27	0.71	3.41	0.65	-1.61	240	.109
Performance-related goals	3.72	0.58	3.73	0.66	-0.18	240	.858
Physical fitness goals	3.65	0.67	3.49	0.76	1.81	240	.072
Self-oriented goals	3.28	0.79	3.20	0.85	0.70	240	.484
Psychological well-being	3.20	0.34	3.16	0.33	0.92	222	.356
Social well-being	2.97	0.38	2.95	0.40	0.29	221	.771
Emotional well-being	2.98	0.71	3.01	0.70	-0.24	216	.810

As can be seen in Table 3, numerous statistically significant correlations were found between the personality traits, life goals, and dimensions of mental well-being in both men and women. In the case of personality traits and well-being, neuroticism was negatively and extraversion positively correlated with all the well-being dimensions in both genders (see also Kokko et al., 2013b). Conscientiousness correlated positively with both psychological and emotional well-being in men; in women it showed no significant associations with any of the well-being dimensions. Openness correlated positively with psychological and social well-being in men; in women it correlated positively with all the dimensions of well-being. Agreeableness correlated positively with all the well-being dimensions in men; in women it correlated positively only with emotional well-being.

For personality traits and life goals, neuroticism correlated positively with meaning-of-life goals and negatively with leisure-related goals in men; in women it correlated negatively with leisure-related and self-oriented goals. Extraversion correlated positively with leisure- and performance-related goals in men; in women it correlated positively with self-oriented, leisure- and performance-related goals. Openness correlated positively with meaning-of-life and with leisure- and performance-related goals in men; in women it correlated positively all goals except performance-related goals. Agreeableness correlated positively with leisure-related and physical fitness goals in men; in women it correlated positively with leisure-related goals.

For life goals and the different dimensions of mental well-being, leisure-related goals correlated positively with social well-being in men; in women these goals correlated positively with all the well-being dimensions studied (psychological, social, and emotional). Performance-related goals correlated positively with psychological and social well-being in men; in women these goals showed no significant associations with any of the well-being dimensions. Self-oriented goals correlated positively with social well-being in men; in women these goals correlated positively with psychological and emotional well-being. As shown in Table 3, the Fisher r-to-z transformation revealed several statistically significant gender differences in the correlation coefficients. Consequently, the regression analyses were conducted separately for men and women.

Table 3. *Correlations between the Big Five personality traits (age 42), life goals (age 42) and mental well-being dimensions (age 50): Women (n = 104-120) are below and men (n = 90-122) above the diagonal*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Neuroticism	-	-.52***	-.15	-.38***	-.29***	.27***	-.22*	-.05	-.09	ª.13	-.53***	-.30**	-.57***
2. Extraversion	-.43***	-	.42***	.16	.25**	.05	.36***	.43***	.13	.10	.38***	.33**	.36***
3. Openness	-.16	.38***	-	-.04	.20*	.37***	.23*	.32**	ª.03	.14	.31**	.33**	.17
4. Conscientiousness	-.08	.05	-.06	-	.16	-.11	.14	.17	.13	-.11	ª.46***	.19	ª.51***
5. Agreeableness	-.19*	.20*	.20*	-.07	-	.05	.29**	.16	ª.26**	.04	.23*	ª.42***	.26*
6. Meaning-of-life goals	.06	.03	.49***	-.00	.15	-	.35***	.44***	.31**	.39***	.02	.15	-.13
7. Leisure-related goals	-.28**	.32**	.36***	-.04	.20*	.27**	-	.29**	.40***	.42***	.18	.30**	ª.15
8. Performance-related goals	.01	.19*	.15	.02	.05	.37***	.24**	-	.36***	.51***	ª.37***	.29**	.12
9. Physical fitness goals	-.01	.04	ª.32**	-.04	ª-.01	.34***	.35***	.31**	-	.33***	.12	.11	.13
10. Self-oriented goals	ª-.19*	.22*	.31**	-.05	-.03	.50***	.40***	.38***	.40***	-	.14	.21*	.00
11. Psychological well-being	-.53***	.50***	.42***	ª.11	.16	.18	.31**	ª.06	.18	.25*	-	.57***	.65***
12. Social well-being	-.36***	.63***	.33**	.00	ª.16	.11	.21*	.10	.09	.17	.65***	-	.52***
13. Emotional well-being	-.53***	.44***	.27**	ª.12	.21*	.10	ª.36***	.05	.16	.20*	.78***	.56***	-

*** p < .001; ** p < .01; * p < .05. ª = statistically significant difference in correlation between women and men.

Regression Analyses

Among women, the regression analysis revealed that leisure-related goals at age 42 explained 10% of the variance of psychological, 5% of social, and 13% of emotional well-being at age 50 (Table 4): the more they invested in leisure-related goals, the higher their psychological, social, and emotional well-being. Thus, our hypothesis that investment in intrinsic goals (e.g., leisure-related goals) would be positively linked to well-being was supported. Conversely, among men, performance-related goals at age 42 explained 14% of the variance of psychological well-being at age 50: the more performance-related goals they reported, the higher their psychological well-being. Moreover, leisure-related and performance-related goals together explained 14% of the variance of social well-being. In other words, the more men invested in leisure-related and performance-related goals, the higher was their social well-being. Consequently, our hypothesis that investment in extrinsic goals (e.g., performance-related goals) would be negatively connected to well-being was only partially supported.

Table 4. *Regression analyses: Life goals (age 42) as independent variables and well-being dimensions (age 50) as dependent variables*

Variables	Psychological well-being		Social well-being		Emotional well-being	
Life goals	β	R^2	β	R^2	β	R^2
Women						
Analysis 1: Leisure	.31**	.10**				
Analysis 2: Leisure			.21*	.05*		
Analysis 3: Leisure					.36***	.13***
Men						
Analysis 1: Performance	*.37***	.14***				
Analysis 2: Leisure			*.24*	.14*		
Performance			.22*			

β = standardized regression coefficient of the independent variable, R^2 = coefficient of determination of the model. *** $P < .001$; ** $P < .01$; * $P < .05$. Leisure = leisure-related goals, performance = performance-related goals.

Mediation Analyses

Supporting our hypothesis that life goals would function as mediators in the link between the Big Five traits and mental well-being, the hierarchical regression analyses showed that some life goals were partial mediators between personality traits and mental well-being (Table 5). The statistical significance of these mediation effects was confirmed by Sobel tests (Baron & Kenny, 1986; Soper, 2015). Among women, leisure-related goals partially mediated the relationship between neuroticism and emotional well-being (Sobel test: $z = -2.38$, $p = .02$) and between extraversion and emotional well-being (Sobel test: $z = 2.16$, $p = .03$). That is, the lower the neuroticism score and higher the extraversion score at age 42, the more leisure-related goals women reported at age 42.

Further, a higher score for leisure-related goals was linked to higher emotional well-being at age 50. In men, performance-related goals partially mediated the link between extraversion and psychological well-being (Sobel test: $z = 2.59$, $p = .01$; Table 5). In other words, the higher the level of extraversion, the more performance-related goals men reported; this in turn was related to higher psychological well-being.

Table 5. *Hierarchical regression analyses: Life goals (age 42) as partial mediators between the Big Five personality traits (age 42) and well-being dimensions (age 50)*

Women	β	R^2	R^2 (adj)
Emotional well-being as a dependent variable			
Step 1: Neuroticism	-.53***		
Extraversion	.25**	.34**	
Step 2: Neuroticism	-.39***	.36*	.35*
Extraversion	.21*		
Leisure-related goals (mediator)	.18*		
Men			
Psychological well-being as a dependent variable			
Step 1: Extraversion	.38 ***	.15***	
Step 2: Extraversion	.28 *	.20*	.18*
Performance-related goals (mediator)	.25*		

β = standardized regression coefficient, R^2 *(adj)* = adjusted coefficient of determination (R^2). *** $p < .001$; ** $p < .01$; * $p < .05$.

Discussion

The main purpose of the present study was to investigate, first, the connections between life goals and different mental well-being dimensions. Second, we analysed the possible mediator role of life goals in the links between the Big Five personality traits and different dimensions of mental well-being. Our analyses were based on the middle-aged women and men, drawn from an ongoing longitudinal study.

Our first assumption that investing in extrinsic goals (e.g., financial success) would be negatively associated with mental well-being and prioritizing intrinsic goals (e.g., relatedness) positively linked with well-being (e.g., Frost & Frost, 2000; Kasser & Ryan, 1993; Romero et al., 2012; Ryan et al., 1999; Schmuck et al., 2000; Yamaguchi & Halberstadt, 2012) was partly supported. Leisure-related goals reflect intrinsic goals and in women were positively linked with all the studied well-being dimensions, thereby supporting our hypothesis. In addition, leisure-related goals were positively associated with social well-being in men, further supporting our hypothesis. However, (contrary to our hypothesis,) performance-related goals (e.g., economic welfare), which partially express extrinsic goals, contributed to high psychological and social well-being in men, (which partially conflicts our hypothesis). The self-oriented, leisure-related, physical

fitness and meaning-of-life goals selected for study here represent intrinsic goals, while performance-related goals partially represent extrinsic goals.

One explanation could be that extrinsic goals are not linked to low well-being, if they help an individual to attain basic financial security or certain intrinsic goals (Ingrid et al., 2009). It should be noted that *why* a life goal is being striven for is often more important than the *content* of that goal (Carver & Baird, 1998). In terms of mental well-being, the self-determined reasons for goal striving are more important than goal content as such (Carver & Baird, 1998). Sheldon and Elliot (1999) have also stated that pursuing goals for self-concordant reasons (because one enjoys and fully identifies with the goals) contribute to higher well-being than pursuing goals for non-concordant reasons (because of environmental pressures and/or internal compulsions).

To conclude, on the basis of the present findings, leisure-related goals appear to be associated with high well-being, especially in women, while performance-related goals are associated with high well-being in men. Traditionally, women have been assumed to focus more on relatedness and men on the breadwinner role (Eagly & Wood, 1991). In addition, the results demonstrate the importance of investigating life goals in women and men separately, as the sources of mental well-being between the genders may be different. One explanation for the gender differences found in the present study may derive from the differences observed between men and women in goal prioritization. It would seem that for men it is more important to pursue economic goals (e.g., economic welfare or the good of one's own firm; Roberts & Robins, 2000), as reflected in the dominant role of performance-related goals among men in the present study, whereas, for women it is social goals (e.g., the welfare of loved one; Roberts & Robins, 2000), as reflected in the importance of leisure-related goals, that take priority.

Unexpected results, such as the contribution of performance-related goals to high psychological and social well-being in men, may also be explained by the fact that the goal measures used in the previous studies and in the present study are not the same. Life goals have typically been measured utilizing the Aspiration Index (Kasser & Ryan, 1996). In the Aspiration Index, four goals reflect intrinsic aspirations (self-acceptance, affiliation, community feeling and physical fitness) and three goals extrinsic aspirations (attractive appearance, financial success and social recognition). Additionally, the goals selected should be scrutinized closely before conclusions are drawn about whether the results support or fail to support specific hypotheses (Brunstein, Schultheiss, & Maier, 1999; Burroughs & Rindfleisch, 2002). In the present study, performance-related goals included items such as mental performance and the welfare of the family, which to some extent also reflect intrinsic goals such as the pursuit of personal growth and relatedness.

In addition, the links between personal goals and mental well-being may be culturally layered (Frost & Frost, 2000). Goals which are negatively linked with well-being in one culture may show different associations in another culture (Schmuck et al., 2000; Sortheix, 2014). Moreover, the meanings attached to specific goals may differ between cultures (see Frost & Frost, 2000; Ryan & Deci, 2000), and hence cultural differences could partly explain results that run counter to a given hypothesis (Inglehart & Beker, 2000; Schwartz, 1999).

Our second assumption that life goals would mediate the association between personality traits and mental well-being was supported. In women, leisure-related goals functioned as partial mediators in the relationships of neuroticism and extraversion with emotional well-being. Low neuroticism and high extraversion were linked to investment in leisure-related goals, which in turn contributed to emotional well-being. Conversely, in men, performance-related goals functioned as partial mediators in the associations between extraversion and psychological well-being: high extraversion was associated with the pursuit of performance-related goals, which explained psychological well-being. It should be noted that these associations were found despite the long

time lag between the measurements of personality traits and life goals (at age 42) and those of well-being (at age 50).

It may be speculated that leisure-related (sexuality, hobbies, and relationships) and performance-related (work, economic welfare, mental performance, and family's welfare) goals are for middle-aged individuals at the centre of their lives. Not only are these people in prime working age but their children are likely to be older, enabling them to invest more time in friendships and hobbies. In this study among 42-year-olds, 73% of women and 80% of men were in full-time work. Additionally, the participants' firstborn child was on average 15 years old (Pulkkinen et al., 2003). Moreover, the traits of neuroticism and extraversion, which are related to these mediation results, support the findings of Romero et al. (2012) that extraversion is positively linked to both intrinsic and extrinsic goals while neuroticism is negatively connected to intrinsic goals. There is replicated empirical evidence to show that low neuroticism and high extraversion in particular are related to good mental well-being (see also Kokko et al., 2013b using the JYLS sample). Furthermore, in explaining the results, for example emotional well-being (hedonic approach) has similarities in content with leisure-related goals in that both concern pleasure-seeking. On the other hand psychological well-being (eudaimonic approach) partially overlaps in content with performance-related goals in terms of the degree to which a person can be said to be fully functioning (Ryan & Deci, 2001).

The present study has its limitations. First, the reliabilities of the life goal dimensions and emotional well-being mean-score were not very high. Second, life goals may have changed during the eight-year time lag, as goals and personality traits were measured at age 42 and mental well-being at age 50. Finally, the use of the Goal Pattern Schedule, which is with 15 items a new measure to examine life goals, requires that the results should be replicated with other data.

However, our study has several strengths. We analysed life goals as possible mediators between personality traits and mental well-being. As far as we know, this has not been studied before. Albuquerque and colleagues (2013), who studied the efficacy of personal projects as a mediator, called for analyses of the mediator role of other types of goals on the relations between personality traits and well-being. We also took into account possible gender differences and, in addition to emotional well-being, studied social and psychological well-being in a heterogeneous, age-cohort representative sample of Finns (at age 42 and 50 in this particular study). We thus applied a longitudinal design in our analysis of the contribution of life goals to mental well-being in men and women. A new finding was that certain life goals partially mediated the link between personality traits and well-being in both women and men. The results highlight the need to include different dimensions of well-being (e.g., Keyes, 2005; Kokko et al., 2013a), as different life goals had specific associations with different dimensions. Consequently, we were able to gain a more comprehensive picture of how different personality levels, such as traits and goals (McAdams, 1995; McAdams & Pals, 2006), contribute to an individual's well-being. Finally, the links between life goals and well-being have previously been studied in heterogeneous samples less than in more homogeneous samples, often consisting of university students. This heterogeneity in the present data adds value to the study (e.g., Kasser & Ryan, 1993; Ryan et al., 1999; Schmuck et al., 2000).

According to the values theory, values function in interaction with other values (Burroughs & Rindfleisch, 2002). The extent to which extrinsic values or goals contribute to well-being can thus depend on what other important goals an individual has and whether these goals are conflicting. If an individual's goals are conflicting, this may over time cause mental pressure, which can further diminish one's well-being (Burroughs & Rindfleisch, 2002). In the future, it would be fruitful to study the individuals' value and goal patterns and the links between these patterns to both personality traits and different dimensions of mental well-being. It would also be interesting to consider the possibility of reverse causality in between life goals and well-being, that

is, causality running from well-being to goal priorities, which is also possible (Sagiv & Schwartz, 2000).

Acknowledgments

References

Albuquerque, I., Pedroso de Lima, M., Matos, M., & Figueiredo, C. (2013). The interplay among levels of personality: The mediator effect of personal projects between the big five and subjective well-being. *Journal of Happiness Studies, 14*, 235-250.

Athota, V. S., & O'Connor, P. J. (2014). How approach and avoidance constructs of personality and trait emotional intelligence predict core human values. *Learning and Individual Differences, 31*, 51-58.

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.

Brunstein, J. C., Schultheiss, O. C., & Maier, G. W. (1999). The pursuit of personal goals: A motivational approach to well-being and life adjustment. In J. Brandtstädter & R. M. Lerner (Eds.), *Action and self-development: Theory and research through the life span* (pp. 169-196). Thousand Oaks, CA: Sage.

Burroughs, J. E., & Rindfleisch, A. (2002). Materialism and well-being: A conflicting values perspective. *Journal of Consumer Research*, *29*, 348-370.

Carver, C. S., & Baird, E. (1998). The American dream revisited: Is it *what* you want or *why* you want it that matters? *Psychological Science, 9*, 289-292.

Costa, P. T., Jr., & McCrae, R. R. (1985). *The NEO Personality Inventory Manual*. Odessa, FL: Psychological Assessment Resources.

Costa, P. T. Jr., & McCrae, R. R. (1989). *The NEO/NEO-FFI Manual Supplement*. Odessa, FL: Psychological Assessment Resources.

Costa, P. T. Jr., & McCrae, R. R. (2001). A theoretical context for adult temperament. In T. D. Wachs, & G. A. Kohnstamm (Eds.), *Temperament in context*, (pp. 1-21). Mahwah, NJ: Erlbaum.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.

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.

Diener, E., & Emmons, R. A. (1984). The independence of positive and negative affect. *Journal of Personality and Social Psychology, 47*, 1105-1117.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, *49*, 71-75.

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*, 276-302.

Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology, 41*, 417-440.

Eagly, A. H., & Wood, W. (1991). Explaining sex differences in social behaviour: A meta-analytic perspective. *Personality and Social Psychology Bulletin, 17*, 306-315.

Frost, K. M., & Frost, C. J. (2000). Romanian and American life aspirations in relation to psychological well-being. *Journal of Cross-Cultural Psychology*, *31*, 726-751.

Haslam, N., Whelan, J., & Bastian, B. (2009). Big five traits mediate associations between values and subjective well-being. *Personality and Individual Differences, 46*, 40-42.

Hietalahti, M., Tolvanen, A., & Kokko, K. (2015a). Values and personal life investment in middle-age: Measures and relations. *Journal of Adult Development*, *22(4)*, 206-220.

Hietalahti, M., Tolvanen, A., & Kokko, K. (2015b). *Relationships between personality traits and values in middle-age*. Manuscript submitted for publication.

Hill, P. L., Turiano, N. A., Mroczek, D. K., & Roberts, B. W. (2012). Examining concurrent and longitudinal relations between personality traits and social well-being in adulthood. *Social Psychological & Personality Science, 3*, 698-705.

Hu, L., & Bentler, P. M. (1999). Cut-off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*, 1-55.

Inglehart, R., & Beker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. *American Sociological Review, 65*, 19-51.

Ingrid, B., Majda, R., & Dubravka, M. (2009). Life goals and well-being: Are extrinsic aspirations always detrimental to well-being? *Psychological Topics, 18*, 317-334.

Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, *65*, 410-422.

Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology, 65*, 410-422.

Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly*, *61*, 121-140.

Keyes, C. L. M. (2005). Mental illness and/or mental health? Investigating axioms of the complete state model of health. *Journal of Consulting and Clinical Psychology, 73*, 539-548.

Kokko, K., Korkalainen, A., & Lyyra, A-L. (2013a). Structure and continuity of well-being in mid-adulthood: A longitudinal study. *Journal of Happiness Studies, 14*, 99-114.

Kokko, K., Tolvanen, A., & Pulkkinen, L. (2013b). Associations between personality traits and psychological well-being across time in middle adulthood. *Journal of Research in Personality, 47*, 748-756.

Lamers, S. M. A., Westerhof, G. J., Kovacs, V., & Bohlmeijer, E. T. (2012). Differential relationships in the association of the big five personality traits with positive mental health and psychopathology. *Journal of Research in Personality, 46*, 517-524.

Little, B. R. (1983). Personal projects: A rationale and methods for investigation. *Environment & Behavior, 15*, 273-309.

Martos, T., & Kopp, M. S. (2012). Life goals and well-being: does financial status matter? Evidence from a Representative Hungarian Sample. *Social Indicators Research, 105*, 561-568.

McAdams, D. P. (1995). What do we know when we know a person? *Journal of Personality, 63*, 365-396.

McAdams, D. P., & Adler, J. M. (2006). How does personality develop? In D. K. Mroczek & T. D. Little (Eds.), *Handbook of personality development* (pp. 469-492). Mahwah, NJ: Erlbaum.

McAdams, D. P., & Pals, J. (2006). A new big five. Fundamental principles for an integrative science of personality. *American Psychologist, 61*, 204-217.

McCrae, R. R., & Costa, P. T. Jr. (1997). Personality trait structure as a human universal. *American Psychologist, 52*, 509-516.

McCrae, R. R., & Costa, P. T. Jr. (1999). A five-factor theory of personality. In L. A. Pervin & O. P. John (Ed.), *Handbook of personality: theory and research*, (2nd ed., pp. 139-153). New York, NY: Guilford Press.

McCrae, R. R., & Costa, P. T. Jr. (2008). The five-factor theory of personality. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 159-181). New York, NY: Guilford Press.

Muthén, L. K., & Muthén, B. O. (1998-2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Olver, J. M., & Mooradian, T. A. (2003). Personality traits and personal values: a conceptual and empirical integration. *Personality and Individual Differences, 35*, 109-125.

Pulkkinen, L. (2006). The Jyväskylä Longitudinal Study of Personality and Social Development. In L. Pulkkinen, J. Kaprio, & R. J. Rose (Eds.), *Socioemotional development and health from adolescence to adulthood*. (pp. 29-55). New York, NY: Cambridge University Press.

Pulkkinen, L. (2009). Personality – a resource or risk for successful development. *Scandinavian Journal of Psychology*, *50*(6), 602-610.

Pulkkinen, L., Fyrstén, S., Kinnunen, U., Kinnunen, M-L., Pitkänen, T., & Kokko, K. (2003). *40+ Erään ikäluokan selviytymistarina.* [40+ A successful transition to middle adulthood in a cohort of Finns]. Jyväskylä, Finland: Reports from the Department of Psychology, University of Jyväskylä.

Pulkkinen, L., & Kokko, K. (2010). *Keski-ikä elämänvaiheena.* [Middle age as a stage of life]. Jyväskylä, Finland: Reports from the Department of Psychology, University of Jyväskylä.

Pulver, A., Allik, J., Pulkkinen, L., & Hämäläinen, L. (1995). A big five personality inventory in two non-Indo-European languages. *European Journal of Personality, 9*, 109-124.

Rantanen, J., Metsäpelto, R.-L., Feldt, T., Pulkkinen, L., & Kokko, K. (2007). Long-term stability in the big five personality traits in adulthood. *Scandinavian Journal of Psychology, 48*, 511-518.

Roberts, B. W., O'Donnell, M., & Robins, R. W. (2004). Goal and personality traits development in emerging adulthood. *Journal of Personality and Social Psychology, 87*, 541-550.

Roberts, B. W., & Robins, R. W. (2000). Broad dispositions, broad aspirations: The intersection of personality traits and major life goals. *Personality and Social Psychology Bulletin, 26*, 1284-1296.

Roccas, S., Sagiv, L., Schwartz, S. H., & Knafo, A. (2002). The Big Five Personality Factors and Personal Values. *Personality and Social Psychology Bulletin, 28*, 789-801.

Romero, E., Gómez-Fraguela, J. A., & Villar, P. (2012). Life Aspirations, Personality Traits and Subjective Well-being in a Spanish Sample. *European Journal of Personality, 26*, 45-55.

Ryan, R. M., Chirkov, V. I., Little, T. D., Sheldon, K. M., Timoshina, E., & Deci, E. L. (1999). The American dream in Russia: Extrinsic aspirations and well-being in two cultures. *Personality and Social Psychology Bulletin*, *25*, 1509-1524.

Ryan, R. M., & Deci, E. L. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development and Well-Being. *American Psychologist, 55*, 68-78.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*, 141-166.

Ryff, C. D. (1989). Happiness is everything or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*, 1069-1081.

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being. *Journal of Personality and Social Psychology, 69*, 719-727.

Sagiv, L., & Schwartz, S. H. (2000). Value priorities and subjective well-being: direct relations and congruity effects. *European Journal of Social Psychology, 30*, 177-198.

Salmela-Aro, K. (1997). *Personal projects and subjective well-being*. (Unpublished doctoral dissertation). University of Helsinki, Helsinki.

Schmuck, P., Kasser, T., & Ryan, R. M. (2000). Intrinsic and extrinsic goals: Their structure and relationship to well-being in German and U.S. college students. *Social Indicators Research*, *50*, 225-241.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology, 25*, 1-65.

Schwartz, S. H. (1994). Are there universal aspects in the content and structure of values? *Journal of Social Issues*, *50*, 19-46.

Schwartz, S. H. (1999). Cultural value differences: Some implications for work. *Applied Psychology: An International Journal, 48*, 23-47.

Schwartz, S. H., & Rubel, T. (2005). Sex differences in value priorities: Cross-cultural and multimethod studies. *Journal of Personality and Social Psychology, 89*, 1010-1028.

Sheldon, K. M. (2004). *Optimal human being: An integrated multi-level perspective*. New Jersey, NY: Lawrence Erlbaum Associates.

Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need-satisfaction, and longitudinal well-being: The Self-Concordance Model. *Journal of Personality and Social Psychology, 76*, 482-497.

Soper, D. S. (2015). Sobel test calculator for the significance of Mediation (Software). Available from http://www.danielsoper.com/statcalc

Sortheix, F. (2014). *Values and well-being: An analysis of country and group influences*. (Unpublished doctoral dissertation). University of Helsinki, Helsinki.

Staudinger, U. M., & Fleeson, W. (1996). Self and personality in old and very old age: A sample case of resilience? *Development and Psychopathology, 8*, 867-885.

Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin, 134*, 138-161.

Tanksale, D. (2015). Big Five personality traits: Are they really important for the subjective well-being of Indians? *International Journal of Psychology*, 50, 64-69.

Thompson, E. R. (2007). Development and validation of an internationally reliable short-form of the Positive And Negative Affect Schedule (PANAS). *Journal of Cross-Cultural Psychology, 38*, 227–242.

Vecchione, M., Alessandri, G., Barbaranelli, C., & Caprara, G. (2011). Higher-order factors of the big five and basic values: Empirical and theoretical relations. *British Journal of Psychology*, *102*, 478-498.

Yamaguchi, M., & Halberstadt, J. (2012). Goals and well-being in New Zealand. *New Zealand Journal of Psychology, 41*, 5-10.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063-1070.