

# A MULTILEVEL MODELING STUDY OF THE INFLUENCE OF RELATIONSHIP ENHANCING TRAITS AND INDIVIDUALISM ON SATISFACTION WITH LIFE ACROSS NATIONS

## ESTUDIO DE LA INFLUENCIA DE LOS RASGOS Y EL INDIVIDUALISMO EN LA SATISFACCIÓN VITAL ENTRE NACIONES: UN MODELO MULTINIVEL

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### Abstract

The current cross-cultural study explored the associations between relationship enhancing traits (interpersonal trust, importance of close relationships, sociability), characteristics corresponding to an individualistic attitude (competition, autonomy), and life satisfaction. Data for this study was from 24 of the 59 countries used in the

World Values Survey Wave 6. Multilevel modelling was used as a means to analyse the influence of individual level (Level 1) and country level (Level 2) variables on life satisfaction. Results indicated that the individual level predictors interpersonal trust and importance of close relationships made meaningful positive contributions to life satisfaction. The competition variable aggregated at the country level significantly negatively predicted life satisfaction, while country-level aggregated autonomy

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shared a positive relationship with life satisfaction.

**Keywords:** Life satisfaction; Relationship enhancing traits; Individualism; Multilevel modelling; World Values Survey.

## Introduction

Examining what factors contribute to positive psychological functioning associated with individual well-being has been a topic of intense scientific scrutiny (see Ryan & Deci, 2001). Individuals' assessments of their lives in terms of its quality is referred to as subjective well-being (E. Diener, Oishi, & Lucas, 2003). Life satisfaction is one of the components that constitute subjective well-being (Andrews & Whitey, 1976; Lucas, E. Diener, & Suh, 1996). It can be defined as the subjective cognitive judgment that individuals make about their overall quality of life (E. Diener, Emmons, Larsen, & Griffin, 1985; Shin & Johnson, 1978). Having higher life satisfaction has been linked with numerous benefits, including higher self-esteem, lower depression, and educational accomplishments (Proctor, Linley, & Maltby, 2010).

There is increasing evidence in the literature that having positive social interactions and relationship-relevant individual characteristics contributes across the life span to individual well-being, including life satisfaction (e.g., DeNeve & Cooper, 1998; Nickerson & Nagle, 2004; Pinguart & Sörensen, 2000; Ryan & Deci, 2001; Wu, Kasearu, Värnik, Tooding, & Trommsdorff, 2016). Therefore, the present study will examine how variables determining 'how we relate to others' predict life satisfaction. More specifically, we will examine the influence of relationship enhancing traits and individualism.

### **Relationship Enhancing Traits**

Personality traits that enhance interpersonal relationships (i.e., relationship enhancing traits) have been shown to promote subjective well-being (DeNeve, 1999; DeNeve & Cooper, 1998). According to DeNeve (1999), and DeNeve and Cooper (1998), relationship enhancing traits are interpersonally-relevant personality traits: affiliation (desiring and having abilities to form positive social bonds), trust (one's views about honesty and

trustworthiness of others), and sociability/social desirability (adaptive patterns of relating to people). DeNeve (1999) proposed that these traits not only aid in assisting relationships, but also in subjective well-being. Studies that have separately assessed these personality traits have found that they all positively link to life satisfaction. With regards to affiliation, multiple studies have demonstrated that a lack of affiliation in the form of attachment avoidance negatively relates to life satisfaction (e.g., Gnilka, Ashby, & Noble, 2013; Hinnen, Sanderman, & Sprangers, 2009; Lavy & Littman-Ovadia, 2011), demonstrating the importance of wanting close interpersonal relationships for life satisfaction. Trust in other people has likewise shown a positive relationship with life satisfaction (e.g., Ashleigh, Higgs, & Dulewicz, 2012; Barefoot et al., 1998). Finally, the relationship between sociability and life satisfaction is also positive (Emmons & Diener, 1986).

### **Individualism**

At the country level, individualism represents cultural differences in how people from different countries tend to relate to one another in society (Geert Hofstede, Gert Jan Hofstede, & Minkov, 2010). More individualistic societies have looser ties between people, and people are expected to be more self-reliant and independent (Geert Hofstede et al., 2010). It is often contrasted with collectivism, where people in a society share strong, loyal, and close-knit bonds with their in-groups (Geert Hofstede et al., 2010). Individualism is more than just a unitary dimension, and instead can be separated into subtypes (Triandis & Gelfand, 1998). Vertical individualism refers to competing with others to achieve status and become distinguished, while horizontal individualism focuses on desiring to achieve autonomy, uniqueness, and self-reliance without the need for high status (Triandis & Gelfand, 1998).

While individualism is often conceptualized at the country-level (some countries are considered higher in individualism; e.g., Schimmack, Radhakrishnan, Oishi, Dzokoto, & Ahadi, 2002), individualism can also be assessed at the individual level (see Oyserman & Uskul, 2008). These individual-level counterparts of individualism and collectivism are called idiocentrism and

allocentrism respectively (Triandis, Leung, Villareal, & Clack, 1985). Markus and Kitayama (1991) termed them independent and interdependent self-construals. Examinations of vertical and horizontal individualism at the individual level have likewise been conducted (e.g., Soh & Leong, 2002). The importance of employing a multi-level method of assessing individualism has been previously supported (e.g., Nguyen, Le, & Boles, 2010; Taras, Kirkman, & Steel, 2010).

When assessed as a unidimensional construct, individualism has been associated with high satisfaction with one's social relationships (E. Diener, Suh, Smith, & Shao, 1995). When assessed according to its components, vertical individualism has a significant negative relationship with degree of social relationships, while horizontal individualism has a nonsignificant association but in the positive direction (Gouveia, Clemente, & Espinosa, 2003). This suggests that different conceptualizations of individualism have different implications for how we relate to others.

In general, studies suggest that individualism is positively associated with life satisfaction and subjective wellbeing (E. Diener, M. Diener, & C. Diener, 1995; Diener et al., 1995; Yetim, 2003). However, this positive relationship becomes less stable when individualism is assessed based on its vertical and horizontal subcomponents. Being competitive (i.e., vertical individualism) on average is associated with lower life satisfaction (Oishi, 2000). Autonomy (i.e., horizontal individualism) on average is positively associated with life satisfaction, however this relationship tends to be stronger in individualistic countries (Oishi, 2000).

### **Present Study**

The present study aims to assess how relationship enhancing traits and individualism predict life satisfaction using World Values Survey data. While other studies have focused on what factors predict life satisfaction using this survey data (e.g., Bjornskov, 2003), there appears to be a lack of studies that focus on the combination of interpersonal relationship-relevant variables examined in the present study. The three relationships enhancing traits that will be examined are interpersonal trust, affiliation

(i.e., importance of close relationships), and sociability. In line with previous research (see DeNeve, 1999), the study hypothesizes that individual level relationship enhancing traits (i.e., interpersonal trust, importance of close relationships, sociability) will predict higher life satisfaction. Individualism is another variable that has implications for how individuals relate to one another. Therefore, the present study will examine individualism through its components (i.e., competition and autonomy) at both the individual-level and at the country-level. Based on Oishi (2000)'s findings, it is hypothesized that in the present study the autonomy component of individualism will positively, and the competition component of individualism will negatively, predict life satisfaction at both the country and individual level.

## **Method**

### **Participants**

The study utilized data from Wave 6 of the World Values Survey (2010-2014). A total of 85070 participants from 59 countries were assessed as part of the survey. The gender composition is 40548 males and 44434 females, with 88 participants not reporting their gender. Participants ranged in age from 16-99 years old ( $M = 42.06$ ,  $SD = 16.55$ ). The number of people within each clustering unit (i.e., number of people within each country) ranges from 841 (New Zealand) to 3531 (South Africa). Due to missing data on the variables of interest, the sample size was reduced to 30900 participants and 24 countries. Although missing data can be handled with the maximum likelihood estimation process in Mplus, cases are typically not included for missing values on the predictors.

### **Measures**

#### *Interpersonal trust*

Interpersonal trust was assessed by combining six items (V102-V107) on the World Values Survey (2010-2014) into a general measure of interpersonal trust. These items asked how much participants trusted people from

different groups; family, neighbourhood, known personally, people met for the first time, other religions, and other nationalities. Participants responses were reversed coded for the purposes of the present study, ranging from 1 (*do not trust at all*) to 4 (*trust completely*). These items were all significantly and positively related, with correlations ranging from  $r = .02$  to  $.70$ ,  $p < .01$ .

#### *Importance of close relationships*

Affiliation in the present study was operationalized as reporting importance of close relationships. Importance of close relationships was assessed by combining items V4 and V5 on the World Values Survey (2010-2014) into a general measure of importance of close relationships. These items asked participants how important family and friends were in their life. These two items are assessed using a 4-point Likert scale which were reverse coded for the present study so that they ranged from 1 (*not at all important*) to 4 (*very important*). These two items were significantly and positively related at  $r = .16$ ,  $p < .01$ .

#### *Sociability*

Sociability was assessed using a single-item measure (V160F) on the World Values Survey (2010-2014) that asks participants whether they see themselves as someone

who is outgoing and social. Participants responded using a 5-point Likert Scale 1 (*disagree strongly*) to 5 (*agree strongly*).

#### *Autonomy*

Autonomy was assessed using a single-item measure (V216) on the World Values Survey (2010-2014), that assessed whether participants saw themselves as an autonomous individual using a 4-point Likert scale, which were reversed for the present study to range from 1 (*strongly disagree*) to 4 (*strongly agree*).

An aggregate of participants' autonomy scores was created to assess autonomy as a Level-2 (i.e., country-level) predictor variable, therefore creating a contextual variable that assessed country differences in autonomy.

#### *Competition*

Competition was assessed by using a single-item measure (V99) on the World Values Survey (2010-2014), which asks participants to respond on a 10-point Likert scale regarding their views towards competition, which in reversed form for the present study ranged from 1 (*Competition is harmful. It brings out the worst in people*) to 10 (*Competition is good. It stimulates people to work hard*).

Table 1.

*Means, standard deviations, and correlations of study variables.*

Variables	Mean	SD	1	2	3	4	5	6	7	8
1. Life satisfaction	6.81	2.31	1.00							
2. Trust	2.67	0.51	.07	1.00						
3. ICR	3.59	0.46	.08	.19	1.00					
4. Sociable	3.51	1.24	.07	.05	.14	1.00				
5. Competition	7.05	2.62	.02	.02	.09	.10	1.00			
6. Autonomy	2.99	0.93	.05	.04	.04	-.00	.02	1.00		
Country-level variables										
7. Agg_Competition	7.17	0.91	-.40	–	–	–	–	–	–	1.00
8. Agg_Autonomy	2.96	0.41	.03	–	–	–	–	–	-.07	1.00

*Notes.* ICR=Importance of close relationships; Correlations from individual-level variables are based on within-individual correlation matrix; correlations for country-level variables are based on between-country correlation matrix. Tests of significance for these coefficients not available, but see tests of significance for regression coefficients in Table 2.

and develop new ideas). Seeing competition as good was interpreted as participants endorsing higher competition levels, while saying that competition is harmful was interpreted as participants endorsing lower competition levels.

To assess competition as a level-2 (i.e., country-level) predictor variable, an aggregate measure of participants' competition scores was created, in order to create a contextual variable assessing country differences in competition.

### *Life Satisfaction*

Life satisfaction was assessed using a single-item measure (V23) from the World Values Survey (2010-2014) that asks participants to evaluate on 10-point Likert scale 1 (completely dissatisfied) to 10 (completely satisfied) about how satisfied they were with their lives as a whole.

### **Data Analytic Strategy**

Multilevel modeling analysis was used to address the research hypotheses of the present study using Mplus Version 7.4 program (Muthén & Muthén, 1998-2015), with maximum-likelihood estimation. Level-1 predictors (i.e., individual-level variables) were interpersonal trust, importance of close relationships, sociability, competition, and autonomy. Level-2 predictors (i.e., country-level variables) were aggregate competition and aggregate autonomy. Life satisfaction was used as the outcome variable. A model building approach was used in this study. Model 1 is an unconditional model, and was analyzed to assess the intraclass correlation. Model 2 is a level-1 model with fixed predictors, while Model 3 a level-1 model with random slopes on all the level-1 predictors. These random slope parameters were tested since it seems reasonable for the relationship between the predictor variables (e.g., individualism) and the outcome variable life satisfaction to vary somewhat across countries (e.g., E. Diener et al., 1995). In Model 4 both level-1 and level-2 predictors were included.

## **Results**

### **Descriptive Statistics**

Means, standard deviations, and correlations for the study variables are presented in Table 1. At the individual level, the correlations between all predictors and life satisfaction were smaller than .10. At the country level, Competition had a correlation of -.40 with life satisfaction, while the correlation between autonomy and life satisfaction was negligible. Tests of significance for these within and between country coefficients are not available in Mplus; however, we report the tests of significance for regression coefficients in the next section and in Table 2.

### **Multilevel Modeling**

Since the research interests of the present study involve examining predictor influences at both individual and country levels, predictors were grand mean centered (Enders & Tofighi, 2007). The four models are presented in Table 2. An examination of Model 1 (i.e., the unconditional model) revealed that the intraclass correlation was equal to .119. Therefore, 11.9% of the variance in life satisfaction is due to country differences. In Model 2, the level-1 predictors were included, followed by inclusion of the random slope coefficients in Model 3, and the level-2 predictors in Model 4. No cross-level interactions were included since we did not postulate any hypotheses of moderation effects. Given that the coefficients did not change substantially across models, we focus our interpretation on Model 4.

In Model 4, results for individual-level predictors were mostly consistent with our hypothesis. However, at the individual level, competition did not significantly predict life satisfaction ( $\beta = 0.01, p > .05$ ). Interpersonal trust ( $\beta = 0.24, p < .05$ ), importance of close relationships ( $\beta = 0.34, p < .001$ ), sociability ( $\beta = 0.09, p < .001$ ), and autonomy ( $\beta = 0.09, p < .05$ ) were all significant positive predictors of life satisfaction. However, sociability and autonomy have very small effects that are probably detected due to the very large sample size, indicating that only interpersonal trust and importance of close relationships make meaningful contributions. Therefore,

Table 2.

Multilevel modeling with life satisfaction as outcome variable.

Model parameters	Model 1: Unconditional	Model 2: Level-1 Predictors Fixed	Model 3: Level-1 Model Random slopes	Model 4: Level 2 predictors
<b>Regression coefficients (fixed effects)</b>				
Intercept ( $\gamma_{00}$ )	6.86(.10)**	6.78(0.18)**	6.69(.17)**	6.75(.16)**
<i>Individual-level effects</i>				
Trust ( $\gamma_{10}$ )		0.22(.03)**	0.24(.08)*	0.24(.08)*
ICR ( $\gamma_{20}$ )		0.27(.03)**	0.34(.07)**	0.34(.07)**
Sociability ( $\gamma_{30}$ )		0.10(.01)**	0.10(.02)**	0.09(.02)**
Competition ( $\gamma_{40}$ )		0.00(.01)	0.00(.01)	0.01(.01)
Autonomy ( $\gamma_{50}$ )		0.11(.01)**	0.10(.04)*	0.09(.04)*
<i>Country-level effects</i>				
Aggregate Competition ( $\gamma_{01}$ )				-0.43(.13)*
Aggregate Autonomy ( $\gamma_{02}$ )				0.52(.37)
<b>Variance components (random effects)</b>				
Residual ( $\sigma^2$ )	4.53(.02)**	4.56(.04)**	4.45(.04)**	4.45(.04)**
Intercept ( $\tau_{00}$ )	0.61(.11)**	0.79(.23)*	0.72(.22)*	0.62(.19)*
Slope of Individual-level trust ( $\tau_{11}$ )			0.123(.04)*	0.124(.04)*
Slope of Individual-level ICR ( $\tau_{22}$ )			0.108(.04)*	0.106(.04)*
Slope of Individual-level sociability ( $\tau_{33}$ )			0.008(.00)*	0.007(.00)*
Slope of Individual-level competition ( $\tau_{44}$ )			0.003(.00)*	0.003(.00)*
Slope of Individual-level autonomy ( $\tau_{55}$ )			0.032(.01)*	0.033(.01)*
<b>Model summary</b>				
Deviance statistic	367784.60	134668.23	134150.97	134139.78
Number of estimated parameters	3	8	18	20

Note. \* $p < .05$  \*\* $p < .001$ . Standard errors are shown in parentheses. Omitted from this table are correlations between intercept and five slope coefficients in Models 3-4. These account for 5 estimated parameters.

higher trust in others and findings close relationships important positively affects life satisfaction.

Hypotheses regarding country-level predictors were partially supported. Aggregate competition negatively predicted life satisfaction ( $\beta = -0.43$ ,  $p < .05$ ). Therefore, high country-level competition negatively influences life satisfaction. Aggregate autonomy predicted life satisfaction in the expected positive direction, however it was not significant ( $\beta = 0.52$ , n.s.). It is not surprising that some of these coefficients are not significant given that the number of countries in our sample is 24.

The variance of all the slopes was also significant, showing that countries differ in the slopes of the predictor variables on life satisfaction.

## Discussion

The current study utilized the World Values Survey to investigate the influence of interpersonal relationship relevant variables in predicting life satisfaction. Individual level predictor variables were examined to determine whether individual differences in relationship enhancing traits and individualism predict life satisfaction. It was hypothesized that trust, importance of close relationships, and sociability would positively predict satisfaction. Autonomy was expected to positively, and competition negatively, predict satisfaction. Country level individualism variables were created by aggregating individual level responses, which were then examined to assess how they influence life satisfaction across countries. It was hypothe-

sized that higher aggregate autonomy and lower aggregate competition would predict higher life satisfaction.

The multilevel modeling analyses revealed that trust and importance of close relationships (i.e., affiliation) positively predicted life satisfaction, thus lending support for relationship enhancing traits bearing importance for subjective well-being (DeNeve, 1999). Sociability also predicted life satisfaction, but the effect was small. Trust in other people has been characterized as a part or form of social capital (e.g., Inglehart, 1997; Putnam, 1995, 2000), and individual-level trust in others has been associated positively with well-being across cultures (Elgar et al., 2011; Helliwell & Putnam, 2004; Yip et al., 2007). Regarding importance of close relationships, one study also found that having motivations and abilities to socially belong (i.e., affiliation) is positively related to life satisfaction (Pillow, Malone, & Hale, 2015). Satisfactory relationships with family and friends has been positively associated with life satisfaction in most countries (E. Diener & M. Diener, 1995). Overall, the present findings regarding relationship enhancing traits support studies that have found that relationship quality is more related to measures of individual well-being like health and subjective well-being than quantity of interactions (Fiorillo & Sabatini, 2011; Pinguart & Sörensen, 2000).

These findings are also consistent with theories that view relationships as important for individual well-being. Self-determination theory (Deci & Ryan, 1991; Ryan & Deci, 2000, 2001; Ryan, Sheldon, Kasser, & Deci, 1996) postulates that relatedness is one of the basic psychological needs, and that fulfillment of such a need is important for well-being (e.g., life satisfaction). Relatedness comprises of strivings related to caring and connecting with others, feelings of authentically relating with others, and having generally satisfying social involvements (Deci & Ryan, 1991). Higher daily experiences of relatedness have been positively associated with well-being (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Ryff proposed a multidimensional model that posits 'positive relations with others' (having trusting, warm, empathetic, and satisfying relationships) as being one of the six dimensions of well-being (Ryff, 1989a, 1989b; Ryff & Keyes, 1995).

The study found only partial support for the hypothesis regarding individualism and its components. While individual-level autonomy predicted life satisfaction in the expected positive direction, the effect was very small. This warrants further exploration. Currently, there is some disagreement in the literature about whether autonomy is a universal basic need across cultures in line with self-determination theory, or whether it only demonstrates functional significance in more individualistic Western countries (Chirkov, Ryan, Kim, & Kaplan, 2003; Oishi, 2000; Ryan & Deci, 2000). Likewise, since the present study asked participants about how autonomous they were and did not employ a full-scale measure to assess horizontal individualism, it is possible that the study tapped into a different conceptualization of autonomy. For example, individualistic autonomy has been equated with being independent or separate from others, which is contrasted with autonomy conceptualized as agency and not separateness from others (Chirkov et al., 2003; Kagitcibasi, 1996). Competition at the individual level was found to be unrelated to life satisfaction, suggesting it may be the case that competition as assessed in the present study does not have an important negative impact on life satisfaction. The lack of significant results at the individual level contradicts findings from studies that suggest competition between people has a negative influence on individual well-being (e.g., Hibbard & Buhrmester, 2010; Tempuski et al., 2012).

Autonomy at the country level positively predicted life satisfaction. While the result was not significant, an increase in the number of countries might provide more power to detect a significant effect. Inglehart, Foa, Peterson, and Welzel (2008) likewise found that country-level sense of freedom of choice (akin to autonomy) positively predicted life satisfaction. The present study corroborates findings that horizontal individualism positively relates to life satisfaction (Oishi, 2000), though that study found the effect to be stronger in individualistic countries. At the country level, competition negatively predicted life satisfaction, supporting findings that vertical individualism has a negative influence on life satisfaction (Oishi, 2000).

For studies that want to undertake a more detailed level of analysis regarding individualism, findings from the present study demonstrate the need to analyze individualism at the subtype level, and not just as a unitary construct.

While studies that assess individualism as a singular construct find it relates positively to life satisfaction (e.g., Yetim, 2003), the present study demonstrates that the relationship is more complex when vertical and horizontal individualism are distinguished. Furthermore, the study results show they share a small positive correlation at the individual level, and a weak negative correlation at the country level, indicating they should be assessed as separate constructs. Other studies have likewise found small correlations between the vertical and horizontal individual components ( $r = 0.27$ ; Gouveia et al., 2003). In line with these results, research has demonstrated that amongst individualistic countries, life satisfaction differences exist between those that are comparatively higher on the horizontal dimension in comparison to the vertical dimension of individualism (Ferguson, Kasser, & Jahng, 2011).

### **Limitations and Future Directions**

Many of the measures in the World Values Survey are single item or averaged item measures not specifically designed to assess the variables in the current study, which does not allow for a comprehensive assessment of either the predictor or outcome variables. For example, the present study used single-item measures of competition and autonomy to assess vertical and horizontal individualism, instead of a more traditional measure like Singelis, Triandis, Bhawuk, and Gelfand's (1995) individualism and collectivism scale. If one were to examine the full scale, items relating to vertical and horizontal individualism cover more nuances than just blanket autonomy and competition. Therefore, the items and variables used in the present study should be considered representations or proxy measures of constructs, and limitations concerning these measures should be acknowledged.

Future studies should therefore aim to replicate the present study using more robust and validated measures. While the present study focused on 'to what extent' the variables related to life satisfaction, conclusions cannot be made about 'why'. Studies have found that individualists versus collectivists differ on the what information they use to make judgements concerning life satisfaction (Suh, Diener, Oishi, & Triandis, 1998). For example, emotional feelings are an important determinant of well-being in

individualistic societies, while considerations of norms also have an influence in collectivistic ones (Suh et al., 1998). While it is beyond the scope of the present study, explanations for the relationships that emerged in the present study should be investigated in future research. Finally, the findings of present study concerning relationship enhancing traits can be informative for future intervention or educational programs that aim to enhance personal well-being. Focusing on improving relationship enhancing traits (especially trust and affiliation) as one area of development in these programs could have a beneficial impact.

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