DOI: https://doi.org/10.14393/REE-v39n1a2024-66474
Instituto de Economia e Relações Internacionais – Universidade Federal de Uberlândia

economia
ensaios

The relationship between culture and subjective well-being in a comparative perspective: evidence from individualism-collectivism

A relação entre cultura e bem-estar subjetivo em perspectiva comparativa: evidências a partir do individualismo-coletivismo

Luiz Felipe Oliveira Barroso[1]

Abstract: The literature on subjective well-being (SWB) has identified differences in the level of satisfaction with life in different countries, which are only partially justified by economic characteristics. The objective of this article is to identify whether cultural characteristics influence the degree of satisfaction declared in different countries of the World Values Survey database. A two-step strategy was adopted, incorporating the individualism-collectivism cultural dimension constructed through Multiple Correspondence Analysis, and subsequent estimation of a multilevel econometric model to determine the SWB. The results indicate a cultural effect on the SWB but limited to some groups of countries.

Keywords: Culture and well-being; Happiness economics; Subjective well-being.
JEL Classification: I32

Resumo: A literatura em bem-estar subjetivo (*SWB*) identificou diferenças no nível de satisfação com a vida em diferentes países, justificáveis apenas parcialmente pelas características econômicas. O objetivo desde artigo é identificar se as características culturais possuem efeito no grau de satisfação declarado em distintos países da base de dados *World Values Survey (WVS)*. Foi adotado uma estratégia em duas etapas, incorporando a dimensão cultural individualismo-coletivismo construída através de Análise de Correspondência Múltipla e posterior estimação de modelo econométrico hierárquico para a determinação do *SWB*. Os resultados indicam efeito cultural sobre o *SWB*, ainda limitados a alguns grupos de países.

Palavras-chave: Cultura e bem-estar; Economia da felicidade; Bem-estar subjetivo.
Classificação JEL: I32

[1] Professor at Centro Universitário Senac (CAS - SP). E-mail: luiz.felipe.oliveira2@gmail.com - ORCID: https://orcid.org/0009-0005-8056-0685

1. Introduction

Advances in life satisfaction studies have gained momentum with the incorporation of concepts developed in the field of psychology in an attempt to understand the structure of well-being and propose improvements in mental health. Economists have deepened the discussion of the effects between material assets and emotional benefits, adopting the terminology Happiness Economics. Most of the work is exploratory, aimed at determining the feeling of happiness and satisfaction, the so-called subjective well-being (SWB), and follows on from work carried out since the 1970s (GOLGHER; COUTINHO, 2020; LAYARD; LAYARD, 2011; TELLA; MACCULLOCH, 2006).

This literature frequently shows differences in the level of average SWB between different countries. Can these differences be explained solely by the socio-economic context or is there a cultural component mediating individuals' responses? Since different societies have different life goals, how do these perspectives correlate with levels of life satisfaction? These factors would manifest themselves through socialization, through the interaction between individual and cultural levels (SUH *et al.*, 1998; UCHIDA; NORASAKKUNKIT; KITAYAMA, 2004).

One of the strategies used to address this issue is the use of cultural dimensions on value scales, representing opposing dualities. The dimension addressed in this paper is that of individualism/collectivism, the cultural dimension most often considered in studies involving SWB.[2] The purpose of this paper is to advance the discussion on the determinants of SWB, seeking to understand the differences in levels between different countries. The aim is to test the hypothesis that cultural aspects determine a portion of the difference in SWB between nations.

First, the literature on the determinants of individual and national well-being and the relationship between cultural values and SWB is discussed. Subsequently, a cultural indicator of individualism was constructed, using behavioral questions from the World Values Survey (WVS) as a basis. This index is the explanatory cultural variable of interest in the multilevel econometric model, whose effects on the dependent variable of SWB will be evaluated.

Finally, the results are compared in order to understand whether the differences in SWB between countries can be explained by considering the respective differences in values represented by the individualism indicator. This methodology represents an advance, since it uses an open and replicable database, incorporating it into the construction of the index and the estimation of the SWB determination model. Finally, the results obtained are discussed in the light of their limitations and possible research alternatives.

[2]Other cultural dimensions are cited in cultural studies, but are little explored in SWB literature.

2.Subjective well-being: theoretical and empirical considerations

2.1 Subjective well-being and economics

The meanings of happiness and satisfaction in modern societies lean between the fulfillment of pleasures and the pursuit of virtue, passing through a whole spectrum of daily, moral and religious practices (MCMAHON, 2006). The idea of happiness as the driving force behind human action came to be considered more formally in the utilitarian proposal. It established the basis of the rational decision of agents as a calculation between pleasures and pains, a balance of stimuli with positive and negative effects on well-being (ROSEN, 2003).

This type of classical utilitarian approach was gradually discarded due to the difficulty of operationalizing it, and the process of systematizing and formalizing economic theory gradually eliminated considerations of "pleasure units" or "perceptions". Mainstream utility theory consolidated the pragmatic view of choice theory, disregarding any kind of interpersonal comparison of utility, or underlying psychological considerations (COLANDER, 2007).

However, at the end of the 20th century, considerations about the psychological basis of agents' decision-making returned to the debate. By neglecting the influence of affections on human behavior, traditional economic theory neglects the role of emotions(THALER, 2000). In the context of welfare analysis, Rojas (2007) points out that there are results from choice models based on rational assumptions that do not necessarily result in a maximum expected level of SWB, i.e. the level of welfare declared by the individual.

This resurgence of interest among economists in SWB discussions is not only based on a re-evaluation of the discipline's own rationality criteria (SELIGMAN *et al.*, 2005). The dialog with psychology took place with the advance of new databases and statistical tools from the 1960s onwards (WILSON, 1967), coinciding with a growing reaction to the indiscriminate use of economic indicators as measures of quality of life and the search for alternative indicators, such as self-reported satisfaction and happiness (ANGNER, 2011). On the part of economists, interest was popularized by Easterlin (1974) and SWB approaches were even used in analyses of the trade-off between inflation and unemployment and social inequalities (PRAAG; FERRER-I-CARBONELL, 2004).

2.2 Types and measures of subjective well-being

What would be the most appropriate approach for the empirical investigation of subjective well-being? The two main concepts of well-being that guide the SWB literature are presented by Fleurbaey (2009) and DelleFave et al (2011): hedonic well-being and cognitive well-being.

Hedonic well-being draws a parallel between the concept of the hedonic treadmill which represents the weighting between positive and negative

affections, reminiscent of the classic utilitarian concept. Affects are feelings, such as joy and excitement (positive affects), sadness and anger (negative affects), and are evaluated in terms of their intensity and duration. By computing the occurrence of these affections, the emotional quality of everyday experience could be assessed (KAHNEMAN; KRUEGER, 2006).

The second type of well-being is cognitive well-being, an attempt to expand the concept of hedonic well-being. As affections represent only an immediate fraction of human experience, a broad cognitive evaluation would be a more desirable measure of well-being. Also called eudaimonic well-being, it is usually represented as a self-reported measure of satisfaction, an individual assessment of life as a whole, the focus of this article (KAHNEMAN; KRUEGER, 2006).

Only through introspection would it be possible to evaluate aspects of the experience that are neglected in traditional objective indicators. This judgment would not be the sum of pleasures and pains, but rather a consideration of the concept of livability: "The livability of a society is the deegree to which its provisions and requirements fit with the needs and capacities of its members."(VEENHOVEN *et al.*, 1993, p. 6). The better the fit between individuals' needs and capacities, the greater the degree of satisfaction with life.

The case for using self-reported measures of well-being is based mainly on their simplicity, i.e. a concise numerical variable based on the unique experience of individuals. Traditional quality of life measures, such as income, inequality and education data, would offer a good perspective on well-being, but would not necessarily reflect the satisfaction experienced by individuals (PCHELIN; HOWELL, 2014).

It is not an uncritical type of measure, but it has been validated in the literature through experiments, correlations with neurological activities associated with well-being, and various traditional measures of well-being (HAYBRON, 2007). Furthermore, on average, this sensitivity to immediate emotional factors is expected to be compensated for when using a large enough sample.

2.3 Determinants of well-being

2.3.1 SWB from an individual perspective

The biggest challenge in investigating SWB is to establish its objective coherently, and the literature seeks to find its correlates, antecedents and consequences. One way of seeking answers to these questions, with a reasonable degree of systematization, is to take up Maslow's concept of universal needs (TAY; DIENER, 2011), updated to the context of well-being determinants by Ryff and Keyes (1995). However, livability is a simpler concept, in which positive external circumstances are already considered sufficient to promote an improvement in well-being. As a methodological proposal, it establishes a useful

limit for analysis, although it may underestimate the active capacity of individuals to construct their own subjective reality, independent of external conditions.

Another perspective, accepted in the fields of psychology and anthropology, rejects the predominance of circumstances and variant effects on SWB. This hypothesis, known as the setpoint, assumes that SWB is predominantly a stable trait, showing deviations only in the short term. The following would contribute to SWB being a time-invariant measure: the individual's personality (YAP; ANUSIC; LUCAS, 2012); growing aspirations and adaptability (UCHIDA; TAKAHASHI; KAWAHARA, 2014); and cultural identity (INKELES, 2017).

Contrary to the idea that fixed factors predominate, Veenhoven (1994) compiles a series of results in which there is a significant variation in SWB over the long term. Easterlin (1974), for example, observed a positive relationship between levels of income and happiness within each country, but considerable stability in the level of national SWB during the period analyzed, even in the presence of economic growth. The existence of this paradox has been questioned by Sacks, Stevenson and Wolfers (2012). In fact, the marginal effects of income on well-being are higher at lower income levels, where there is a lack of essential livability conditions. At higher income levels, the effect is lower, i.e. the marginal utility of income from SWB is decreasing.

In general, in addition to income, there are positive effects on SWB: employment (LUCAS *et al.*, 2004), good health (SEN, 2002; STEPTOE; DEATON; STONE, 2015), marriage (KIM; MCKENRY, 2002), religious attendance, socialization (BAUMEISTER; LEARY, 1995) and education (MURRELL; SALSMAN; MEEKS, 2004). A negative effect on SWB is ageing (STEPTOE; DEATON; STONE, 2015) and ambiguous gender effects (STEVENSON; WOLFERS, 2009).

2.3.2 SWB from a national perspective

Identifying the determinants of SWB from an individual point of view raises the question of how these factors influence national well-being (DIENER; OISHI, 2000). Resorting to aggregating individual data in order to compose national SWB indices raises some controversy. Is it possible to use national statistics, such as GDP and inequality, to understand a country's average level of well-being? Does it make sense to compare the different interpretations of SWB between countries?

The most extensive work with international comparisons of SWB is published annually in the World Happiness Report (HELLIWELL; LAYARD; SACHS, 2019) based on the Gallup World Poll (GWP), and establishes a ranking for the results obtained. Also using GWP, Deaton explores the differences between averages and determinants of SWB between countries. These studies show a strong association between the level of per capita income and stated

satisfaction, i.e. rich countries have the highest SWB, an observation in line with the basic needs theory; and the relationship between income and national SWB is insignificant (or lower) among rich countries, in line with the setpoint theory.

However, when the analysis turns to countries that are not at the extremes of the national SWB rankings, these relationships are less evident. Latin American countries, for example, have higher than expected average SWB, while Asian countries have lower than expected SWB(GRAHAM, 2012).This gap could therefore represent differences in personality and values associated with different cultures.

3. Subjective well-being and culture

The hypothesis that cultural aspects influence SWB provides an additional explanation for the differences in the level of subjective well-being between countries. Cultural studies have long remained the preserve of anthropology and sociology, whose analyses partly reject the comparison of different cultures because they represent distinct social and historical constructions (JOHNSTON *et al.*, 2012). However, research in psychology and economics, looking at quantitative and qualitative data, has identified national differences in the concepts of emotions and values (DIENER; DIENER; DIENER, 2009).

3.1 External contexts and subjective perceptions

It is not trivial to establish a univocal relationship between cultural aspects and SWB. The proposal adopted in this article is an intermediate view between the social and the innate, as advocated by Frijda, Manstead and Bem (2000). From this perspective, emotions are constructed through the interaction between individual (psychological, neurological or physiological) and collective (social environment and cultural institutions) processes. The level of well-being would therefore depend on the alignment, most of the time involuntary, of internal cognitive processes with external contexts.

Although the circumstances vary in each cultural context, some of these events, whether beneficial or harmful, are an indistinct part of human experience. Subjective well-being, as a measure for evaluating all aspects of life, would encompass the manifestation of both universal and circumstantial events, mediated by the cultural structure (MESQUITA; FRIJDA, 1992; SCHIMMACK *et al.*, 2002).

3.2 Definition of culture

Having consolidated the hypothesis of the influence of cultural aspects on emotions and, consequently, on individuals' self-perception of satisfaction, it is necessary to establish a definition of culture in the context of emotions and behaviors: "*Culture is information capable of affecting individuals' behavior that*

they acquire from other members of their species through teaching, imitation, and other forms of social transmission" (RICHERSON; BOYD, 2008, p. 5).

In turn, this definition incorporates four constituents: personalities (selves), interactions, institutions and ideas. These elements connect to cognitive perceptions, creating a system of meanings for a given social structure. They are formally or informally institutionalized and offer a kind of guide to principles and conduct. When they are shared and practiced on a daily basis, they become a paradigm for action, a kind of collective unconscious (CHAO, 2001; MARKUS; KITAYAMA, 2010).

3.3 Types of selves

The cultural factor most explored in SWB literature is the self, defined as:

> A process of reflective activity that includes our subjective stream of consciousness (perceptions, thoughts, feelings, plans and choices), as well as [...] a physical, social and moral being. [...] a reflective process that allows us to formulate, monitor, control and react to our own behavior (SANDERSTROM; MARTIN; FINE, 2016, p. 216).

The SWB literature uses two types of moderating selves representing two opposing psychosocial personality structures: independent self and interdependent self (TRIANDIS *et al.*, 1988).

The construction of the subjective experience of the independent self, according to Markus and Kitayama(2010), is based on a strong attribution to "private" aspects. Goals and actions are coordinated to satisfy their own desires: the search for well-being as a value in itself, by performing autonomous behavior that is distinct from the group. The interdependent self, on the other hand, represents subjective experience through relationships with others, valuing "public" aspects. Behavior is guided by conformity to the values of the group, respect for hierarchies and traditions: a sense of well-being is not a goal but a consequence of fulfilling the roles established by society.

The structure of independent thought has its origins in the formation of the Greek philosophical school, in the idea of the search for the systematic ordering of the universe and the composition of matter, marked by the idea of deterministic mechanisms and regularities. From the point of view of the association with well-being, it would be a vision aligned with the idea of control, of autonomy (NISBETT, 2004).

At the other end of the spectrum, the interdependent self would be represented by various Eastern philosophies of thought that emphasize another method of understanding the world, a less deterministic, more random and dialectical view. There would be a greater acceptance of contradictions, of external forces uncontrollable by action, resulting in a less introspective and more

harmonious look at the collective in the construction of the idea of well-being (CHOI; KIM, 2003).

The challenge is to reduce these values to an operationalizable variable. In order to use them as a moderating component of SWB, this data will be aggregated from a national perspective, using cultural dimensions.

3.4 Cultural dimensions

Cultural dimensions, according to Minkov (2012), are tools for analyzing cultures, constructed in such a way as to establish a continuum of opposite poles, made up of some correlated variables that capture a cultural phenomenon of interest. Their construction is not based on cultural stereotypes but on the prevalence of a certain set of values and practices in relation to other cultures. They can be used as comparative indexes between countries and as explanatory moderating variables, as in the case of SWB determination models.

The dimension most frequently adopted in the study of SWB is Individualism-Collectivism (HOFSTEDE; HOFSTEDE; MINKOV, 2010; TRIANDIS, 2001). It is built on the predominance of independent (individualism) and interdependent (collectivism) selves. In the SWB literature, it is observed that individualistic cultures, where there is greater freedom of choice and personal well-being is valued, have a higher level of SWB than collectivist cultures (SUH; DIENER; UPDEGRAFF, 2008).

Would it be possible to replicate some of these results with the WVS database and identify this effect on SWB in different cultural zones? Some of the literature uses unavailable databases, making it difficult to replicate. This article advances by adopting a data reduction method that takes into account the correlated and ordinal structure of the value questions included in the databases, reducing arbitrariness in the construction of the cultural index.Would this index, represented here by the Individualism-Collectivism dimension, contribute to understanding regional differences in the level of SWB beyond socioeconomic variables, along the lines of the decomposition between fixed effects and variables discussed in sections 2.2 and 2.3?

4. Methodology

Firstly, the database adopted is presented, as well as the selection of the variables to be considered. We then move on to explain the empirical strategy, which consists of two stages: the construction of the Individualism-Collectivism cultural dimension, and the estimation of multilevel econometric models. The central objective is to verify how cultural aspects influence SWB, taking into account the characteristic differences between nations.

4.1 Database

The most comprehensive and open survey on perceptions and values is carried out by the World Values Survey Association. Currently, the WVS accumulates data from representative samples for more than 100 countries, each represented by a sample of approximately 1,000 individuals in each edition (wave). The edition used as the basis for the analysis in this paper is the 6th (2010-2014)(INGLEHART *et al.*, 2020).

For some countries that were not surveyed in this Wave 6, it was decided to also include the data from Wave 5 (2005-2009)[3].The analysis has a cross-section characteristic, since each country only appears in a single period in the model.

The strongest hypothesis adopted in the article concerns the stability of cultural traits, so that they are treated as immutable in the short term, both for the construction of the individualism index and for the estimation of the multilevel regression models presented. This strategy was applied not only from a theoretical point of view, but also to circumvent the possible under-representation of countries in the cultural groups contained in the WVS database.

Aggregate socio-economic data from the World Bank Database is also used, specifically GDP per capita (WORLD BANK, 2022a) and the Gini inequality index (WORLD BANK, 2022b), for the respective years of the WVS observations.

4.2 Dependent Variable

The SWB data used as the dependent variable is taken from the WVS, based on the question: "As a whole, how satisfied are you with your life?". The answers are categorical, on a numerical scale, where the first category represents the choice "Completely dissatisfied", up to the tenth and last category "Completely satisfied". This is a numerical scale, from 1 to 10, which will be treated, as usual in the SWB literature, as an approximation of a continuous variable.

4.3 Explanatory variable of interest, and multivariate analysis

[3]There is a discussion in the econometric literature about how many 2nd level observations are needed to estimate a good multilevel model in the context of comparing countries. The literature proposes that estimations contain a minimum of 25 countries, with results that are still problematic for inference, and a figure of 50 countries as a satisfactory number (MAAS; HOX, 2005, BRYAN; JENKINS, 2013, STEGMUELLER, 2013). By also considering WAVE 5 countries in the analysis, the aim of the article is to use as many national units as possible in the shortest time horizon available for the WVS. Robustness tests were carried out, excluding WAVE 5 data, without observing any significant statistical differences in the estimated results.

The WVS contains a series of questions on cultural values that will be used to construct the individualism index. Composed of the perception and attitude of individuals in each country on 9 behavioral issues, it will be the moderating factor of the effect on SWB.

The discussion of theoretical models of multivariate analysis is derived from the considerations of Fávero and Belfiore (2017), Mingoti (2007) and Greenacre (2017). The most widely used method is Principal Component Analysis (PCA), but this is not suitable for dealing with qualitative variables or Likert-type ordinal scales, which are precisely the variables of interest used in most surveys. To analyze this type of categorical variable, the method of choice is Multiple Correspondence Analysis (MCA).

The MCA method treats qualitative data starting from a frequency table represented by a matrix Z,where each row represents an index $i = 1, \dots, N$ for the observations, the columns are made up of an index $j = 1, \dots, q$ for the variables, and an index $h = 1, \dots, n_j = 1, \dots, J$ for the categories of each variable analyzed. This matrix Z is converted into a Burt's square matrix with the format $B = Z'D(w)Z$, where the matrix $D(w)$ is a weighting matrix based on the relative frequency of the observations.

From the matrix B, it is possible to establish the matrix $S = D(c)^{-\frac{1}{2}}(P - cc')D(c)^{-\frac{1}{2}}$, analogous to a residual matrix, where the term$(P - cc')$ represents the deviation of the observation c_{ij}, from the expected frequency p_{ij}. The inertial decomposition, which is nothing more than finding the eigenvalues $\varphi_1 \geq \varphi_2 \geq \cdots$ of the matrix S, is able to statistically indicate the degree of association of the variables tested.

One of the possible results is a matrix of coordinates showing the association between the variables analyzed, or vectors of the coordinates of each observation in this database with respect to the group of variables analyzed:

$$R_{it} = \sum_{h=1}^{J} \frac{Z_{ih} A_{ht}}{q\sqrt{\varphi_t}} \qquad (1)$$

Where, A is a coordinate matrix constructed with the eigenvectors $V(\varphi)$, q is the number of variables, φ_t the eigenvalues of the matrix S, and the original matrix Z. In these coordinates, the individuals closest to each other represent those whose values are similar. This will be the vector representing the individualism index.

The last step is to normalize the index values on a scale of 0 to 100, where 0 represents the lowest degree of individualism (or greater collectivism) and 100 the greatest predominance of declared individualistic behaviors and values (or less collectivism).For each country or cultural group presented in section 5.1, a simple average of their values will be calculated, representing the prevalence of individualistic values in that group.

The criteria for selecting the questions was to find those that were as similar as possible in form and answered by the largest group of countries. Table 1 shows nine questions devised by Schwartz (2012) and used by the WVS that meet these criteria.

Table 1 - Composition of the Individualism index for WVS.

Cultural Values	It's important to that person:	Indicate if this person is:
Creativity	Having new ideas and being creative; doing things your own way.	1 if "very little like you" to 6 "a lot like you".

Wealth	Being rich, having lots of money and material possessions.	
Security	Live in a safe place, avoid any situation that could be dangerous.	⋮
A good time	Having a good time.	
Success	To be successful, to be recognized for your achievements.	
Risk	Adventure and risk, living an exciting life.	1 if "very little like you" to 6 "a lot like you".
Good behavior	Behave properly, avoid saying anything that might sound wrong to others.	1if "very similar to you" to 6 "very little similar to you".
Environmental concern	Caring for the environment and saving vital resources.	⋮
Tradition	Follow tradition, the customs handed down by religion and family.	1 if "very similar to you" to 6 "very little similar to you".

Source: Prepared by the author, with data from WVS, based on Schwartz's(2012) questions.

4.4 Control variables

The list of variables used in the econometric estimations is described in Table 2 and includes variables commonly used in SWB studies, according to the literature presented in sections 2.3 and 3.4:

Table 2 - List of variables

Dependent Variable	Category	Description
As a whole, how satisfied are you with your life?		1 is "Completely dissatisfied" up to 10, "Completely satisfied".
1st level variables		
Gender		1 if female.
Age		Age in years.
How many children do you have?		Number of children
What is your marital status?	Married	1 if married.
	Living together	1 if living together.
	Divorced	1 if divorced.
	Widowed	1 if widowed.
	Single	1 if single.
As a whole, how would you describe your current state of health?	Bad	1 if declared themselves to be in poor health.
	Regular	1 if declared themselves to be in regular health.
	Good	1 if declared themselves to be in good health.
	Really good	1 if declared themselves to be in very good health.
What is your occupation at the moment?	Employee	1 if employed.
	Retired	1 if retired.
	Student	1 if studying.
	Unemployed	1 if unemployed.
On this income scale, where 1 represents the lowest income group and 10 the highest income group in your country, which income group is your family in?	Category 1	1 if it belongs to the first range.
	Category 2	1 if it belongs to the second range.
	⋮	⋮
	Category 10	1 if it belongs to the tenth lane.

What level of education have you achieved?	No education/incomplete primary school.	1 if no education/complete primary.
	Incomplete/secondary education	1 if has completed primary school, but not secondary school.
	Higher education incomplete	1 if has completed secondary school, but not higher education.
	Complete university degree	1 if has completed higher education.
How often do you attend religious services?	Never/practically never	1 if never (or almost never).
	Once a year or less	1 if once a year or less.
	Holidays	1 if only on holy days.
	Once a month	1 if once a month.
	Weekly or more times	1 if once a week or more.
2nd Level Variables		
GDP per capita		Respectively to the year of the WVS in USD/2022.
Gini Index		Respectively to the year of the WVS.
Individualism		Index built according to section 4.3.

Source: Prepared by the author, based on data from the WVS and World Bank Database. All the categorical variables (marital status, health, occupation, income, education and religious attendance) are organized as dummy variables for each category. The base categories are highlighted in italics in Table 3.

4.5 Multilevel econometric modeling

Multilevel (or hierarchical) modeling takes into account the fact that individuals are nested in subsets, each with their own particular attributes, even though they belong to a higher set where they share similarities, as described by Van de Vijver, Van Hemert and Poortinga(2015).

Its use is based on the probable existence of SWB variability corresponding to the country of residence, even after controlling for individual characteristics due to cultural attributes, and follows the structure of Raudenbush and Bryk (2002).

The variable of interest is individual SWB, measured at the first level of analysis (the individual). The explanatory variables, reported in Table 2, include characteristics of both levels. Therefore, the functional specification of the regression model to be estimated is given by:

$$\mathrm{SWB_{ij}} = f(\mathbf{X}, \mathbf{W}) \qquad (2)$$

Where $\mathrm{SWB_{ij}}$ corresponds to the individual's i level of SWB in the country j; **X** includes characteristics at the individual level, i.e. sociodemographic variables traditional in the literature; and **W** refers to characteristics at the national

level, such as GDP per capita and inequality indicators, and the national individualism index.

The simplest multilevel model is the null model. It has no regressors and is used for preliminary analysis of a database with hierarchical characteristics to capture variability within and between the groups analyzed. In this way, responses to the first-level dependent variable can be predicted on the basis of just one second-level parameter, the intercept term:

$$SWB_{ij} = \beta_{0j} + r_{ij} \quad (3)$$

In turn, the intercept β_{0j} represents the equation of the second-level model:

$$\beta_{0j} = \gamma_{00} + u_{0j} \quad (4)$$

Where γ_{00} represents the population average of the SWB, and $u_{0j} \sim N(0, \tau_{00})$ is the random effect term associated with the country j. Aggregating the two previous equations:

$$SWB_{ij} = \gamma_{00} + u_{0j} + r_{ij} \quad (5)$$

The immediate extension to the null model consists of the model with regressors referring only to the first level, X_{ij}, called the non-conditional model and represented by the equation:

$$SWB_{ij} = \beta_{0j} + \beta_{1j}X_{ij} + r_{ij} \quad (6)$$

In which X_{ij}only includes regressors at the individual level. The random effect coefficients, β_{0j} and β_{1j}, are also first-level, as is the error termr_{ij}. The parameters depend on the country-level variables W_j, the second-level random effects, u_{0j} and u_{1j}, plus the second-level fixed effects, γ_{00} and γ_{10}. The variance of the first-level error term is constant and represented by σ^2.

$$\beta_{0j} = \gamma_{00} + \gamma_{01}W_j + u_{0j} \quad (7)$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}W_j + u_{1j} \quad (8)$$

The fixed effects, γ_{00} and γ_{10}, correspond respectively to the intercept and the average slope in the second level units. The random effects, u_{0j} and u_{1j} are respectively the increments to the intercept and slope associated with the second level unit j. The intercept term β_{0j} represents the average level of each group of the variable of interest, made up of the mean of the dependent variable, γ_{00}, the effect of the second level variable moderated by the term γ_{01}, and the error termu_{0j}.

The coefficient β_{1j} represents the slope of the model, the relationship between the dependent variable and the first level independent variable, composed of the average slope of the groups γ_{10}, moderated by the effect of the second level variable through the coefficient $\gamma_{11}$and the random error termu_{1j}.

The combined equations illustrate the model in its expanded form:

$$Y_{ij} = \gamma_{00} + \gamma_{10}X_{ij} + \gamma_{01}W_j + \gamma_{11}X_{ij}W_j + u_{0j} + u_{1j}X_{ij} + r_{ij} \quad (9)$$

The interaction term $u_{1j}X_{ij}$ shows that the total value of the error will depend on the different values of X_{ij}, leading to a situation where heteroscedasticity exists in the model. The parameters and variances are estimated using the maximum likelihood method, as advocated by Hox (2010) in the context of multilevel models, due to its robustness, producing consistent and asymptotically efficient estimators, even in the presence of a dependent variable whose distribution is not normal. An alternative to this method would be the use of generalized least squares, but as pointed out by Hox (2010), this produces less efficient estimates and can lead to incorrect estimates of standard errors in estimates of models with more than one level.

5.Results

The countries are grouped according to the methodology adopted and validated in cluster analysis by Welzel (2013) for the WVS data. It is a criterion in which groups of countries are grouped together not only geographically, but also by their similar cultural and historical backgrounds. The adoption of this criterion results in nine cultural groups represented in Table 1.

5.1 Data analysis

The average level of satisfaction per cultural group is shown in Table 1.[4] Convergence can be seen with the results presented in sections 3.2, 3.3 and 4.2. The countries with the highest SWB averages are those with the highest socio-economic development, the Protestant Europe, Catholic Europe and New West cultural groups. However, the cultural group with the highest average level of satisfaction, Latin America, is not part of this group of rich countries.

Countries belonging to the Sub-Saharan Africa, Eastern Orthodox and Middle Eastern cultural groups have the lowest satisfaction averages, while they also have lower socio-economic indicators. The countries belonging to the Sino-Asian bloc, on the other hand, have relatively low average satisfaction, considering their positive socio-economic indicators.

Table 1 - Average life satisfaction by country and cultural group.

(continues)

Cultural Group/Country	Satisfaction	(C - G)	(C - W)	(G - W)
Latin America	7,74	-	-	0,82
Mexico	8,51	0,78	1,60	
Colombia	8,39	0,65	1,47	
Ecuador	7,92	0,18	1,00	
Brazil	7,85	0,12	0,94	
Uruguay	7,60	-0,13	0,69	
Argentina	7,48	-0,26	0,56	
Trinidad and Tobago	7,47	-0,27	0,55	
Chile	7,27	-0,47	0,35	
Peru	7,13	-0,60	0,22	
Protestant Europe	7,72	-	-	0,81
Norway	7,96	0,23	1,04	
Switzerland	7,91	0,18	0,99	
Finland	7,84	0,12	0,92	
Sweden	7,62	-0,10	0,71	
West Germany	7,53	-0,20	0,61	

[4]The (**Satisfaction**) column shows the average level of satisfaction for each country, and the average level for each cultural group; **(C - G),** the difference between the average satisfaction level of each country and the satisfaction level of its cultural group; (**C - W)** the difference between the average satisfaction level of each country and the average satisfaction of all the countries analyzed; and **(G - W)** the difference between the average satisfaction of each cultural group and the average satisfaction of all countries.

The Netherlands	7,49	-0,23	0,58	
New West	7,55	-	-	0,64
Canada	7,75	0,19	0,83	
New Zealand	7,65	0,10	0,73	
United Kingdom	7,54	-0,01	0,63	
United States	7,44	-0,11	0,53	
Australia	7,38	-0,17	0,47	
Catholic Europe	6,94	-	-	0,03
Andorra	7,14	0,19	0,22	
Cyprus	7,00	0,06	0,09	
France	6,86	-0,08	-0,05	
Spain	6,77	-0,17	-0,14	
Indian Asia	6,91	-	-	0,00
Thailand	7,57	0,65	0,65	
Pakistan	7,48	0,56	0,56	
Philippines	7,34	0,42	0,42	
Malaysia	7,13	0,22	0,22	
Singapore	6,97	0,06	0,06	
Indonesia	6,91	-0,01	-0,01	
India	5,01	-1,91	-1,91	
Sinic Asia	6,87	-	-	-0,05
Vietnam	7,09	0,23	0,18	
Japan	6,91	0,04	0,00	
Taiwan	6,89	0,02	-0,03	
China	6,86	-0,01	-0,06	
Hong Kong	6,85	-0,02	-0,07	
South Korea	6,61	-0,26	-0,30	
Ex-Communist West	6,75	-	-	-0,16
Slovenia	7,35	0,60	0,44	
East Germany	7,25	0,50	0,34	
Poland	7,06	0,31	0,15	
Estonia	6,20	-0,55	-0,71	
Hungary	5,89	-0,86	-1,02	
Middle East	6,40	-	-	-0,51
Qatar	8,01	1,61	1,10	
Peru	7,27	0,87	0,36	
Libya	7,26	0,86	0,35	
Kuwait	7,21	0,81	0,29	
Bahrain	6,79	0,39	-0,12	
Jordan	6,61	0,21	-0,30	
Lebanon	6,50	0,10	-0,41	
Iran	6,43	0,03	-0,49	
Algeria	6,30	-0,10	-0,61	
Mali	6,07	-0,33	-0,84	
Morocco	5,94	-0,46	-0,97	
Iraq	5,91	-0,49	-1,00	
Yemen	5,89	-0,51	-1,03	
Palestine	5,62	-0,78	-1,29	
Tunisia	5,58	-0,82	-1,33	

Egypt	5,01	-1,39	-1,90	
Eastern Orthodox	6,21	-	-	-0,71
Uzbekistan	7,89	1,68	0,97	
Kazakhstan	7,25	1,05	0,34	
Kyrgyzstan	6,96	0,76	0,05	
Azerbaijan	6,74	0,54	-0,17	
Romania	6,64	0,44	-0,27	
Russia	6,13	-0,08	-0,79	
Serbia and Montenegro	6,01	-0,20	-0,91	
Ukraine	5,90	-0,31	-1,02	
Belarus	5,80	-0,41	-1,11	
Moldova	5,45	-0,75	-1,46	
Georgia	5,45	-0,76	-1,47	
Armenia	5,23	-0,98	-1,69	
Bulgaria	5,22	-0,98	-1,69	
Sub-Saharan Africa	6,05	-	-	-0,86
South Africa	6,67	0,62	-0,24	
Rwanda	6,47	0,41	-0,45	
Ghana	6,42	0,37	-0,49	
Nigeria	6,26	0,21	-0,65	
Zambia	6,06	0,01	-0,85	
Zimbabwe	6,04	-0,01	-0,87	
Burkina Faso	5,56	-0,50	-1,36	
Ethiopia	4,94	-1,11	-1,97	
Average satisfaction worldwide	6,91			

Source: Prepared by the author, based on WVS data.

The initial observation assumes that SWB is determined by both stable and circumstantial factors. Among the circumstantial factors, the hypothesis is that the socioeconomic context is a determinant of SWB, in line with the average satisfaction data observed for most of the cultural groups in Table 1. The cases in which this hypothesis is not confirmed are Latin America, the first group with the best average satisfaction level, and Asia, only the sixth group on this scale.

The other hypothesis is the presence of stable contextual factors in determining SWB. The high average of the Latin American countries compared to the other cultural blocs, as well as the modest average of the Sino-Asian countries, would suggest that there is a cultural component explaining part of the difference in SWB between the countries.

The results of the individualism index by cultural group are shown in Table 2. This is a normalized ranking where 0 is the lowest value of individualism and 100 the highest value of individualism. The index shown in the gray lines is the median of the values for that cultural group. The **(C-G)** column represents the difference between the country's index and its respective cultural group.

Table 2 - Individualism by country and cultural group.

Country	Idv.	(C - G)	Country	Indiv.	(C - G)
Middle East	60,7	-	**Catholic Europe**	36,9	-
Qatar	100,0	39	Cyprus	63,6	27
Mali	85,0	24	France	39,0	2
Jordan	81,9	21	Andorra	34,7	-2
Tunisia	80,8	20	Spain	28,1	-9
Libya	79,2	19	**Eastern Orthodox**	32,8	-
Algeria	76,8	16	Uzbekistan	59,2	26
Kuwait	73,8	13	Georgia	57,1	24
Iraq	63,0	2	Romania	48,2	15
Lebanon	58,4	-2	Kyrgyzstan	45,0	12
Yemen	57,3	-3	Azerbaijan	42,1	9
Iran	52,5	-8	Armenia	40,5	8
Peru	50,3	-10	Moldova	32,8	0
Bahrain	48,1	-13	Bulgaria	29,2	-4
Egypt	47,9	-13	Russia	26,4	-6
Palestine	46,0	-15	Belarus	25,4	-7
Morocco	44,7	-16	Kazakhstan	25,3	-7
Sub-Saharan Africa	59,9	-	Ukraine	24,1	-9
			Serbiaand		
Ghana	76,2	16	Montenegro	22,2	-11
Nigeria	72,8	13	**Ex-Communist West**	31,7	-
Zimbabwe	63,7	4	Hungary	39,8	8
Burkina Faso	63,2	3	Slovenia	38,5	7
Zambia	56,5	-3	Poland	31,7	0
South Africa	45,7	-14	East Germany	24,9	-7
Ethiopia	36,8	-23	Estonia	17,5	-14
Rwanda	34,2	-26	**New West**	23,4	-
Latin America	49,4	-	Canada	37,0	14
Colombia	72,8	23	United Kingdom	32,4	9
Mexico	62,1	13	Australia	23,4	0
Ecuador	59,7	10	New Zealand	20,0	-3
Trinidad and Tobago	56,4	7	United States	18,7	-5
Chile	49,4	0	**Protestant Europe**	23,3	-
Uruguay	47,5	-2	Switzerland	27,6	4
Brazil	46,4	-3	Sweden	27,6	4
Peru	40,3	-9	West Germany	24,8	1
Argentina	29,6	-20	Finland	21,8	-1
Indian Asia	44,0	-	Norway	18,3	-5
Pakistan	58,1	14	The Netherlands	6,4	-17
Philippines	55,8	12	**Sinic Asia**	21,8	-
India	48,4	4	Vietnam	36,5	15
Malaysia	44,0	0	South Korea	24,7	3
Indonesia	43,8	0	Hong Kong	22,2	0
Thailand	35,1	-9	Taiwan	21,4	0
Singapore	23,4	-21	China	18,2	-4
			Japan	0,0	-22

Source: Prepared by the author based on WVS data.

The countries with the highest levels of Individualism are in the Middle Eastern and Sub-Saharan African cultural groups, while the countries with the lowest levels of Individualism are in the New West, Protestant Europe and Sinic Asia groups. This result is noteworthy because, as presented in sections 3.3 and 3.4, Western European countries are usually presented as a paradigm of individualistic behavior. However, in the WVS sample, their behavior is much closer to the countries of the Sino-Asian peninsula, which are seen as a parameter of collectivist behavior, i.e. at the opposite end of the dimension. In this case, the Sinic Asia cultural group is in the expected position, with the lowest level of individualism among the countries in the sample.

At the opposite end of the spectrum, the highest levels of individualism were found in the Middle East and Sub-Saharan Africa groups, followed at some distance by the Latin America group. This is another result that is not entirely in line with the justifications presented in sections 3.3 and 3.4, since individuals from Middle Eastern countries are considered to be group-oriented, with traditions and behavior that conforms to others, i.e. closer to the collectivist mindset. However, 75% of the countries in this group had an individualism index above 50, indicating intra-group consistency in this behavioral dimension.

5.2 Estimation results

Table 3 shows the model estimators. Set I represents the non-conditional model, with the sociodemographic variables, sets II and III include the context variables at the second level (GDP per capita and Gini index) and the individualism index at the individual level. Sets IV and V include dummies from each cultural group, representing respectively the level and interaction effects with the individualism index (at 1st level, original points of the coordinates of equation (1)). Finally, set VI represents the individualism index at 2nd level.

As many of the variables used in the analysis are categorical, their effects must be interpreted on the basis of the omitted reference category. In the case of the regional dummies, in the group of level dummies, the category omitted was Sub-Saharan Africa, as it was the group with the lowest average level of satisfaction, as shown in Table 1. In the case of the regional dummies interacting with the individualism index, the cultural group omitted was the Eastern Orthodox, chosen because it represents the median of the individualism values shown in Table 2.

Table 3 - Estimation of multilevel models.

(continues)

Models	**I**	**II**	**III**	**IV**	**V**	**VI**
Constant	4,705***	4,689***	0,495	1,943***	0,517	1,776**
Female	0,166***	0,168***	0,159***	0,159***	0,157***	0,158***
Age	-0,038***	-0,038***	-0,032***	-0,039***	-0,031***	-0,039***
Age squared	0,000***	0,000***	0,000***	0,000***	0,000***	0,000***
Civil status						
single (omitted category)						
Married	0,249***	0,253***	0,258***	0,258***	0,258***	0,253***
living together	0,112***	0,118***	0,116***	0,114***	0,116***	0,109***
Divorced	-0,246***	-0,245***	-0,251***	-0,252***	-0,252***	-0,252***
Widower	-0,147***	-0,145***	-0,135***	-0,135***	-0,136***	-0,137***
Health						
bad (omitted category)						
regular	1,011***	1,016***	1,031***	1,032***	1,032***	1,027***
good	1,655***	1,659***	1,686***	1,687***	1,688***	1,684***
verygood	2,241***	2,223***	2,253***	2,254***	2,256***	2,272***
Occupation						
employee	0,263***	0,263***	0,264***	0,263***	0,265***	0,264***
retired	0,317***	0,312***	0,315***	0,314***	0,314***	0,319***
student	0,424***	0,420***	0,427***	0,427***	0,428***	0,433***
unemployed (omitted category)						
Income						
Category 1 (omitted category)						
Category2	0,021	0,035	0,047	0,047	0,048	0,031
Category3	0,218***	0,235***	0,241***	0,241***	0,241***	0,224***
Category4	0,498***	0,516***	0,532***	0,532***	0,532***	0,513***
Category5	0,761***	0,778***	0,791***	0,791***	0,789***	0,771***
Category6	0,982***	1,003***	1,018***	1,017***	1,015***	0,996***
Category7	1,182***	1,202***	1,216***	1,216***	1,213***	1,194***
Category8	1,430***	1,446***	1,474***	1,474***	1,471***	1,457***
Category9	1,464***	1,479***	1,522***	1,523***	1,524***	1,506***
Category10	1,570***	1,574***	1,568***	1,569***	1,570***	1,569***
Education						
No education/incomplete primary (omitted category)						
Primary complete/secondary incomplete	-0,038	-0,043	-0,026	-0,026	-0,025	-0,019
Completed secondary school/incomplete higher education	-0,036	-0,040	-0,020	-0,020	-0,016	-0,012
Complete university degree	0,037	0,032	0,056	0,056	0,060*	0,064*

(continued)

Models	**I**	**II**	**III**	**IV**	**V**	**VI**

Religious Frequency						
Less than once a year/ never or practically never (omitted)						
Once a year or less	-0,033	-0,034	-0,029	-0,031	-0,029	-0,029
Holidays	0,035*	0,034	0,039*	0,037*	0,039*	0,038*
Once a month	0,077***	0,077***	0,079***	0,076***	0,076***	0,076***
Weekly or more	0,093***	0,087***	0,108***	0,107***	0,106***	0,113***
Number of children	0,027***	0,026***	0,025***	0,025***	0,025***	0,026***
Individualism		0,099***	0,101***	0,101***	0,125***	0,007
log (gdp per capita)			0,361***	0,105	0,361***	0,228***
Gini index			0,025***	0,024**	0,025***	0,014
Dummy region						
Sub-Saharan Africa (omitted region)						
Protestant Europe				1,589***		
New West				1,245***		
Catholic Europe				0,996**		
Communist West				1,413***		
Eastern Orthodox				0,770***		
Indian Asia				0,896***		
Islamic East				0,278		
Sinic Asia				1,099***		
Latin America				1,607***		
Interaction Dummy (region*individualism)						
Eastern Orthodox (omitted region)						
Protestant Europe					-0,003	0,019**
New West					0,055	0,008
Catholic Europe					0,068	-0,003
Communist West					0,020	0,012
Indian Asia					-0,094***	0,004
Islamic East					-0,054**	-0,009**
Sinic Asia					0,035	0,012
Latin America					0,045	0,014**
Sub-Saharan Africa					-0,080***	-0,011**
ICC	0,132	0,136	0,897	0,052	0,088	0,539
n	89,559	89,162	85,665	85,665	85,665	86,049
N	73	73	70	70	70	70

Source: Prepared by the author, based on data from the WVS and World Bank Database.
(P-values: *** p<0,01, ** p<0,05, * p<0,10).

It is possible to observe a consistency in the group of estimators in the sociodemographic category, in line with the results of the literature. Belonging to the female gender group has a positive effect on SWB, while the effect of age is negative over time. Belonging to the married/cohabiting group has a positive effect on SWB compared to single individuals, while divorced/widowed

individuals have a negative effect. In the health category, there is an increasing and orderly positive effect in relation to the base category, "poor state of health".

There are also positive effects of being employed, retired or studying, compared to the unemployed base category. In the case of the income bracket categories, with the exception of the second category, all showed positive and decreasing effects from the eighth category onwards. With regard to attendance at religious services, a positive effect can be seen for those who attend these events more frequently, especially in the categories with monthly attendance or higher. Finally, there was a small positive effect of the number of children on SWB.

For second-level variables in models III to V, only two controls were chosen, the logarithmic form of GDP per capita and the Gini index, to keep the model as lean as possible. In addition, by not adopting other socio-economic indices exogenous to the WVS, potential loss of observations is avoided. There is a positive effect of GDP per capita on SWB in models III, V and VI, which do not include the effect of regional dummies. In model IV, where these dummies are included, the effect of GDP per capita loses significance. Finally, the variable representing the Gini index showed low but positive estimators in almost all the models, i.e. a higher degree of inequality would be aligned with higher levels of SWB.

Estimators IV and V allow us to check the regional effect on average levels of satisfaction. The comparisons are based on the Sub-Saharan Africa region, and all the dummies showed a significant and positive effect on SWB, with the exception of the Eastern Islamic cultural group. The greatest effects were found in the groups: Latin America, Protestant Europe, the Ex-Communist West and the New West; in this order of magnitude.

Finally, we analyze the effect of the individualism index on the level of SWB. There is a general positive effect (Models II to V), i.e. the higher the level of individualism, the higher the SWB on average, in line with the observations in section 3.4. The penultimate model (V) is the interaction variables, exploring the cultural groups and the individualism index together. The interpretation of these dummies represents the hypothesis addressed in this study, i.e. cultural values as mediators of SWB. The reference group chosen was the Eastern Orthodox, as it is the median of the cultural groups in terms of individualism values.

Only three cultural groups showed significance in their estimators, with negative effects: Indian Asia, Islamic East and Sub-Saharan Africa. Using the estimator for the Indian Asia group as an example, the interpretation is that the effect on SWB of the individualism index is negative in this group, compared to the Eastern Orthodox group. In short, individualistic behavior brings negative returns to SWB in these cultural groups, compared to the comparison group.

With regard to the second-level individualism index (VI), there are negative effects for the Islamic East and Sub-Saharan Africa groups in relation to the median reference group. Unlike model V, there is a positive effect in the Protestant Europe and Latin America groups. In other words, in relation to the

reference group, belonging to these groups has a positive relative impact on the level of satisfaction, although the magnitudes are lower than in model V.

6. Final remarks

The aim was to understand whether the differences in declared levels of satisfaction with life had some cultural character, represented by the individualism-collectivism dimension. The distinction was the adoption of this index together with dummies of cultural groups, in a multilevel estimation. When looking at the estimators of the general effect of cultural individualism on the level of satisfaction, i.e. without considering the distinction between cultural groups, the effect of the level of individualism is positive on the general level of SWB.

When looking at the estimators of the interaction between the individualism variable and the regional dummies, i.e. the effects of this variable on SWB in each cultural group, timid effects were found, limited to a few groups: negative in the Indian Asia, Islamic East and Sub-Saharan Africa groups; and slightly positive in the Protestant Europe and Latin America groups. These results together indicate that there is a cultural effect on SWB, although it does not extend to all the groups observed in the WVS.

It is necessary to note the limitations of these results. The construction of the index contains a degree of prerogative on the part of the researcher, both in the choice of data reduction method and in the selection of questions that make up this dimension. The choice is limited to the characteristics of the WVS, with two problems: the absence of some European countries, which are now only surveyed in the European Values Survey and; values questions that are not asked in the two surveys, making it impossible to make them compatible.

Another limitation is to find in the WVS a set of value questions applied in the majority of countries, imposing a choice on the researcher: work for a long time to select the most applied questions in the database, or reduce the scope of the research by working with smaller groups of countries. In the case of this article's hypothesis, it may be that some other cultural component is involved in determining SWB, although it would be represented in variables not explored in this article.

The discussion of the use of SWB measures as a guide for public policies (ODERMATT; STUTZER, 2018) or for evaluating the performance of countries in international contexts, as presented in HELLIWELL et al. (2019) for example, should be carried out with care. The results presented in this article, in line with other studies presented in the literature on culture and SWB, suggest the existence of moderating effects of cultural dimensions, in this case individualism, on the degree of satisfaction of individuals belonging to countries with different cultural backgrounds.

For future perspectives, it would be interesting to see what the impacts of the COVID-19 shock were on SWB, whose economic and mental health effects had the potential to generate large variations in SWB data. Would it be possible

to identify the effects of cultural characteristics on well-being in this context of economic downturn, uncertainty, bereavement and isolation? Will the magnitude of the objective shock to SWB be well represented by the measures? This is an interesting challenge, depending on how the surveys incorporate these questions.

References

ANGNER, E. The evolution of eupathics: The historical roots of subjective measures of well-being. **International Journal of Wellbeing**, v. 1, n. 1, p. 4–41, 2011. DOI: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=799166.

BAUMEISTER, R. F.; LEARY, M. R. The need to belong: Desire for interpersonal attachments as a fundamental human motivation. **Psychological Bulletin**, v. 117, n. 3, p. 497–529, 1995. DOI: 10.1037/0033-2909.117.3.497.

BRYAN, Mark L.; JENKINS, Stephen P. Regression analysis of country effects using multilevel data: A cautionary tale. 2013. Disponível em: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2322088.

CHAO, R. K. Extending Research on the Consequences of Parenting Style for Chinese Americans and European Americans. **Child Development**, v. 72, n. 6, p. 1832–1843, 2001. DOI: https://srcd.onlinelibrary.wiley.com/doi/abs/10.1111/1467-8624.00381.

CHOI, S.-C.; KIM, K. A conceptual exploration of the Korean self in comparison with the Western self. **Contributions in Psychology**, v. 42, p. 29–42, 2003.

COLANDER, D. Retrospectives: Edgeworth's Hedonimeter and the Quest to Measure Utility. **Journal of Economic Perspectives**, v. 21, n. 2, p. 215–225, 2007. DOI: https://www.aeaweb.org/articles?id=10.1257/jep.21.2.215.

DEATON, A. Income, Health, and Well-Being around the World: Evidence from the Gallup World Poll. **Journal of Economic Perspectives**, v. 22, n. 2, p. 53–72, 2008. DOI: https://www.aeaweb.org/articles?id=10.1257/jep.22.2.53.

DELLE FAVE, A. *et al.* The Eudaimonic and Hedonic Components of Happiness: Qualitative and Quantitative Findings. **Social Indicators Research**, v. 100, n. 2, p. 185–207, 2011. DOI: https://link.springer.com/article/10.1007/s11205-010-9632-5#citeas.

DIENER, Ed; DIENER, M.; DIENER, C. Factors Predicting the Subjective Well-Being of Nations. *In*: DIENER, E. (org.). **Culture and Well-Being. Social Indicators Research Series**. 1. ed. Dordrecht: Springer, 2009. v. 38, p. 43–70.

DIENER, Ed; OISHI, S. Money and happiness: Income and subjective well-being across nations. *In*: DIENER, E.; SUH, E. M. (org.). **Culture and subjective well-being.** The MIT Press, 2000. p. 185–218.

EASTERLIN, R. Does Economic Growth Improve the Human Lot? Some Empirical Evidence. *In*: DAVID, P.; REDER, M. (org.). **Nations and Households in Economic Growth**. Elsevier, 1974. p. 89–125. *E-book*. DOI: https://www.sciencedirect.com/science/article/pii/B9780122050503500087.

FÁVERO, L. P.; BELFIORE, P. **Manual de análise de dados**. 1. ed. Rio de Janeiro: Elsevier, 2017.

FLEURBAEY, M. Beyond GDP: The Quest for a Measure of Social Welfare. **Journal of Economic Literature**, v. 47, n. 4, p. 1029–1075, 2009. DOI: https://www.aeaweb.org/articles?id=10.1257/jel.47.4.1029.

FRIJDA, N. H.; MANSTEAD, A. S. R.; BEM, S. **Emotions and Beliefs**. New York: Cambridge University Press, 2000.

GOLGHER, A.; COUTINHO, R. Z. Life satisfaction in Brazil: an exploration of theoretical correlates and age, period and cohort variations using the World Values Survey (1991-2014). **Revista Brasileira de Estudos de População**, v. 37, p. 1–27, 2020. DOI: https://doi.org/10.20947/S0102-3098a0108.

GRAHAM, C. **Happiness around the world: The paradox of happy peasants and miserable millionaires**. Oxford University Press, 2012.

GREENACRE, M. **Correspondence Analysis in Practice**. New York: Chapman and Hall/CRC, 2017. v. 3

HAYBRON, D. M. Do We Know How Happy We Are? On Some Limits of Affective Introspection and Recall. **Nous**, v. 41, n. 3, p. 394–428, 2007. DOI: https://doi.org/10.1111/j.1468-0068.2007.00653.x.

HELLIWELL, J.; LAYARD, R.; SACHS, J. **World Happiness Report 2019**. New York: 2019. DOI: https://www.nationalwellbeingservice.org/wp-content/uploads/2019/03/World-Happiness-Report-2019.pdf.

HOFSTEDE, G.; HOFSTEDE, G. J.; MINKOV, M. **Cultures and organizations: Software of the mind**. 3. ed. New York: Mcgraw-Hill, 2010.

HOX, J. **Applied multilevel analysis**. Amsterdam: TT-Publikaties, 1995.

HOX**, J. Multilevel Analysis: Techniques and Applications.** Routledge, 2010.

INGLEHART, R. *et al.***World Values Survey: All Rounds – CountryPooled Datafile**. Madrid, Spain e Vienna, Austria: JD Systems Institute & WVSA

Secretariat, 2020. DOI: http://www.worldvaluessurvey.org/WVSDocumentationWVL.jsp.

INKELES, A. **Nationalcharacter: A psycho-social perspective**. New York: Routledge, 2017.

JOHNSTON, B. R. *et al.* On Happiness. **American Anthropologist**, v. 114, n. 1, p. 6–18, 2012. DOI: https://doi.org/10.1111/j.1548-1433.2011.01393.x.

KAHNEMAN, D.; KRUEGER, A. B. Developments in the Measurement of Subjective Well-Being. **Journal of Economic Perspectives**, v. 20, n. 1, p. 3–24, 2006. DOI: https://www.aeaweb.org/articles/pdf/doi/10.1257/089533006776526030.

KIM, H. K.; MCKENRY, P. C. The Relationship Between Marriage and Psychological Well-being. **Journal of Family Issues**, v. 23, n. 8, p. 885–911, 2002. DOI: https://doi.org/10.1177/019251302237296.

LAYARD, P. R. G.; LAYARD, R. **Happiness: Lessons from a new science**. Penguin UK, 2011.

LUCAS, R. E. *et al*. Unemployment Alters the Set Point for Life Satisfaction. **Psychological Science**, v. 15, n. 1, p. 8–13, 2004. DOI: https://doi.org/10.1111/j.0963-7214.2004.01501002.x.

MARKUS, H. R.; KITAYAMA, S. Cultures and Selves. **Perspectives on Psychological Science**, v. 5, n. 4, p. 420–430, 2010. DOI: https://doi.org/10.1177/1745691610375557.

MAAS, Cora JM; HOX, Joop J. Sufficient sample sizes for multilevel modeling. **Methodology**, v. 1, n. 3, p. 86-92, 2005.

MCMAHON, D. M. **Happiness: A history**. Grove Press, 2006.

MESQUITA, B.; FRIJDA, N. H. Cultural variations in emotions: A review. **Psychological Bulletin**, v. 112, n. 2, p. 179–204, 1992. DOI: https://doi.org/10.1037/0033-2909.112.2.179.

MINGOTI, S. A. **Análise de dados através de métodos estatística multivariada: uma abordagem aplicada.**Belo Horizonte: Editora UFMG, 2007.

MINKOV, M. **Cross-Cultural Analysis: The Science and Art of Comparing the World's Modern Societies and Their Cultures**. SAGE Publications, 2012. *E-book*. DOI: https://books.google.com.br/books?id=Ww9zAwAAQBAJ.

MURRELL, S. A.; SALSMAN, N. L.; MEEKS, S. Positive and Negative Psychological States and Economic Status as Mediators of the Relationship of

Education to Fatigue Among Older Adults. **Research on Aging**, v. 26, n. 6, p. 673–700, 2004. DOI: https://doi.org/10.1177/0164027504268490.

NISBETT, R. **The Geography of Thought: How Asians and Westerners Think Differently...and Why**. New York: Free Press, 2004. *E-book*. DOI: https://books.google.com.br/books?id=525HX623L_cC.

ODERMATT, R.; STUTZER, A. Subjective well-being and public policy**. Handbook of Well-Being**, p. 955, 2018.

PCHELIN, P.; HOWELL, R. T. The hidden cost of value-seeking: People do not accurately forecast the economic benefits of experiential purchases. **The Journal of Positive Psychology**, v. 9, n. 4, p. 322–334, 2014. DOI: https://doi.org/10.1080/17439760.2014.898316.

PRAAG, B. van; FERRER-I-CARBONELL, A. **Happiness Quantified: A Satisfaction Calculus Approach**. Oxford University Press, 2004.

RAUDENBUSH, S. W.; BRYK, A. S. **Hierarchical linear models: Applications and data analysis methods**. Sage, 2002. v. 1

RICHERSON, P. J.; BOYD, R. **Not by genes alone: How culture transformed human evolution**. University of Chicago press, 2008.

ROJAS, M. The complexity of well-being: A life-satisfaction conception and a domains-of-life approach. **Researching well-being in developing countries: From theory to research**, p. 259–280, 2007. DOI: https://www.academia.edu/download/11227006/luis_mariano4.pdf.

ROSEN, Frederick. **Classical Utilitarianism from Hume to Mill**. London: Routledge, 2003.

RYFF, C. D.; KEYES, C. L. M. The structure of psychological well-being revisited. **Journal of Personality and Social Psychology**, v. 69, n. 4, p. 719–727, 1995. DOI: https://doi.org/10.1037/0022-3514.69.4.719.

SACKS, D. W.; STEVENSON, B.; WOLFERS, J. The new stylized facts about income and subjective well-being. **Emotion**, v. 12, n. 6, p. 1181–1187, 2012. DOI: https://doi.org/10.1037/a0029873.

SANDERSTROM, K. L.; MARTIN, D. D.; FINE, G. A. Símbolos, selves e realidade social: uma abordagem interacionista simbólica à psicologia social e à sociologia. **Rio de Janeiro: Vozes**, 2016.

SCHIMMACK, U. *et al*. Culture, personality, and subjective well-being: Integrating process models of life satisfaction. **Journal of Personality and Social**

Psychology, v. 82, n. 4, p. 582–593, 2002. DOI: https://doi.org/10.1037/0022-3514.82.4.582.

SCHWARTZ, S. H. An Overview of the Schwartz Theory of Basic Values. **Online Readings in Psychology and Culture**, v. 2, n. 1, 2012. DOI: http://dx.doi.org/10.9707/2307-0919.1116.

SELIGMAN, M. E. P. *et al*. Positive Psychology Progress: Empirical Validation of Interventions. **American Psychologist**, v. 60, n. 5, p. 410–421, 2005. DOI: https://doi.org/10.1037/0003-066X.60.5.410.

SEN, A. Health: perception versus observation. **BMJ**, v. 324, n. 7342, p. 860–861, 2002. DOI: https://doi.org/10.1136/bmj.324.7342.860.

STEGMUELLER, Daniel. How many countries for multilevel modeling? A comparison of frequentist and Bayesian approaches. **American journal of political science**, v. 57, n. 3, p. 748-761, 2013.

STEPTOE, A.; DEATON, A.; STONE, A. A. Subjective wellbeing, health, and ageing. **The Lancet**, v. 385, n. 9968, p. 640–648, 2015. DOI: https://doi.org/10.1016/S0140-6736(13)61489-0.

STEVENSON, B.; WOLFERS, J. The Paradox of Declining Female Happiness. **American Economic Journal: Economic Policy**, v. 1, n. 2, p. 190–225, 2009. DOI: https://www.aeaweb.org/articles?id=10.1257/pol.1.2.190.

SUH, E. *et al*. The shifting basis of life satisfaction judgments across cultures: Emotions versus norms. **Journal of Personality and Social Psychology**, v. 74, n. 2, p. 482–493, 1998. DOI: https://doi.org/10.1037/0022-3514.74.2.482.

SUH, E. M.; DIENER, E.; UPDEGRAFF, J. A. From Culture To Priming Conditions. **Journal of Cross-Cultural Psychology**, v. 39, n. 1, p. 3–15, 2008. DOI: https://doi.org/10.1177/0022022107311769.

TAY, L.; DIENER, E. Needs and subjective well-being around the world. **Journal of personality and social psychology**, v. 101, n. 2, p. 354, 2011. DOI: https://psycnet.apa.org/journals/psp/101/2/354.html?uid=2011-12249-001.

TELLA, R. di; MACCULLOCH, R. Some Uses of Happiness Data in Economics. **Journal of Economic Perspectives**, v. 20, n. 1, p. 25–46, 2006. DOI: https://www.aeaweb.org/articles?id=10.1257/089533006776526111.

THALER, R. H. From Homo Economicus to Homo Sapiens. **Journal of Economic Perspectives**, v. 14, n. 1, p. 133–141, 2000. DOI: DOI: 10.1257/jep.14.1.133.

TRIANDIS, H. C. *et al.* Individualism and collectivism: Cross-cultural perspectives on self-ingroup relationships. **Journal of Personality and Social Psychology**, v. 54, n. 2, p. 323–338, 1988. DOI: https://doi.org/10.1037/0022-3514.54.2.323.

TRIANDIS, H. C. Individualism-Collectivism and Personality. **Journal of Personality**, v. 69, n. 6, p. 907–924, 2001. DOI: https://doi.org/10.1111/1467-6494.696169.

UCHIDA, Y.; NORASAKKUNKIT, V.; KITAYAMA, S. Cultural constructions of happiness: theory and emprical evidence. **Journal of Happiness Studies**, v. 5, n. 3, p. 223–239, 2004. DOI: https://doi.org/10.1007/s10902-004-8785-9.

UCHIDA, Y.; TAKAHASHI, Y.; KAWAHARA, K. Changes in Hedonic and Eudaimonic Well-Being After a Severe Nationwide Disaster: The Case of the Great East Japan Earthquake. **Journal of Happiness Studies**, v. 15, n. 1, p. 207–221, 2014.

VAN DE VIJVER, F. J. R.; VAN HEMERT, D. A.; POORTINGA, Y. H. **Multilevel Analysis of Individuals and Cultures**. 1. ed. New York: Psychology Press, 2015.

VEENHOVEN, R. *et al.***Happiness in nations: Subjective appreciation of life in 56 nations 1946–1992.** Erasmus University Rotterdam, 1993.

WELZEL, C. **Freedom rising: human empowerment and the quest for emancipation.** .New York: Cambridge University Press, 2013.

WILSON, W. R. Correlates of avowed happiness. **Psychological Bulletin**, v. 67, n. 4, p. 294–306, 1967. DOI: https://doi.org/10.1037/h0024431.

WORLD BANK, W. D. I. database. **GDP per capita, PPP (constant 2017 international $)**. Eurostat-OECD PPP Programme, 2022a. DOI: https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD.

WORLD BANK, W. D. I. database. **Gini index**. 2022b. DOI: https://data.worldbank.org/indicator/SI.POV.GINI.

YAP, S. C. Y.; ANUSIC, I.; LUCAS, R. E. Does personality moderate reaction and adaptation to major life events? Evidence from the British Household Panel Survey. **Journal of Research in Personality**, v. 46, n. 5, p. 477–488, 2012. DOI: https://doi.org/10.1016/j.jrp.2012.05.005.