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SOCIAL PSYCHOLOGY | RESEARCH ARTICLE

Cultural validity trouble in measuring value concept: A study on validity of Schwartz Value Survey in Turkish culture

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Abstract: The purpose of this study is to test construct validity of Schwartz Value Survey in Turkish culture. Participants of the research comprise 389 teachers selected through cluster sampling method. The research is performed under five stages: (i) English to Turkish translation validity, (ii) language and meaning validity in Turkish language, (iii) content validity, (iv) confirmatory factor analysis (CFA), and (v) exploratory factor analysis (EFA). The findings reveal that SVS is deprived of construct validity in Turkish cultural context. When CFA results are interpreted, it is clear that original factor structure of SVS does not maintain the same factor structure for Turkish culture. The goodness-of-fit indices indicated that variance and covariance of the survey were not explained by the model. EFA results reveal that all items congregated on 12 factors and some factors are overlapping or loaded under different factors.

Subjects: Psychological Methods & Statistics; Social Psychology; Work & Organizational Psychology

Keywords: value; Schwartz Value Survey; validity; cultural adaptation



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PUBLIC INTEREST STATEMENT

Values have indispensable roles on shaping human attitudes and behaviors. Although for decades, researchers were interested in values concept, no theory focusing on values as comprehensive as Schwartz's emerged. His theory describes human values as well as universal structure of values. Specifically, 10 value types are mentioned in the theory as the basic human values of people in any culture. Even different cultures can be compared on generalizable grounds, we believe that measuring values is peculiar to a specific culture. The current study explores the validity of Schwartz Value Survey in Turkish culture. As expected, the results of the study showed that Schwartz Value Survey lacks construct validity. Culture specific concepts need to be considered while measuring values since value types may be expressed differently within different cultures. Further research is required to make cultural-related modifications to the survey or develop instruments for measuring value preferences adjusted to Turkish culture.

Value concept has been of debate along with Spranger since the first quarter of twentieth century (1928) with being scrutinized under philosophy of science through establishing the connection between “moral rules” (Baloğlu & Balgamiş, 2005). Later it has entered the field of different disciplines such as anthropology (Kluckhohn, 1951), sociology (Williams, 1968), psychology (Finegan, 2000; Rokeach, 1973), business administration (Crosby & Bitner, 1990), and education (Halstead & Taylor, 1996; Haydon, 2006). There is no consensus about common definition of value concept even it has been studied by many authors, entrance of the concept into many different disciplines makes its definition quite complicated (Dilmaç & Ekşi, 2007). As well as being used with some concepts such as knowledge, belief, social norm, view of life, and ideology, value is mostly utilized in place of “ethic” concept (Lyons, 2003).

When the related literature is examined, different definitions and classifications related to “value” concept can be reached. Conceptually, Meglino and Ravlin (1998) define value as (i) internalized belief of one about how to behave (p. 354), whereas Schwartz (1996) defines it as (ii) ideals that serve as guiding tenets for human life with having various importance and change with regard to desire and circumstances (p. 122). Considering value concept from sociological perspective, it refers to generalized moral principles or beliefs that reflect common feelings, thoughts, goals, and interests of any social group or community with being acknowledged as true and necessary by majority of the members for maintaining the existence, unity, functioning, and continuity of a social group or community (Kızılçelik & Erjem, 1992, p. 99).

Value concept was classified under five dimensions in Spranger’s (1928) book named *Types of Men* at first. These value dimensions are asserted as (i) religious, (ii) political, (iii) social, (iv) aesthetic, (v) economic, and (vi) theoretical. Subsequent classification studies were also based on this classification. In addition, Rokeach (1973) labeled values as (i) terminal and (ii) instrumental values; Winter, Newton, and Kirkpatrick (1998) classified values in social context as (i) social values, in small group context as (ii) family values, in individual context as (iii) individual values. However, one of the most comprehensive classifications of values has been built by Schwartz (1992) and these values are labeled under 10 basic dimensions which are (i) power, (ii) achievement, (iii) hedonism, (iv) stimulation, (v) self-direction, (vi) universalism, (vii) benevolence, (viii) tradition, (ix), conformity, and (x) security.

1. Measuring value concept

When the related literature about value concept is examined, it is obvious that individual values are measured through Personal Values Questionnaire (McClelland, 1991), Kilman Insight Test (Kilman, 1975), Rokeach Value Survey which is developed by Rokeach (1973), Schwartz Value Survey (SVS) and Portrait Values Questionnaire (PVQ) developed by Schwartz (1992, 2003). Rokeach Value Survey, SVS, and PVQ are mostly used in education and business sectors in various cultures (Biber, Hupfeld, & Meier, 2008; Dasari, 2017; Glaz, 2015; Leuty & Hansen, 2013; Nodelko, 2015).

Rokeach (1973) defines values as learned structures that maintain and develop character of individuals with motivating their acts and behaviors at the same time. Rokeach Values Survey, developed on the basis of this definition, is widely used in empirical research dealing value concept (Suhonen, 1985). Mentioned survey gathers values under two headings named (i) terminal and (ii) instrumental values with sorting 18 values. Terminal values are described as worth striving values for individual’s life, whereas instrumental values reflect ideal behaviors necessary for reaching these ultimate goals (Ferrari, Kapoor, & Cowman, 2005).

As it is seen from Table 1, Rokeach Value Survey is comprised of 18 terminal values and 18 instrumental values with a total of 36 items. The survey is seven-point Likert scale ranging from opposite to my views (1) to very important (7) and rating is asked in the scale from each participant for each value item. High scores received from each value show the given importance by the individuals.

Table 1. Demographic characteristics of the participants

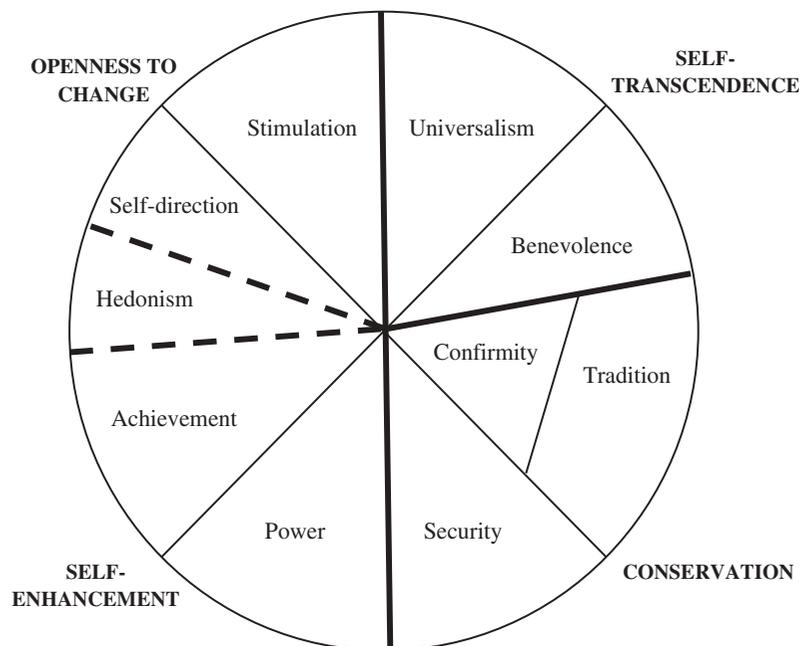
Characteristic	1	2	3	4	5	6	7	8	Total
Gender	Men	Women							-
	156	233							389
	40.1	59.9							100
Age	20-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	-
	15	68	80	77	74	34	27	12	389
	3.9	17.5	20.6	19.8	19.0	8.7	6.9	31	100
Seniority	1-5	6-10	11-15	16-20	+21				-
	206	87	53	18	25				389
	53.0	22.4	13.6	4.6	6.4				100
Education level	Assoc. Degree	Undergraduate	Graduate						-
	44	305	40						389
	11.3	78.4	10.3						100

The other scale mostly used for measuring values is “Schwartz Value Survey (SVS)” (Schwartz, 1992, SVS) which is developed by Schwartz through the findings of studies related to structure of human values and its universal context in order to measure “Schwartz Value Theory” (Schwartz, 1990; Schwartz & Bilsky, 1987). Additionally, this survey is developed to determine value priorities of individuals with cultural and national value differences. In addition, Rokeach’s (1973) value survey and values studies conducted in other countries are also utilized while developing process. Hence 56 value items composed the survey under 11 factors. Values in the survey between 1st and 30th items are described as (i) terminal values while the values between 31st and 56th item represent (ii) instrumental values.

In revised version of SVS (Schwartz & Sagiv, 1995), “spirituality” factor is removed from the survey, but items of this factor remained; the survey eventually is composed of 57 items possessing similar or different motivational structured values with 10 factors. Factors that have similar motivational structures (value types) array in nearby regions while different motivational structured factors cluster opposite polar areas in a circular axis (see Figure 1). Indeed, circular arrangement of the factors is reviewed through two basic, bipolar conceptual dimensions (openness to change versus conservation and self-enhancement versus self-transcendence). The first basic dimension encompasses Stimulation and Self-direction factors including values like (i) excitement, (ii) novelty, (iii) independent thought, and (iv) creativeness located in “openness to change” in opposition to Tradition, Conformity, and Security factors comprising values like (i) commitment to traditions, (ii) respect for social norms, and (iii) national and personal security placed in “conservation.” This dimension is called as openness to change versus conservation and these two components are positioned in diametrically opposed to each other. In the second dimension, “self-enhancement” is formed by Achievement and Power factors including values like (i) personal success, (ii) competence, (iii) power, and (iv) authority is in the opposite pole of “self-transcendence” which is composed of Universalism and Benevolence factors including values like (i) protection for the welfare of all people and (ii) preserving and enhancing the welfare of those. This dimension is called as self-enhancement versus self-transcendence. Lastly, Hedonism factor which involves (i) pleasure and (ii) sensuous gratification values is opposite to the factors of conformity and tradition while it is linked with openness to change and self-enhancement factors (Schwartz, 1992, pp. 43–44).

Figure 1. Theoretical model of relations among motivational structured values.

Source: Adapted from Schwartz, S. H. (1992).



The Portrait Values Questionnaire (PVQ) is an alternative to the SVS developed by Schwartz (Schwartz, 2006a; Schwartz et al., 2001) in order to measure the 10 basic values in samples of children from age 11 to 14 and of persons not educated in Western schools that emphasize abstract, context-free thinking (Schwartz, 2012). Specifically, PVQ or PVQ40 involves short verbal portraits of 40 different people and each verbal portrait describes a person's goals, aspirations, or wishes which show implicitly to the importance of a value. In the questionnaire, each person (portrait) in terms of what is important to him or her shows person's values. The number of portraits for each value ranges from three (stimulation, hedonism, and power) to six (universalism). The shorter, 21-item version of the PVQ also has been developed and it includes brief verbal portraits of 21 different people. There are two items for each value type, except for universalism which involves three items. PVQ asks respondents to answer the question "how much is this person like you?" (from not like me at all to very much like me on a seven-point Likert scale), rather than rating the importance of each value. That is, respondents read the items and rate extent to which the described person (portrait) is similar to them.

Even though Schwartz's value theory is believed to apply in populations around the world and "each of the ten basic values is distinguished in at least 90% of samples" (Schwartz, 2012, p. 12), some types of values conflict with each other in the survey and some samples from less-developed nations do not support the theory (Schwartz, 2012). Therefore, Schwartz developed his previous survey that distinguishes 19 basic human values instead of 10, but with the same four higher order classifications of the values (Schwartz et al., 2012).

As it is obvious in the literature, there is a growing body of literature on personal values and growing number of instruments developed to measure personal values (Roccas et al., 2002; Roccas, Sagiv, & Navon, 2017). Even though PVQ is shorter, more concrete, cognitively less-complex version of the SVS and suitable for a larger part of the population (Biber et al., 2008; Lindeman & Verkasalo, 2005), SVS measures values directly. Participants rate abstract goals regarding how important they are as a guiding principle in their lives (Parks-Leduc, Feldman, & Bardi, 2015). Thus, it is possible that SVS is a better predictor of abstract attitudes and behaviors than the PVQ. Since values are abstract goals and SVS is abstract, SVS may be a more valid measure of values (Roccas et al., 2017). Furthermore, there are ample of research conducted by Schwartz's first instrument to measure values in various cultures (Dasari, 2017; Glaz, 2015; Leuty & Hansen, 2013; Nodelko, 2015; Ralston et al., 2011) or studies developing value instruments based on Schwartz' 10 main values in Turkish culture (Dilmac, Aricak & Cesur, 2014; Tevrüz, Turgut, & Çinko, 2015). Even though it seems that Turkish adaptation of the survey first mentioned in the literature (Ralston et al., 2011), the study draws into questions the validity of the survey for working adults in the business sector, rather than focusing on cultural values perspectives of students and school teachers, as Schwartz (1994a, 1994b, 2006b) emphasized these samples in his studies.

In the light of this knowledge about measuring of value concept, the purpose of this study is to test construct validity of SVS (Schwartz, 1992) in Turkish culture, which is frequently used within limited number of studies and presumed as the most comprehensive survey for measuring values (Altınbasak-Farina & Guleryuz-Turkel, 2017; Altıntaş, 2008; Eroglu, Dilmaç, Yilmaz & Koksak, 2013; Karakitapoglu Aygün & Imamoglu, 2002).

2. Method

2.1. Participants

Theoretical population of this study is Turkish teachers—due to Schwartz's choosing teachers as participants in his own studies (1992, 1994b, 2006b). The target population of the study comprises 1256 primary school teachers in a city in Ege Region, in Turkey. The sample of the study consists of 389 teachers selected through cluster sampling method. Computing sample representativeness of the population, confidence level, and margin of error is accepted as .05; thus, minimum sample size is 295 for representative of 1256 unit population (Hamburg, 1985). Hence, it can be concluded

that sample comprising 389 participants is truly representative of the population. Demographic characteristics of the participants included in the study are presented in Table 1.

2.2. Data collection tool

Schwartz Value Survey (Schwartz, 1992) was utilized as data gathering tool in the study. First version of the survey comprising 56 value items with 10 factors, one item “self-indulgent” added to the survey and items increased to 57 as can be seen from Table 2 (Schwartz & Sagiv, 1995). Indeed, SVS is nine-point Likert scale ranging from extremely important (7), very important (6), not labeled (5, 4), important (3), not labeled (2, 1), not important (0), opposite to my views (-1); hence, it can be said that the survey would bring cognitive load to the participants. Actually most of the specialists assert that five-point or seven-point Likert scale is suitable for measurement of psychological concepts (Betz, 1996). Therefore, in this study five-point Likert scale was preferred to use [extremely important (5), very important (4), important (3), not important (2), and not at all important (1)].

In international studies performed by SVS, reliability coefficients are found between the values .39-.79 (Schwartz & Rubel, 2005), .43-.76 (Devos, Spini, & Schwartz, 2002), .62-.74 (Feather, 2004), .67-.72. (Honkanen & Verplanken, 2004), .70-.84 (Sawyer, Strauss, & Yan, 2005), .76-.87 (Schultz & Zeleny, 1998), and .78-.86 (Nordlund & Garvill, 2002); thus, it is clear that reliability coefficients are relatively low and present differences. This situation indicates a loose relationship between basic values and indicators (Knoppen & Saris, 2009). If studies performed in Turkey are scrutinized, reliability coefficients are between the values of .51-.77 (Kuşdil & Kağıtçıbaşı, 2000), .68-.89 (Hüseyinklioğlu, 2010), and .60-.72 (Karalar & Kiracı, 2010) with being statistically boundary values.

2.3. Procedure

The main goal of this study is to test validity of SVS in Turkish culture. In this context, firstly Turkish translation of the survey items was performed independently by four English language specialists who are not familiar with the original SVS before. This step was followed by generating Turkish translation form by four specialists through coming together, comparing each of the translated items and using only one phrase for each of the item. In other stage, all items in SVS were examined in terms of Turkish language and meaning by a Turkish language specialist in order to ensure language and meaning validity. In the last phase of developing a Turkish form of the survey, content validity of the survey was tested by field specialists.

In the following processes of the study, construct validity of SVS items was performed by a data set collected from 389 teachers who are selected through cluster sampling method. Participant teachers rated SVS under five-point Likert scale [extremely important (5), very important (4), important (3), not important (2), not at all important (1)]. There is no actual fit within the literature about performing construct validity for cultural adaptations (Fielding & Gilbert, 2006; Hambleton, Marendia & Spielberger, 2005). In this respect, confirmatory factor analysis (CFA) and then exploratory factor analysis (EFA) were utilized in this study for the purpose of revealing similarities

Table 2. Goodness-of-fit indicators of confirmatory factor analysis model for SVS

Parameters	Value
GFI	.66
AGFI	.62
PGFI	.59
RMSE	.09
CFI	.74
Df	1439
χ^2	5618.84
χ^2/df	3.90

between construct validity of Turkish version of SVS with the original one and getting an idea about cultural changes of values. For validity analysis of the survey, LISREL 8.80 and PASW Statistics 18.0 programs are utilized.

3. Results

The results of CFA for construct validity of SVS in Turkish culture are presented in Table 2. CFA which is one of the multivariate statistical analyses ensuring meaningful and proper presentation of the data depending on the relations on the basis of the data obtained, the main purpose of the analysis is to investigate origin of the interdependence between the variables (Bryman & Cramer, 1997; Kangwa & Olubodun, 2003; Wang & Ahmed, 2004) and to determine how much gathered data theoretically match with the variables (Hair, Black, Babin, & Anderson, 2010). In this context, CFA was performed with following two stages. The first step of CFA that includes identifying whether estimated values exceed theoretical limits was performed and values that are nonexceeding the theoretical limits were detected. In second stage of CFA, chi-square value (χ^2) and level of statistical significance were calculated depending on obtained conformity indices [$\chi^2 = 5618.84$, $df = 1439$, $p < .01$].

Fit measures such as goodness-of-fit index [GFI], adjusted goodness-of-fit index [AGFI], normed fit index [NFI], incremental fit index [IFI], root mean square error of approximation [RMSEA], the ratio of chi square and degrees of freedom [χ^2/df], and standardized root mean square residual [SRMR] were used in the study (Jöreskog & Sörbom, 2001; Kline, 2005; Schumacker & Lomax, 1996). Values greater than .90 for fit indices, including GFI, AGFI, NFI, and IFI, lower than .06 for SRMR and lower than .08 for the RMSEA were used as indicating acceptable model fit (Hu & Bentler, 1999; Kline, 2005; Schermelleh-Engel, Moosbrugger, & Müller, 2003). Furthermore, values between the values of 2 and 5 for the ratio of chi-square and degrees of freedom were used representing acceptable fit between the hypothetical model and the sample data (Jöreskog & Sörbom, 2001). In the study, goodness-of-fit indices [GFI = .66, AGFI = .62, PGFI = .59, RMSEA = .09, CFI = .74] indicated that variance and covariance of the survey were not explained by the model whereas the ratio of chi-square and degrees of freedom (χ^2/df) was calculated as 3.90. According to results obtained from standard goodness-of-fit indicators, it is obvious that modeled factor structure for the survey was not complied with the original survey.

If various statistics such as chi-square and degrees of freedom or fit indices suggest inadequate fit of a structural equation model, the model may be modified, or respecified, followed by retesting of the modified model (MacCallum, Roznowski, & Necowitz, 1992; Wittaker, 2012). Depending on the results from CFA, modification indices indicate relations that might be problematic in the constructed model. Thus, it means that the more correction item in the model indexes, the more problems in the model. Poor fit of a model shows the exclusion of relevant relations and the model needs to be improved by adding parameters and conducting modifications to the model (Saris, Sattora & van der Veld, 2009). The results of CFA for SVS proposed 164 modification indices focusing on SVS items and factors. For example, even though first item of the survey *Equality* item corresponds to *Universalism* factor in the model, the modification indices suggest that paths from this item to *Power*, *Stimulation*, *Benevolence*, *Tradition*, and *Conformity* factors are necessary. If such paths are added to the model, decrease in chi-square (χ^2) value for one item as regards conformity of the model to the data was calculated as 15.0, 8.8, 10.8, 16.9, and 12.4 and parameter estimation was determined as -0.19, -0.16, -0.37, -0.25, and -0.20, respectively. This tells us that the parameter associated with these paths should be expected to be in the vicinity these values if it is included in the model and estimated. Negative modification index indicates that the parameter will be smaller if it is set free to be estimated (Jöreskog & Sörbom, 2001). When the results of CFA are interpreted as a whole, it is clear that original factor structure of SVS does not maintain the same factor structure for Turkish culture.

Due to not validating the original factor structure of SVS for Turkish form as a result of CFA, construct validity of SVS was examined through EFA. In this analysis, correlation matrix was firstly generated by means of using Pearson product-moment correlation coefficient in accordance with the data set

through EFA. Considering KMO and Bartlett's test of sphericity, the result of EFA was determined as can be interpretable. Specifically, by means of KMO [.926] and Bartlett [$\chi^2 = 9549.70$, $p < .01$] test analysis results for construct validity of the survey, feasibility of utilizing factor analysis was approved. Determining that SVS has a multifactor structure, Varimax rotation method was preferred (Kline, 1994; Rennie, 1997; Stapleton, 1997; Stevens, 1996). By using Varimax rotation method, factor analysis was performed with 57 items. Specifically, all the items with Eigen values greater than 1 congregated on 12 factors. As can be seen from Table 3, the sum of Eigen values of factors in the survey is 34.79, total percentage of explained variance is 61.10, and factor loadings of factor items range from .23 to .76.

4. Discussion

In this study, the purpose of this study was to test construct validity of SVS (Schwartz, 1992) that is mostly used in the literature for measurement of value concept. In this context, the study was performed under five stages (i) English to Turkish translation validity, (ii) language and meaning validity in Turkish language, (iii) content validity, (iv) CFA, and (v) EFA.

In CFA stage, the results of the analysis obtained from a sample involving 389 teachers can be summarized in the following:

- χ^2/df ratio depending on degree of freedom was found as 3.90.
- Goodness-of-fit indicators of the original theoretical model for SVS were detected as GFI = .66, AGFI = .62, PGFI = .59, RMSEA = .09, CFI = .74.
- 164 modification indices focusing on SVS items and factors were proposed.

When the findings acquired from CFA are scrutinized, it is clear that if χ^2/df ratio was between 2.0 and 5.0 with representing acceptable fit value. If the value is less than 2.0, it corresponds to best fit value (Hair et al., 2010; Jöreskog & Sörbom, 2001). Even though obtained value for χ^2/df which was 3.90 indicates conformity of the model for the data, other values for goodness-of-fit indices do not validate factor structure of the survey. All fit indices should have critical values in order to represent acceptable fit between the hypothetical model and the sample data. More specifically, GFI (goodness-of-fit index) value which shows degree of correlation covariance and explained covariance by the model is .66 and AGFI (adjusted goodness-of-fit index) value was computed as .62. Expected values for these indices should be over .85 or .90; however, study results were far below the boundary values (Anderson & Gerbing, 1984; Cole, 1987; Kline, 2005; Marsh, Balla, & McDonald, 1988). For 90% confidence interval, expected RMSE (root-mean-square error) value indicating averages of unexplained variance and the covariance should be between the values of .01 and .03; yet, this value was calculated as .09 in this study (Hair et al., 2010). In addition, even though CFI (confirmatory index) value is expected to be greater than .90, it was computed as .74 which is below the boundary limit. Consequently, both goodness-of-fit indicators and 164 modification indices show that SVS items for Turkish culture do not load on original factor structure of the survey and obtained results do not validate original factor structure of the studied model.

EFA results which are other phase of the study can be summarized as follows:

- Obtained data were determined as suitable for EFA as a result of KMO [.926] and Bartlett [$\chi^2 = 9549.70$, $p < .01$] test analyses.
- Using Varimax rotation method for factor analysis, 57 items were found to be congregated on 12 factors whose Eigen values are greater than 1.
- The sum of Eigen values of factors in SVS was computed as 34.83, total percentage of explained variance was calculated as 61.10, and factor loadings of factor items were found as ranging from .23 to .76.

Table 3. Factor loadings from factor analysis: Eigenvalues and percentage of variance for items of SVS

Item	Factor loadings											
	1	2	3	4	5	6	7	8	9	10	11	12
33. Loyal	.70	-	-	-	-	-	-	-	-	-	-	-
35. Broad-minded	.66	-	-	-	-	-	-	-	-	-	-	-
34. Ambitious	.50	-	-	-	-	-	-	-	-	-	-	-
21. Detachment	.47	-	-	-	-	-	-	-	-	-	-	-
32. Moderate	.39	-	-	-	-	-	-	-	-	-	-	-
31. Independent	.37	-	-	-	-	-	-	-	-	-	-	-
28. True friendship	.32	-	-	-	-	-	-	-	-	-	-	-
3. Social power	-	.76	-	-	-	-	-	-	-	-	-	-
39. Influential	-	.57	-	-	-	-	-	-	-	-	-	-
12. Wealth	-	.51	-	-	-	-	-	-	-	-	-	-
23. Social recognition	-	-	.74	-	-	-	-	-	-	-	-	-
27. Authority	-	-	.57	-	-	-	-	-	-	-	-	-
26. Wisdom	-	-	.52	-	-	-	-	-	-	-	-	-
9. An exciting life	-	-	.36	-	-	-	-	-	-	-	-	-
7. Sense of belonging	-	-	.32	-	-	-	-	-	-	-	-	-
16. Creativity	-	-	.24	-	-	-	-	-	-	-	-	-
18. Respect for tradition	-	-	-	.72	-	-	-	-	-	-	-	-
51. Devout	-	-	-	.66	-	-	-	-	-	-	-	-
19. Mature love	-	-	-	.42	-	-	-	-	-	-	-	-
13. National security	-	-	-	.42	-	-	-	-	-	-	-	-
20. Self-discipline	-	-	-	.37	-	-	-	-	-	-	-	-

(Continued)

Table 3. (Continued)

Item	Factor loadings											
	1	2	3	4	5	6	7	8	9	10	11	12
40. Honoring parents and elders	-	-	-	.36	-	-	-	-	-	-	-	-
4. Pleasure	-	-	-	-	.74	-	-	-	-	-	-	-
2. Inner harmony	-	-	-	-	.60	-	-	-	-	-	-	-
1. Equality	-	-	-	-	.60	-	-	-	-	-	-	-
5. Freedom	-	-	-	-	.55	-	-	-	-	-	-	-
6. A spiritual life	-	-	-	-	.53	-	-	-	-	-	-	-
14. Self-respect	-	-	-	-	.39	-	-	-	-	-	-	-
10. Meaning in life	-	-	-	-	.37	-	-	-	-	-	-	-
17. A world at peace	-	-	-	-	.35	-	-	-	-	-	-	-
15. Reciprocation of favors	-	-	-	-	-	.76	-	-	-	-	-	-
22. Family security	-	-	-	-	-	.38	-	-	-	-	-	-
8. Social order	-	-	-	-	-	-	.64	-	-	-	-	-
24. Unity with nature	-	-	-	-	-	-	.64	-	-	-	-	-
11. Politeness	-	-	-	-	-	-	.48	-	-	-	-	-
46. Preserving my public image	-	-	-	-	-	-	-	.50	-	-	-	-
53. Curious	-	-	-	-	-	-	-	.48	-	-	-	-
54. Forgiving	-	-	-	-	-	-	-	.44	-	-	-	-
47. Obedient	-	-	-	-	-	-	-	.44	-	-	-	-
38. Protecting the environment	-	-	-	-	-	-	-	-	.69	-	-	-
49. Helpful	-	-	-	-	-	-	-	-	.59	-	-	-

(Continued)

Table 3. (Continued)

Item	Factor loadings											
	1	2	3	4	5	6	7	8	9	10	11	12
36. Humble	-	-	-	-	-	-	-	-	.58	-	-	-
37. Daring	-	-	-	-	-	-	-	-	.51	-	-	-
29. A world of beauty	-	-	-	-	-	-	-	-	.30	-	-	-
30. Social justice	-	-	-	-	-	-	-	-	.23	-	-	-
44. Accepting portion in life	-	-	-	-	-	-	-	-	-	.42	-	-
57. Self-indulgent	-	-	-	-	-	-	-	-	-	-	.67	-
50. Enjoying life	-	-	-	-	-	-	-	-	-	-	.53	-
25. A varied life	-	-	-	-	-	-	-	-	-	-	.50	-
42. Healthy	-	-	-	-	-	-	-	-	-	-	-	.71
48. Intelligent	-	-	-	-	-	-	-	-	-	-	-	.60
43. Capable	-	-	-	-	-	-	-	-	-	-	-	.58
55. Successful	-	-	-	-	-	-	-	-	-	-	-	.57
56. Clean	-	-	-	-	-	-	-	-	-	-	-	.54
45. Honest	-	-	-	-	-	-	-	-	-	-	-	.52
52. Responsible	-	-	-	-	-	-	-	-	-	-	-	.50
41. Choosing own goals	-	-	-	-	-	-	-	-	-	-	-	.35
Eigenvalue	15.88	3.79	2.74	2.32	1.57	1.55	1.34	1.24	1.14	1.10	1.09	1.03
% of variance	27.87	6.65	4.81	4.07	2.77	2.72	2.35	2.17	2.00	1.94	1.92	1.81

If factor structure of SVS generated through EFA in the current study and original factor structure of the survey are compared, great differences are observed between the items aggregated in original factor structure of SVS and items identified under 12 factors in the study. To illustrate, values loaded on the first factor such as “loyal” and “true friendship” value items are actually aggregated in Benevolence; “detachment” and “moderate” value items match with Tradition; “ambitious” value is placed in Achievement; “independent” value corresponds to Self-direction; and “broad-minded” value is accumulated under Universalism factors in the original SVS. Another example, values loaded on fifth factor like “inner harmony,” “equality,” and “a world at peace” values are accumulated under Benevolence; “pleasure” value corresponds to Hedonism; “freedom” value matches with Self-direction; and “self-respect” value is placed in Achievement factors in the original survey. Observed inconsistency is also conspicuous in other factors (see Table 3) and this situation restricts naming of identified factors in Turkish culture. In addition, 10th factor obtained by factor analysis comprises only “accepting portion in life” value item and this item is placed in Tradition factor in the original SVS. Similarly, even though “reciprocation of favors” and “family security” value items are aggregated in Security factor in the original survey, this value is detected as a distinct factor in the study.

If studies conducted in different cultures concerning validity of SVS are considered, first validity study of SVS (Schwartz, 1992) is seen as being conducted by Waege, Billiet, and Pleyzier (2000). In this study, RMSEA index was computed as .65 and χ^2/df ratio was calculated as 6.5. Hence, these results showed that original factor structure of SVS is not verified. In fact, of the items loaded on factors in original SVS, factor loadings of 13 items were less than .45 and most of the items were loaded on different factors with low correlation values. In another study (Spini, 2003), most of value items are detected as holding for the factors when SVS items are examined through CFA with regard to configural and metric equivalence and factor variance invariance. However, it is emphasized that Hedonism factor is rejected in metric equivalence and it is impossible to evaluate configural equivalence. Similarly, it is asserted that only four factors (Benevolence, Conformity, Self-direction, and Universalism) are equivalent at the level of factor variance of 10 factors. About the validity of SVS, there is 75% equivalence with maximum number of items and the related factor structure; even assuming that the original factors are verified in general, indexes measuring 10 factors are not reliable and exactly equivalent numerically. In addition, the study conducted by Schwartz and Boehnke (2004) with the purpose of testing the construct validity of SVS proposed that 10 different value types are validated through performing CFA and 46 items with sufficient factor loadings are detected as aggregating in 10 factors through EFA as being parallel with the original SVS and 11 items are removed from the survey due to low factor loadings. The situation is similar for other research which was conducted by German students to address the question of if it is meaningful to group basic values (Knoppen & Saris, 2009). Since items did not load significantly on the values they were expected to indicate, there are cross loadings of items with adjacent values and there are distinct subdimensions, four of the original 10 values are studied as such (hedonism, stimulation, self-direction, and security), whereas the remaining six values are grouped in three pairs to solve the problem of discriminant validity.

In psychometric Likert-type measurements, analysis can be performed both utilizing the raw data and correlation matrix constituted from correlations between variables. In this respect, values in correlation matrix are taken as similarity indicator; if size of the relationship between two variables is close to 1.0, these two concepts are similar concepts; if it is close to 0.00, they are relatively different; the two concepts are opposite concepts if size of the relationship is close to -1.00 (Davison, 1983). For this study, the highest correlation coefficient in “value items” is between “equality” and “inner harmony” value items with .50 and other correlation coefficients were found as very low or not significant statistically. Parallel with this result, in a similar study of Waege et al. (2000), correlations between factors which is pointed out by Schwartz (Schwartz, 1992; Struch, Schwartz, & van der Kloot, 2002) were computed as very low. In addition, the relationships between factors that are expected to be highly correlated (Achievement-Hedonism, $r = .20$; Security-Power, $r = .39$) are said to have low to moderate correlation.

Schwartz's value theory (1992, 1996) and SVS are considered as an important model that is taken as a base in value studies for the last 25 years with being a guide for explaining cognitive and social structures, processes, and social behaviors in various disciplines and being subject of a number of empirical research. However, SVS (Schwartz, 1992) is lacking in intercultural construct validity and different value items are not placed in the anticipated factors if construct validity of all research results are examined as a whole.

Mentioned validity problem of SVS can be expressed in three dimensions. These are (i) lacking in providing a common definition for value concept, (ii) ignoring cultural structures/differences in adaptation studies of SVS, and (iii) lingual adaptation problem. In this context, the primary issue is defining value concept in conflicting ways and lacking in providing a definition that recovers and directs studies based on reconciliation of various theorists and researchers (Rohan, 2000).

The second issue is that loadings attached to value concept embody cultural differences. For example, it is revealed that Hedonism is not a unique factor for Turkish culture (Kozan & Ergin, 1999); Conformity and Security factors are merging with Self-direction and Universalism factors; Power and Achievement factors are separating from each other; and Power factor is getting close to Hedonism factor (Kuşdil & Kağıtçıbaşı, 2000). In both studies, it is identified that a significant number of value items has not been included in the prescribed factors. Likewise, nine value items composing Universalism, one of the most important factors of SVS, are loaded on six different factors. Particularly global thinking factor of Cognitive-Experiential Self Theory (Epstein, 1993), bearing similar characteristics with Universalism factor, is not identified as a factor in the current adaptation study.

The reason of this situation that creates difficulty in adapting SVS is development of the survey in English language with the basis of western culture. More specifically, each culture has its own values concerning their unique assumptions, thought patterns, approach to time and human life. All of them influence thinking and social relations. Even if there is an absolute independence from any culture or there is a unique professional culture separate from a certain culture, then it would not be a problem of cultural bias. However, it is unrealistic. Even though it is very easy for researchers to believe assumptions, concepts, findings, and values—colored with western culture—as if they are valid universally for all people in the world (Neuman, 2007, p. 643), it is not a realistic approach. To illustrate, going for a vacation in Las Vegas, beginning a self-improvement program, going on a vacation in an isolated tree cottage and having a permissive morality are not suitable for Turkish culture. Several factors in SVS like Hedonism and Stimulation involve this situation or vice versa. Any people going to a bazaar may purchase any goods and pay it in installments. The merchant, who is only one day in there, takes the name and address of the buyer, organizes dates of the payment assuming the given information is correct and presumes taking regular payments on the committed days. Besides, this situation does not come true in a little village but takes place in İstanbul, a large, cosmopolitan city with a population of over 15 million (Gülgöz, 2005). Similarly, many examples from both of the cultures can be given related to “trust” and “mistrust” factors. Therefore, cultural context of SVS is important and survey items are limited to cultural structure in which the items are developed. Despite that translation of value items is done in adaptation process, these items do not match with the factors. In addition, participants practicing SVS had difficulties in some of the items while answering and they expressed lacking of “it depends” response survey. In fact, cultural differences are so important for individuals' value conceptualization. For instance, in western culture, value conceptualizations have “trait description” basis while in eastern cultures also involving Turkey is based on “behavior description.” According to Kağıtçıbaşı (1996), adaptation of adjective based surveys for cultures like Turkey is an indicator of possessing great difficulty while answering.

Berry, Poortinga, Segall, and Dasen (1992) assert three methods for explaining cultural differences. These methods are also associated with factor structure of SVS. The first interpretation reveals that difference in factor structure of SVS reflects the difference in perceptions of this feature by cultures; the second comment is that this difference stems from translation errors or lacking in finding the exact equivalents of the examples in that culture. The last interpretation is derived from

nonconceptualization of SVS factors. Definition of a related value in a culture with purifying from varying and certain patterns can be given as an example. The actual error in here is nonimplementation of all interpretations into similar factor structures. In addition, the lacking difference in cross-cultural factor structures—this situation is valid for some studies as well as SVS—is not the proof of reflecting the same features of factor structure, exactly succeeding in presentation of observed parameters in all cultures and equally conceptualization of the behavior in all cultures.

The other problem in cultural adaptation of SVS stems from difficulty in translation and structure of the language. Turkish language involving in Ural-Altay language family has been influenced by Arabic and Persian in Ottoman Empire period; after the establishment of Republic of Turkey in 1923, it is subjected to purification. Sentence structure is in the form of “subject-object-verb” with being flexible. The main difficulty in translation of SVS items from English to Turkish is lacking of many verbs in Turkish that maintain the nuances. To illustrate, “like,” “love,” or “enjoy” is expressed with the same word in Turkish, “sevmek.” This case stated in language typology demonstrates that Turkish language indicates path of action rather than manner of action due to being verb-framed language. Scarcity of manner verbs requires indirect description through adjectives and adverbs in order to preserve the meaning of the item. Besides, this circumstance is also true for words lacking of a direct translation (Talmy, 1985). However, whether lacking of a word in a language shows lacking of this concept in that culture is always questioned (Whorf, 1956). For example, lacking of “apprehensive” word in Turkish does not mean that people speaking Turkish never apprehensive even they experience anxiety. Actually, it is impossible to find a pure language not influenced by other languages.

As a final result, cultural structure is neglected by the researchers in several studies that utilize SVS. When validity of SVS is examined in Turkish cultural context, it is revealed that the survey is lacking in validity for Turkish culture in the current study, as well as in some other studies performed by other researchers (Eroğlu et al., 2013; Karakitapoglu Aygün & Imamoglu, 2002). The proof is that some factors are overlapping or loaded under different factors in these study findings. Hence, this situation entails conducting and scrutinizing the survey in other cultures. The situation happens in SVS can not only be considered as cross-cultural universalism or as basic differences but also it is necessary to be very cautious in order to make a decision between two results. On the other side, if conducted value studies are examined, it stands out that most these studies are shaped within the framework of positivist paradigm and limited research has been done by using interpretive paradigm (Balci & Yanpar Yelken, 2010; Erdem, 2007). However, value structures of societies can be put forth clearly by interpretive paradigm whose main task is to comprehend and explain certain circumstances. On the other hand, in studies adopting positivist paradigm, using SVS like ranking surveys that arrange values in the order of importance rather than rating surveys can be denoted as another alternative way for measurement of values (Krosnick & Alwin, 1988; Miethe, 1985).

There are some limitations of the current research. Firstly, the study group can be asserted as rather small. The number of the participants needs to be increased since sample size may influence the research outcomes. Moreover, data should be collected from different regions, it should not be limited to only one region in Turkey. The results of conducted research suggest that it is better to develop instruments for measuring value preferences adjusted to Turkish culture in future studies or it is necessary to introduce cultural-related modifications to the SVS items which is adapted to Turkish culture.

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References

- Altınbaşak-Farina, İ., & Gülerüz-Türkel, G. (2017). A comprehensive study of the prevalent personal values: Investigating working generation of Y'ers in Turkey. *Boğaziçi Journal Review of Social, Economic and Administrative Studies*, 31(1), 59–81. doi:10.21773/boun.31.1.4
- Altıntaş, F. Ç. (2008). A comparative analysis of Turkish and German managers' personal values. *Ankara Üniversitesi Siyasal Bilgiler Fakültesi Dergisi*, 63(4), 65–87.
- Anderson, J. C., & Gerbing, D. (1984). The effect of sampling error on convergence, improper solutions, and goodness-of-fit indices for maximum likelihood confirmatory factor analysis. *Psychometrika*, 49, 155–173. doi:10.1007/BF02294170
- Balci, F. A., & Yanpar Yelken, T. (2010). İlköğretim öğretmenlerinin “değer” kavramına yükledikleri anlamlar [Meanings attributed to the concept of “value” by primary school teachers]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 39, 81–90.
- Baloğlu, M., & Balgalmış, E. (2005). The description of self-values among primary -and- high school administrators. *Journal of Values Education -Turkey*, 3(10), 19–31.
- Berry, J. W., Poortinga, Y. H., Segall, M. H., & Dasen, P. R. (1992). *Cross-cultural psychology: Research and applications*. Cambridge: Cambridge University Press.
- Betz, N. E. (1996). Test construction. In F. T. L. Leong & J. T. Austin (Eds.), *The psychology research handbook* (pp. 239–250). Thousand Oaks, CA: Sage.
- Biber, P., Hupfeld, J., & Meier, L. L. (2008). Personal values and relational models. *European Journal of Personality*, 22, 609–628. doi:10.1002/per.693
- Bryman, A., & Cramer, D. (1997). *Quantitative data analysis with SPSS for windows. A guide for social scientists*. London: Routledge.
- Cole, D. A. (1987). Utility of confirmatory factor analysis in test validity research. *Journal of Consulting and Clinical Psychology*, 55, 1019–1031. doi:10.1037/0022-006X.55.4.584
- Crosby, L. A., & Bitner, M. J. (1990). Organizational structure of values. *Journal of Business Research*, 20(2), 123–134. doi:10.1016/0148-2963(90)90056-J
- Dasari, R. P. (2017). Value system and value preferences of prospective teachers of secondary schools: An Indian survey. *Universal Journal of Educational Research*, 5(8), 1403–1409. doi:10.13189/ujer.2017.050814
- Davison, M. L. (1983). *Multidimensional scaling*. NY: Wiley.
- Devos, T., Spini, D., & Schwartz, S. H. (2002). Conflicts among human values and trust in institutions. *British Journal of Social Psychology*, 41, 481–494. doi:10.1348/014466602321149849
- Dilmaç, B., Arıcak, O. T., & Cesur, S. (2014). A validity and reliability study on the development of the values scale in Turkey. *Educational Sciences: Theory & Practice*, 14(5), 1661–1671. doi:10.12738/estp.2014.5.2124
- Dilmaç, B., & Ekşi, H. (2007). Values education. *Journal of Teacher*, 14, 21–29.
- Epstein, S. (1993). *Manual for the constructive thinking inventory*. MA: University of Massachusetts at Amherst.
- Erdem, A. R. (2007). An important factor of culture of education faculties: Values (A case study of the education faculty of PAU). *Eurasian Journal of Educational Research*, 26, 95–108.
- Eroğlu, S. E., Dilmaç, B., Yılmaz, H., & Koksall, O. (2013). Examining the relationship between human values and democracy which teacher candidates have. *International Journal of Academic Research Part B*, 5(1), 218–225. doi:10.7813/2075-4124.2013/5-1/B.33
- Feather, N. T. (2004). Value correlates of ambivalent attitude toward gender relations. *Personality and Social Psychology Bulletin*, 30, 3–12. doi:10.1177/0146167203258825
- Ferrari, J. R., Kapoor, M., & Cowman, S. (2005). Exploring the relationship between students' values and the values of postsecondary institutions. *Social Psychology of Education*, 8, 207–221. doi:10.1007/s11218-004-5097-1
- Fielding, J., & Gilbert, N. (2006). *Understanding social statistics*. London: SAGE Publications.
- Finegan, J. E. (2000). The impact of person and organizational values on organizational commitment. *Journal of Occupational and Organizational Psychology*, 73, 149–169. doi:10.1348/096317900166958
- Glaz, S. (2015). The importance of terminal values and religious experience of God's presence and God's absence in the lives of university students with various levels of empathy. *Journal of Religion and Health*, 54(3), 1052–1067. doi:10.1007/s10943-014-9884-5
- Gülgöz, S. (2005). Five factor theory and NEO-PI-R in Turkey. In J. Allik & R. R. McCrae (Eds.), *The five-factor model of personality across cultures* (pp. 175–196). Dordrecht, Netherlands: Kluwer Academic Publishers.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis*. Upper Saddle River: Pearson.
- Halsted, J. M., & Taylor, M. J. (1996). *Values in education and education in values*. Washington: The Palmer.
- Hambleton, R. K., Merenda, P., & Spielberger, C. (Eds.). (2005). *Adapting educational and psychological tests for cross-cultural assessment*. Hillsdale, NJ: Lawrence S. Erlbaum.
- Hamburg, M. (1985). *Basic statistics: A modern approach*. NY: Harcourt, Brace Jovanovich.
- Haydon, G. (2006). *Values in education*. NY: Continuum.
- Honkanen, P., & Verplanken, B. (2004). Understanding attitudes towards genetically modified food: The role of values and attitude strength. *Journal of Consumer Policy*, 27, 401–420. doi:10.1007/s10603-004-2524-9
- Hu, I., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure modelling: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. doi:10.1080/10705519909540118
- Hüseyinkılıçoğlu, B. (2010). *Examination of the relationship between individual values and level of organizational commitment among military hospital employees* (Unpublished doctoral dissertation). Çukurova University, Adana.
- Jöreskog, K., & Sörbom, D. (2001). *LISREL 8.51*. Mooresville: Scientific Software.
- Kağıtçıbaşı, Ç. (1996). The autonomous-relational self a new synthesis. *European Psychologist*, 1, 180–186. doi:10.1027/1016-9040.1.3.180
- Kangwa, J., & Olubodun, F. (2003). A factor approach to analysis of home maintenance outcomes and attributes of management successes in the owner-occupied sector. *Structural Survey*, 21(4), 158–172. doi:10.1108/02630800310507168
- Karakitapoğlu Aygün, Z., & Imamoglu, E. O. (2002). Value domains of Turkish adults and university students. *The Journal of Social Psychology*, 142(3), 333–351. doi:10.1080/00224540209603903
- Karalar, R., & Kiracı, H. (2010). A research on class teachers related to determining the effects of consumers' personal values on sustainable consumption behavior. *İşletme Araştırmaları Dergisi*, 2(2), 79–1006.
- Kilmann, R. H. (1975). A scaled-projective measure of interpersonal values. *Journal of Personality*

- Assessment*, 39, 34–40. doi:10.1207/s15327752jpa3904_10
- Kızılcelik, S., & Erjem, Y. (1992). *Annotated glossary of terms in sociology*. Konya: Günay Ofset.
- Kline, R. B. (1994). *An easy guide to factor analysis*. Abingdon-on-Thames: Routledge.
- Kline, R. B. (2005). *Principle and practice of structural equation modeling*. New York, NY: Guilford.
- Kluckhohn, C. (1951). Values and value-orientations in the theory of action: an exploration in definition and classification. In T. Parsons & E. Shils (Eds.), *Toward a general theory of action* (pp.388–433). Cambridge: Harvard University Press. doi:10.4159/harvard.9780674863507.c8
- Knoppen, D., & Saris, W. (2009). Do we have to combine values in the Schwartz' human values scale? A comment on the Davidov studies. *Survey Research Methods*, 3(2), 91–103.
- Kozan, M. K., & Ergin, C. (1999). The influence of intra-cultural differences on conflict management practices. *The International Journal Of Conflict Management*, 10(3), 249–267.
- Krosnik, J. A., & Alwin, D. F. (1988). A test of the form-resistant correlation hypothesis: Ratings, rankings, and the measurement of values. *Public Opinion Quarterly*, 52, 526–538. doi:10.1086/269128
- Kuşdil, M. E., & Kağitçibaşı, Ç. (2000). Orientation of the Turkish teachers' values and Schwartz theory of value. *Turkish Journal of Psychology*, 15(45), 59–76.
- Leuty, M. E., & Hansen, J. C. (2013). Building evidence of validity: The relation between work values, interest, personality, and personal values. *Journal of Career Assessment*, 21(2), 175–189. doi:10.1177/1069072712466714
- Lindeman, M., & Verkasalo, M. (2005). Measuring values with the short Schwartz's Value Survey. *Journal of Personality Assessment*, 85, 170–178. doi:10.1207/s15327752jpa8502_09
- Lyons, S. (2003) *An exploration of generational values in life and at work* (Unpublished doctoral dissertation). Carleton University, Canada.
- MacCallum, R. C., Roznowski, M., & Necowitz, L. B. (1992). Model modifications in covariance structure analysis: The problem of capitalization on chance. *Psychological Bulletin*, 111, 490–504. doi:10.1037/0033-2909.111.3.490
- Marsh, H. W., Balla, J. R., & McDonald, R. P. (1988). Goodness-of-fit indexes in confirmatory factor analysis: The effects of sample size. *Psychological Bulletin*, 103(3), 391–410. doi:10.1037/0033-2909.103.3.391
- McClelland, D. C. (1991). *The personal value questionnaire*. Boston: McBer & Company.
- Meglino, M. B., & Ravlin, E. C. (1998). Individual values in education: Concepts, controversies, and research. *Journal of Management*, 24(3), 351–389. doi:10.1177/014920639802400304
- Miethe, T. D. (1985). The validity and reliability of value measurements. *Journal of Psychology*, 119(5), 441–453. doi:10.1080/00223980.1985.9712608
- Neuman, W. L. (2007). *Basics of social research: Quantitative and qualitative approaches*. Boston: Allyn and Bacon.
- Nodelko, Z. (2015). Ethics of managers in Slovenian public administration. *Management: Journal of Contemporary Management Issues*, 20(2), 23–47.
- Nordlund, A. M., & Garvill, J. (2002). Value structures behind proenvironmental behavior. *Environment and Behavior*, 34, 740–756. doi:10.1177/001391602237244
- Parks-Leduc, L., Feldman, G., & Bardi, A. (2015). Personality traits and personal values: A meta-analysis. *Personality and Social Psychology Review*, 19(1), 3–29. doi:10.1177/1088868314538548
- Ralston, D. A., Egri, C. P., Reynaud, E., Srinivasan, N., Furrer, O., Brock, D., ... Wallace, A. (2011). A twenty-first century assessment of values across the global workforce. *Journal of Business Ethics*, 104(1), 1–31. doi:10.1007/s10551-011-0835-8
- Rennie, K. M. (1997). *Exploratory and confirmatory rotation strategies in exploratory factor analysis*. (ERIC Document Reproduction Service No. ED406446).
- Roccas, S., Sagiv, L., & Navon, M. (2017). Methodological issues in studying personal values. In S. Roccas & L. Sagiv (Eds.), *Values and behaviors: Taking a cross cultural perspective* (pp. 15–50). Switzerland: Springer International Publishing. doi:10.1007/978-3-319-56352-7_2
- Roccas, S., Sagiv, L., Schwartz, S. H., & Knafo, A. (2002). The big five personality factors and personal values. *Personality and Social Psychology Bulletin*, 28, 789–801. doi:10.1177/0146167202289008
- Rohan, M. (2000). A rose by any name? The value construct. *Personality and Social Psychology Review*, 4(3), 255–277. doi:10.1207/S15327957PSPR0403_4
- Rokeach, M. (1973). *The nature of the human values*. New York: The Free Press.
- Saris, W. E., Satorra, A., & van der Veld, W. M. (2009). Testing structural equation models or d detection of misspecifications? *Equational Equation Modeling: A Multidisciplinary Journal*, 16, 561–582. doi:10.1080/10705510903203433
- Sawyer, O. O., Strauss, J., & Yan, J. (2005). Individual value structure and diversity attitudes: The moderating effects of age, gender, race, and religiosity. *Journal of Managerial Psychology*, 20, 498–521. doi:10.1108/02683940510615442
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, 8(2), 23–74.
- Schultz, P. W., & Zeleny, L. (1998). Values and proenvironmental behavior. *Journal of Cross-Cultural Psychology*, 29, 540–558. doi:10.1177/0022022198294003
- Schumacker, R. E., & Lomax, R. G. (1996). *A beginner's guide to structural equation modeling*. New Jersey: Lawrence Erlbaum Associates, Publishers.
- Schwartz, S. H. (1990). Individualism-collectivism: Critique and proposed refinements. *Journal of Cross-Cultural Psychology*, 21, 139–157. doi:10.1177/0022022190212001
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1–66). New York: Academic Press.
- Schwartz, S. H. (1994a). Beyond individualism/collectivism: New cultural dimensions of values. In U. Kim, H. C. Triandis, C. Kagitçibaşı, S. Choi, & G. Yoon (Eds.), *Individualism and collectivism: Theory, method, and applications* (pp. 85–119). Thousand Oaks, CA: Sage Publications.
- Schwartz, S. H. (1994b). Are there universal aspects in the structure and contents of human values? *Journal of Social Issues*, 50(4), 19–45. doi:10.1111/josi.1994.50.issue-4
- Schwartz, S. H. (1996). Value priorities and behavior: Applying a theory of integrated value systems. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The psychology of values: The Ontario symposium* (Vol. 8, pp. 1–24). Hillsdale, NJ: Erlbaum.

- Schwartz, S. H. (2006a). Les valeurs de base de la personne: Théorie, mesures et applications [Basic human values: Theory, measurement, and applications]. *Revue Française de Sociologie*, 47, 249–288. doi:10.3917/rfs.474.0929
- Schwartz, S. H. (2006b). A theory of cultural value orientations: Explication and applications. *Comparative Sociology*, 5, 137–182. doi:10.1163/156913306778667357
- Schwartz, S. H. (2012). An overview of the Schwartz theory of basic values. *Online Readings in Psychology and Culture*, 2(1). doi:10.9707/2307-0919.1116
- Schwartz, S. H., & Bilsky, W. (1987). Toward a psychological structure of human values. *Journal of Personality and Social Psychology*, 53, 550–562. doi:10.1037/0022-3514.53.3.550
- Schwartz, S. H., & Boehnke, K. (2004). Evaluating the structure of human values with confirmatory factor analysis. *Journal of Research in Personality*, 38, 230–255. doi:10.1016/S0092-6566(03)00069-2
- Schwartz, S. H., Cieciuch, J., Vecchione, M., Davidov, E., Fischer, R., Beierlein, C., & Konty, M. (2012). Refining the theory of basic individual values. *Journal of Personality and Social Psychology*, 103(4), 663–688. doi:10.1037/a0029393
- Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., Harris, M., & Owens, V. (2001). Extending the cross-cultural validity of the theory of basic human values with a different method of measurement. *Journal of Cross-Cultural Psychology*, 32, 519–542. doi:10.1177/0022022101032005001
- Schwartz, S. H., & Rubel, T. (2005). Sex differences in value priorities: Cross-cultural and multimethod studies. *Journal of Personality and Social Psychology*, 89, 1010–1028. doi:10.1037/0022-3514.89.6.1010
- Schwartz, S. H., & Sagiv, L. (1995). Identifying culture-specifics in the content and structure of values. *Journal of Cross-Cultural Psychology*, 26, 92–116. doi:10.1177/0022022195261007
- Schwartz, S.H. (2003). *Basic human values: their content and structure across countries*. In A. Tamayo & J. Porto (Eds.), *Valores e trabalho [Values and work]*. Brasilia: Editora Universidade de Brasilia.
- Spini, D. (2003). Measurement equivalence of 10 value types from the Schwartz Value Survey across 21 countries. *Journal of Cross-Cultural Psychology*, 34(1), 3–23. doi:10.1177/0022022102239152
- Spranger, E. (1928). *Types of men*. Halle: Max Niemeyer Verlag.
- Stapleton, C. D. (1997). *Basic concepts in exploratory factor analysis as a tool to evaluate score validity: A right-brained approach*. (ERIC Document Reproduction Service No. ED407419).
- Stevens, J. (1996). *Applied multivariate statistics for the social sciences*. Mahwah, NJ: Lawrence Erlbaum.
- Struch, N., Schwartz, S. H., & van der Kloot, W. A. (2002). Meanings of basic values for women and men: A cross-cultural analysis. *Personality and Social Psychology Bulletin*, 28(1), 16–28. doi:10.1177/0146167202281002
- Suhonen, P. 1985. "Approaches to value research and a value measurement." *Acta Sociologica* 28(4): 349–358.a_7452. doi:10.1177/000169938502800404.
- Talmy, L. (1985). Lexical typologies. In T. Shopen (Ed.), *Language typology and syntactic description: Vol 3. Grammatical categories and the lexicon* (pp. 57–149). Cambridge: Cambridge University Press.
- Tevrüz, S., Turgut, T., & Çinko, M. (2015). Integrating Turkish work and achievement goals with Schwartz's human values. *Europe's Journal of Psychology*, 11(2), 259–279. doi:10.5964/ejop.v11i2.825
- Waege, H., Billiet, J., & Pleyzier, S. (2000). Validation by means of method variation: A CFA approach to the SSA-value-typology of Schwartz. In A. Ferligoj & A. Mrvar (Eds.), *Developments in survey methodology* (pp. 75–91). Ljubljana: Metodoloski Zvezki 15. FDV.
- Wang, C. L., & Ahmed, P. K. (2004). The development and validation of the organisational innovativeness construct using confirmatory factor analysis. *European Journal of Innovation Management*, 7(4), 303–313. doi:10.1108/14601060410565056
- Whorf, B. L. (1956). *Language, Thought, and Reality*. Cambridge: MIT Press.
- Williams, R. M. (1968). Values. In E. Sills (Ed.), *International encyclopedia of the social sciences* (pp.283-287). New York: Macmillan.
- Winter, P. A., Newton, R. M., & Kirkpatrick, R. L. (1998). The influence of work values on teacher selection decisions: The effects of principal values, teacher values, and principal- teacher value interactions. *Teaching & Teacher Education*, 14, 385–400. doi:10.1016/S0742-051X(97)00046-2
- Wittaker, T. A. (2012). Using modification index and standardized expected parameter change for model modification. *The Journal of Experimental Education*, 80(1), 26–44. doi:10.1080/00220973.2010.531299



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