



Analysis of the third-order structuring of Shalom Schwartz's theory of basic human values



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ABSTRACT

Shalom Schwartz's Theory of Basic Human Values is one of the most commonly used and tested transcultural theories in the field of behavioural research. This theory has been refined since the 1980s to reach its most recent version, from 2012. The underlying reason for this theory's continuous evolution is that it assumes that values form a circular motivational continuum, meaning that the items do not have exact limits between the values and thus have a shared load on more than one, giving rise to multicollinearity. Additionally, measuring as they do different aspects, each value is multidimensional, thereby reducing internal consistency coefficients. The refined version represents an attempt to reduce or even eliminate these problems.

Nevertheless, to date, on only one occasion has a confirmatory factor analysis been performed to permit validation of this refined version's third-order structuring. The objective of this study is, then, to perform a validation analysis of said structuring, albeit in a different social context and for another geographical scope of action.

1. Introduction

Values are abstract concepts that have been studied since ancient times. In our contemporary world, they have been tackled from a variety of standpoints, disciplines and contexts, including personal and cultural ones. Social psychology has carried out a more integrated analysis of values, embracing both psychological and social perspectives, giving rise to new transcultural theories that have resulted in a structuring of values in different contexts.

Shalom Schwartz's Theory of Basic Human Values (TBHV) is one of the most commonly used and tested transcultural theories in the field of behavioural research, with numerous validations. According to this theory, values are "individual concepts about a trans-situational goal that express an interest included in a motivational domain valued by the range of importance and that act as a guiding principle in the life of persons" (Schwartz et al., 2012). The beginnings of the TBHV date back to the end of the 1980s, when a group of researchers headed by Schwartz suggested a more in-depth study of values, undertaking an expansion of Rokeach's theory (1973) and taking into account some of the criticisms levelled at the latter's approach.

2. Theory

2.1. The Theory of Basic Human Values: the original version (Schwartz and Bilsky, 1987)

Initially, Schwartz and Bilsky (1987) proposed a model with seven different motivational domains: prosocial, restrictive conformity, enjoyment, achievement, maturity, self-direction and security. These seven domains fitted within a circular model (Fig. 1), in which adjacent domains were related and those which were not adjacent represented opposing domains.

2.2. The Theory of Basic Human Values: revised version (Schwartz, 1992)

In a second phase, Schwartz (1992) posited a model comprising ten different types of values. To the seven initial values, he added three more (power, tradition and stimulation), whilst also replacing enjoyment with hedonism, prosocial with benevolence and maturity with universalism. The ten resulting motivational domains were included within four different dimensions: self-transcendence, conservation, openness to change and self-enhancement. These ten domains once again fit within a circular model (Fig. 2), in which adjacent domains were related and

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Fig. 1. Original version. Source: own work, adapted from Schwartz and Bilsky (1987).

those which were not adjacent represented opposing domains.

With the existence of ten motivational domains structured into four different dimensions, this revised version represents a second-order model, unlike the first-order model represented by the seven ungrouped motivational domains of the original version. Thereafter, Schwartz's study (1992) enjoyed significant evidential support: Leung et al. (1995), Schwartz and Sagie (2000), Schwartz and Bardi (2001), and Schwartz and Boehnke (2004), amongst others.

2.3. The Theory of Basic Human Values: the refined version (Schwartz et al., 2012)

In a third stage, Schwartz et al. (2012) posited a total of nineteen



Fig. 2. Revised version. Source: own work, adapted from Schwartz (1992).

motivational domains, as opposed to the seven and ten of prior versions. Schwartz et al. (2012) differentiated between three types of universalism (concern, nature and tolerance), two types of benevolence (caring and dependability), two types of self-direction (thought and action), two types of conformity (rules and interpersonal), two types of power (dominance and resources) and two types of security (personal and societal). Also, they introduced two new basic values: humility and face (or appearance). These nineteen domains again fit within a circular model (Fig. 3), in which adjacent domains are related and those that are non-adjacent represent opposing domains. Additionally, the values' order was based on the conflict or compatibility between them for people, giving rise to two polarities: one between the personal and social focuses, and the other between the search for self-enhancement and intrinsic motivations, and the search for self-protection and extrinsic motivations.

Given the existence of these nineteen domains structured into twelve different dimensions – which are, in turn, structured into four other dimensions – this refined version represents a third-order model, unlike the first- and second-order models of the original and revised versions, respectively. Table 1 shows the meaning of each of the domains and motivational dimensions, based on the goal they seek and in line with this third-order structuring.

One of the issues with Schwartz's original and revised versions is with the measuring process. This is due to the assumption that the values form a circular motivational continuum (Schwartz et al., 2012). This multifaceted focus, with its related values, means that the items do not have clear limits between values, and have a shared load on more than one, giving rise to multicollinearity. Additionally, given that different aspects are measured, each value is multidimensional, reducing the internal consistency coefficients (Davidov et al., 2008; Knoppen and Saris, 2009). Indeed, the refined theory represents an attempt to reduce or eliminate these problems. By increasing the number of values, each dimension can be defined more precisely, and with more homogeneous items, the correlations between them increase, improving internal consistency and reducing the shared factor loading and the multicollinearity (Schwartz et al., 2012).

3. Methodology

As noted above, the structuring of the TBHV's different versions can

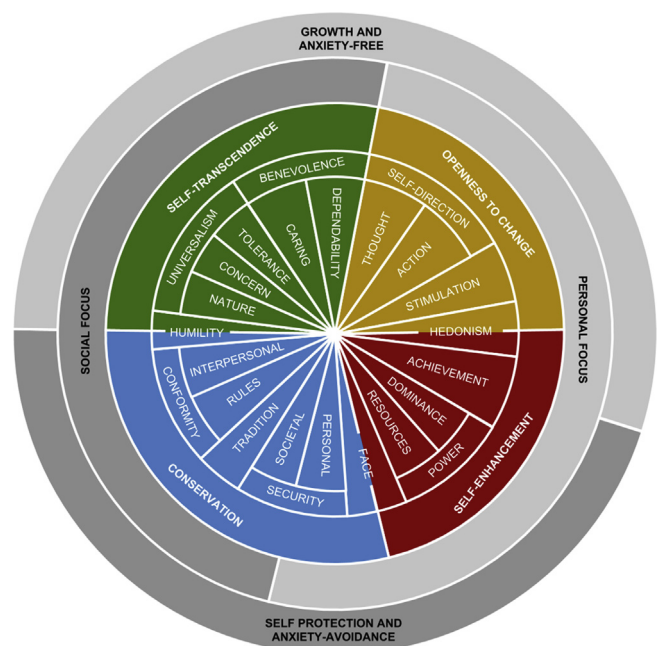


Fig. 3. Refined version. Source: own work, adapted from Schwartz et al. (2012).

Table 1

Goals pursued by the values of the refined theory. Source: own work, adapted from Schwartz et al. (2012).

4 third-order values	12 second-order values	19 first-order values
Self-transcendence (TRAS): promoting the wellbeing of society and nature above one's own interests, highlighting the acceptance of others as equals, as well as a concern for their wellbeing.	Universalism (UN): understanding and acceptance of others and a concern for the wellbeing of society and the planet we inhabit. Benevolence (BE): an interest and concern for the wellbeing of persons with whom one is in close contact. Humility (HU): acknowledgement of one's insignificance in the grand scheme of things. Also included in conservation	Nature (UNN): preservation of the natural environment. Concern (UNC): commitment to equality, justice and protection for all. Tolerance (UNT): acceptance and understanding of those different from oneself. Caring (BEC): devotion to the wellbeing of group members. Dependability (BED): being a reliable and trustworthy member of the in-group.
Conservation (CONS): preserving stability and security in relations with one's surroundings, with the emphasis on subservient self-repression, the preservation of traditional practices and protecting stability.	Conformity (CO): control of one's own impulses and behaviour, in line with social norms and expectations. Tradition (TR): respect for, commitment to and acceptance of the ideals and customs imposed by culture or religion. Security (SE): personal wellbeing and that of in-persons and in-groups, as well as the stability of society and oneself.	Rules (COR): compliance with norms, laws and formal obligations. Interpersonal (COI): avoidance of upsetting or harming others.
Self-enhancement (ENHA): promoting self-interest at the expense of others, emphasising the search for personal success and dominance over others.	Face or appearance (FA): security and power via the keeping up of one's own public image and avoidance of humiliation. Also included in self-enhancement. Power (PO): the search for social status and prestige, as well as control or dominance over people and resources.	Personal (SEP): safety in one's own immediate environment. Societal (SES): security and stability in wider society. Dominance (POD): power through exercising control over others. Resources (POR): power through control of material and social resources.
Openness to change (OPEN): controlling one's own impulses and behaviour, according to social norms and expectations.	Achievement (AC): personal success obtained by demonstrating competence according to social criteria or cultural norms. Hedonism (HE): the search for pleasure and sensuous gratification or satisfaction for oneself. Also included in openness to change. Stimulation (ST): the search for excitement, novelty and change, needed to keep up a good functional level. Self-direction (SD): independence of thought, action and opinion.	Thought (SDT): the freedom to cultivate one's own ideas and skills. Action (SDA): the freedom to determine one's own actions.

be more or less multidimensional: first-order in the original version, second-order in the revised and third-order in the refined. In any case, given that the values of a particular order are constituted by the values of the immediately lower order, their hierarchical structure can be analysed using confirmatory factor analysis (CFA). Indeed, one of the main advantages of analysing human values based on the TBHV is the factorial structuring of the relationships between the different types of values (Vollmer and Randler, 2012).

Nevertheless, to date, this kind of analysis of the refined version has rarely been carried out. For example, a number of studies have analysed the nineteen first-order values using CFA, showing the usefulness of said methodology in tackling the theory, amongst them Cieciuch and Davidov (2012), Cieciuch and Schwartz (2012), Saris et al. (2013) and Lilleoja et al. (2016). In a couple of cases, the second-order model has been analysed using CFA, grouping the nineteen first-order values into their respective second-order values (Schwartz et al., 2012; McQuilkin et al., 2016). And there has been one sole case in which CFA of the complete third-order factorial structuring has been performed, grouping together the nineteen first-order values into their twelve second-order values and the latter, in turn, into four third-order ones (Cieciuch et al., 2014).

So, the goal of this study is to carry out an analysis that, like the latter paper, permits confirmation and reproduction of the complete third-order factorial structuring of Schwartz et al.'s refined theory (2012), making this the second time this has been done.

3.1. Data collection

For the sake of convenience, the study's population was made up of students, alumni, personnel, in-house and affiliated staff of the Universitat Oberta de Catalunya (Open University of Catalonia, UOC – Barcelona, Spain). The data was collected over May and June of 2016 using an online questionnaire sent by email and published on the university's Virtual Campus, with participation being voluntary and anonymous. After a series of socio-demographic identificatory questions, there were others on the subjects' personal values, scored on a Likert scale from 1 to 7.

The questionnaire was approved by UOC's Ethical Committee and informed consent was obtained from all participants. For further details about the questionnaire, please see the Appendix.

Of the 126,587 subjects making up the study's population, the sample collected totalled 1,559, of whom 43.3% were men and 56.7% women. The average age was 45.3, with a deviation of 10.9 years and with ages ranging between 19 and 72.

3.2. Definition of measurement scales

Measurement of the different types of subjects' personal values was performed using the PVQ (Portrait Values Questionnaire), a measurement tool defined and validated by the author of the refined version of the TBHV, Shalom Schwartz. After contacting said author directly, he

himself sent us the latest version of the questionnaire in Spanish, more particularly the revised PVQ-RR version, optimised and validated in studies carried out on the basis of the PVQ5X and following three different rounds of improvement and development. He also confirmed the possibility of using a Likert scale from 1 to 7, rather than the initially envisioned 1 to 6. The questionnaire was composed of fifty-seven items, equivalent to three items for each of the nineteen value groups into which the theory is divided in its third-order analysis. To conserve the preliminary validations performed with said questionnaire, the question order of the PVQ-RR was retained. Each one of the questions was about another person, so that respondents had to provide answers on their degree of similarity with that other person: from 1, if they were nothing like them, to 7 if they were very much like them. With the author's approval, we adapted the PVQ-RR using the first person instead of the third to simplify it for respondents without modifying the results.

3.3. Data analysis methodology

After an initial descriptive analysis of the data, performed to evaluate the sample's behaviour and trends and to identify possible aspects of the variability patterns in the data that could be concealed, we proceeded to corroborate its univariate and multivariate normality. After doing this, we then performed the confirmatory factor analysis (CFA) itself, to both identify the model and analyse its goodness of fit (absolute, incremental and parsimonious), reliability, convergent validity and discriminant validity.

4. Analysis

As noted above, the analysis performed in this study was based on the CFA of a third-order measurement model. To perform this analysis, we used the maximum likelihood, efficient and unbiased method, as well as the AMOS v22 module of the SPSS v21 statistics package.

To achieve identification, we fixed the variance of the latent factors to 1, allowed the loadings to be estimated freely, but allowed no covariances between uniqueness (Davis, 1993). Past research indicates the need to correct for biases (e.g. social desirability or acquiescence) that influence the importance attributed to values, regardless of individuals' "true" value priorities (Schwartz, 1992, 2006). To control such bias, we included a common factor on which we fixed the loadings of all items to 1 (Billiet and McClendon, 2000).

Table 2 Analysis of goodness of fit.

Goodness of fit	Parameter	Value	Criterion
Absolute	Absolute adjustment (X^2/df)	4.738	<5.0 (Marsh and Hocevar, 1985)
	Goodness-of-fit index (GFI)	0.883	>0.9 (Jöreskog and Sörbom, 1986)
	Standardised root mean square residual (SRMR)	0.061	<0.08 (Byrne, 1998)
Incremental	Root mean square error of approx. (RMSEA)	0.049	<0.08 (Steiger, 1990)
	Adjusted goodness-of-fit index (AGFI)	0.867	>0.9 (Jöreskog and Sörbom, 1986)
	Tucker-Lewis index (TLI)	0.905	>0.9 (Tucker and Lewis, 1973)
	Normed fit index (NFI)	0.892	>0.9 (Hu and Jen, 2005)
	Comparative fit index (CFI)	0.913	>0.9 (Bentler, 1990)
	Incremental fit index (IFI)	0.913	>0.9 (Schumacker and Lomax, 1996)
Parsimonious	Parsimonious goodness-of-fit index (PGFI)	0.774	>0.5 (Mulaik et al., 1989)
	Parsimonious normed fit index (PNFI)	0.818	
	Parsimonious comparative fit index (PCFI)	0.836	

4.1. Goodness of fit

After identifying the measurement model, we analysed its goodness of fit: absolute, incremental and parsimonious (Table 2). As can be seen, each and every one of the parameters analysed met the criteria required of them, except for three: the GFI, the NFI and the AGFI, whose values of 0.883, 0.892 and 0.867, respectively, were below the recommended 0.9. Nevertheless, as some authors suggest, both the GFI and the AGFI can be considered as valid above 0.8 (Baumgartner and Homburg, 1995), or 0.85 in the case of the AGFI (Schermelleh-Engel et al., 2003). Similarly, according to Bentler and Bonett (1980) the NFI parameter is very sensitive to high sample sizes, as is the case with this study. This, together with the fact that the NFI value obtained (0.892) is so close to the required minimum, justifies our acceptance thereof.

Accordingly, taking all the above into account, the model can be regarded as displaying an adequate goodness of fit.

To achieve this goodness of fit, and according to the modification indicators, it was necessary to eliminate thirteen of the fifty-seven items: BEC3, UNN2, HU3, CO11, COR3, TR2, SES1, SEP1, POR3, AC1, HE3, ST2 and SDA2. This number of indicators is similar to that which had to be eliminated in the goodness-of-fit validation analysis performed in Schwartz et al. (2012) and Ciecuch et al. (2014). Whatever the case, the minimum number of items finally used for each type of value was two.

Table 3 Analysis of reliability and convergent validity.

3 rd order	Std. loading	2 nd order	Std. loading	1 st order	Std. loading	CR	AVE
OPEN	0.919	SD	0.980	SDT1	0.662	0.799	0.577
				SDT2	0.801		
				SDT3	0.663		
				SDA1	0.851		
				SDA3	0.816		
				ST1	0.793		
				ST3	0.677		
				HE1	0.758		
				HE2	0.771		
				AC2	0.815		
				AC3	0.582		
				POD1	0.724		
				POD2	0.892		
POD3	0.805						
POR1	0.752						
POR2	0.850						
ENHA	0.596	ST	0.984	FA1	0.560	0.742	0.486
				FA2	0.759		
				FA3	0.565		
				SEP2	0.645		
				SEP3	0.662		
				SES2	0.772		
				SES3	0.880		
				TR1	0.705		
				TR3	0.806		
				COR1	0.864		
				COR2	0.783		
				COI2	0.810		
				COI3	0.804		
HU1	0.430						
HU2	0.701						
UNN1	0.888						
UNN3	0.876						
UNC1	0.703						
UNC2	0.858						
UNC3	0.864						
UNT1	0.687						
UNT2	0.812						
UNT3	0.771						
BEC1	0.797						
BEC2	0.906						
BED1	0.775						
BED2	0.879						
BED3	0.753						
CONS	0.730	FA	0.964	SEP2	0.645	0.850	0.575
				SEP3	0.662		
				SEP2	0.645		
				SEP3	0.662		
				SEP2	0.645		
				SEP3	0.662		
				SEP2	0.645		
				SEP3	0.662		
				SEP2	0.645		
				SEP3	0.662		
				SEP2	0.645		
				SEP3	0.662		
				SEP2	0.645		
SEP3	0.662						
TRAS	0.995	SE	0.964	SEP2	0.645	0.906	0.764
				SEP3	0.662		
				SEP2	0.645		
				SEP3	0.662		
				SEP2	0.645		
				SEP3	0.662		
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				SEP2	0.645		
				SEP3	0.662		
				SEP2	0.645		
SEP3	0.662						
UN	0.950	UN	0.786	UNN1	0.888	0.906	0.764
				UNN3	0.876		
				UNC1	0.703		
				UNC2	0.858		
				UNC3	0.864		
				UNT1	0.687		
				UNT2	0.812		
				UNT3	0.771		
				BEC1	0.797		
				BEC2	0.906		
				BED1	0.775		
				BED2	0.879		
				BED3	0.753		
BE	0.919	BE	0.938	BEC1	0.797	0.906	0.764
				BEC2	0.906		
				BED1	0.775		
				BED2	0.879		
				BED3	0.753		
				BEC1	0.797		
				BEC2	0.906		
				BED1	0.775		
				BED2	0.879		
				BED3	0.753		
				BEC1	0.797		
				BEC2	0.906		
				BED1	0.775		
BED2	0.879						
BED3	0.753						

Table 4
Discriminant validity analysis.

	OPEN	TRAS	CONS	ENHA
OPEN	0.760	0.902–0.949	0.401–0.502	0.110–0.235
TRAS	0.926	0.874	0.485–0.576	0.028–0.092
CONS	0.452	0.531	0.759	0.425–0.526
ENHA	0.173	0.032	0.476	0.697

Table note: the diagonal includes the squared root of each factor's AVE. Beneath the diagonal are the correlations of the different factors, whilst the associated confidence intervals are above them.

Additionally, and unlike with Ciecuch et al.'s research (2014), in this study, there was no need to carry out any type of "cross-loading", as all the hierarchical relationships coincided with those contemplated in the refined theory.

4.2. Reliability and convergent validity

After eliminating thirteen items, and having identified the measurement model and verified its goodness of fit, we then analysed its reliability and convergent validity. This was performed by analysing the standardised factor loading, as well as the composite reliability (CR)

parameters and the average variance extracted (AVE).

As shown in Table 3, the factor loading was calculated for the first-, second-, and third-order values, all of which exceeded 0.5 (Hair et al., 2008), except for some cases justified below. Hedonism loaded on two different third-order values, openness to change and self-direction. In the former case, the factor loading was 0.729, falling to 0.214 in the latter. Although this latter value was well below 0.5, it was not taken into account for the purpose of this analysis, since the principal loading of 0.729 did comply with the established criterion. The same was the case with the face and humility values. The former loaded on self-direction and conservation, displaying factors of 0.322 and 0.730, respectively, whilst the latter did so on conservation and self-transcendence, with factors of 0.131 and 0.739, respectively. In both cases, as with the previous one, the smaller factors were not taken into account for the purposes of this analysis.

The CR values were always above 0.7 (Hair et al., 2008). Additionally, the measurement scales showed AVE values in excess of 0.5 (Fornell and Larcker, 1981), except for the 0.486 displayed by self-enhancement. Nevertheless, as it was a value close to the minimum required, we decided to take it into account for analysis purposes.

Accordingly, in light of all of the above, we were able to corroborate the reliability and convergent validity of the model analysed.

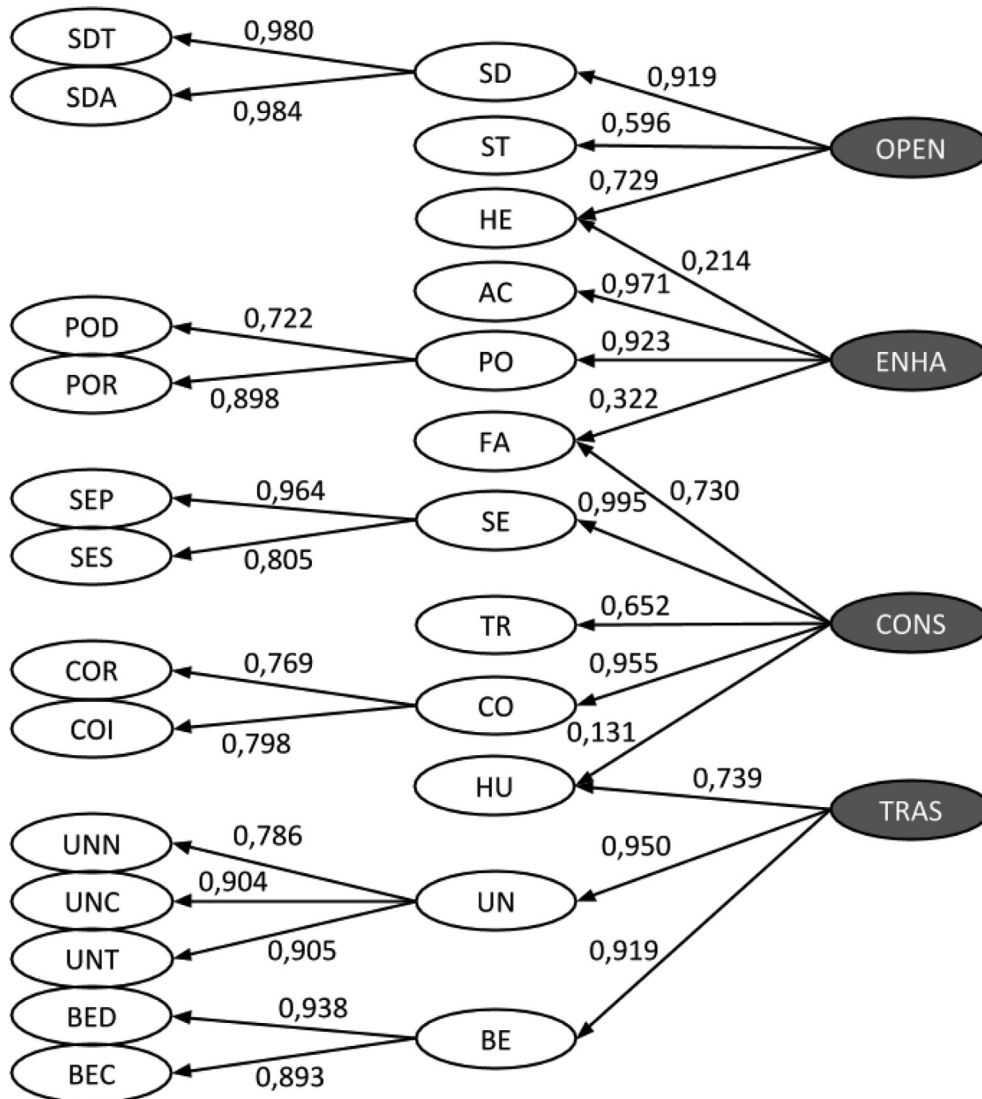


Fig. 4. Factor loading (***) $p > 0.001$ in the third-order structure.

4.3. Discriminant validity

Analysis of discriminant validity was performed with the confidence interval and variance extracted tests. As can be seen from Table 4, with regard to the confidence interval test, the range included within the correlation coefficient, plus and minus twice its standard error, never included the number one (Hair et al., 2008). Additionally, with regard to the variance extracted test, the square root of the AVE of the factors exceeded the correlations of said factors with the remainder thereof. Only in one case was this criterion not met, specifically the correlation between openness to change and self-transcendence. The reason for this is that the correlation between these two types of values is very high (0.926). Nevertheless, according to Schwartz et al. (2012) own circular structuring of the values model, it is (up to a point) logical that there be great correlation between two types of values that share the common trait of pursuing intrinsic motivations. Even so, we contacted the theory's author to comment on this result. On his recommendation, in line with the procedure followed by Cieciuch et al. (2013), we grouped these two types of values into a single factor, comparing the difference between the X^2 obtained with and without this modification. Given that the difference obtained was not statistically significant, we had to drop the most restrictive model (that modified after grouping the two factors into one), remaining with that initially contemplated.

On this basis, bearing in mind all the above, it was possible to confirm the discriminant validity of the model analysed.

4.4. Third-order structuring and factor loading

After identifying the measurement model, and verifying its goodness of fit, reliability, convergent and discriminant validities, the CFA performed in this study could be deemed concluded and, above all, validated. Accordingly, its objective, consisting in confirming and reproducing the third order of the refined theory (Schwartz et al., 2012) can also be deemed met. Fig. 4 shows the structuring finally obtained for the model analysed, with the corresponding factor loading of the different types of values, all of them statistically significant with a *** degree ($p > 0.001$).

5. Discussion

As seen in Fig. 4, we have been able to corroborate the third-order factor structuring defined in Schwartz et al. (2012).

We have also been able to confirm that second-order values load on third-order ones:

- Self-direction, stimulation and hedonism on openness to change.
- Hedonism, achievement, power and face (or appearance) on self-enhancement.
- Face (or appearance), security, tradition, conformity and humility on conservation.
- Humility, universalism and benevolence on self-transcendence.
- Of the detailed analysis of the loads of the values shared by different dimensions, we would highlight the following:
 - Hedonism, a value shared between openness to change and self-enhancement, shows loads of 0.729 and 0.214 respectively. Its greater fit with the dimension openness to change is in line with Schwartz's results (2006).
 - Face or appearance showed loads of 0.322 and 0.730 on self-enhancement and conservation, respectively. The greater loading on conservation is a result in line with that obtained in Cieciuch et al. (2014).
 - Humility, a value shared between conservation and self-transcendence, displayed loads of 0.131 and 0.739, respectively. The greater fit with the self-transcendence dimension is in line with Schwartz's results (2006).

In turn, first-order values load on second order ones:

- Thought and action on self-direction.
- Dominance and resources on power.
- Personal and societal on security.
- Rules and interpersonal on conformity.
- Nature, concern and tolerance on universalism.
- Caring and dependability on benevolence.

6. Conclusions

With this study, we have been able to confirm that the personal values contained therein display a third-order structuring, in line with that posited by the refined theory of Schwartz et al. (2012). This is the second time this has been shown, after the validation performed by the author himself and his collaborators in Cieciuch et al. (2014). As noted above, the validation of and empirical support for this refined theory is important, as it allows us to reduce or eliminate the problems of multicollinearity, amongst others, presented by the original and revised versions.

One of the limitations of this study has been the need to eliminate thirteen of the fifty-seven measurement items to achieve a good fit for the model. Although this is a figure similar to that for the items eliminated in Schwartz et al. (2012) and Cieciuch et al. (2014), future lines of research should include a redefinition of said items, repeating the study performed to once again analyse their goodness of fit, as well as the rest of the confirmatory factor analyses. In line with the focus of Bilsky et al. (2011), McQuilkin et al. (2016) and Borg et al. (2017), it would be worthwhile to perform multidimensional scaling (MDS) confirmatory analysis to examine the spatial relationship between the different values.

Declarations

Author contribution statement

August Corrons Giménez: Conceived and designed the analysis; Analyzed and interpreted the data; Contributed analysis tools or data; Wrote the paper.

Lluís Garay Tamajón: Conceived and designed the analysis; Contributed analysis tools or data; Wrote the paper.

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The authors declare no conflict of interest.

Additional information

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