The Religious Orientation Scale Revised among Spanish Catholic People: Structural Validity and Internal Consistency of a 21-item Model*

Escala de Orientación Religiosa revisada en católicos españoles: validez estructural y consistencia interna de un modelo de 21 ítems

Joaquín García-Alandete[a]
Universidad Católica de Valencia San Vicente Mártir, Spain
ORCID: http://orcid.org/0000-0003-0769-4060

César Rubio-Belmonte
Universidad Católica de Valencia San Vicente Mártir, Spain
ORCID: https://orcid.org/0000-0003-0689-4984

Beatriz Soucase-Lozano
Universidad Católica de Valencia San Vicente Mártir, Spain
ORCID: https://orcid.org/0000-0002-3385-960X

[a] Correspondence author. Email: ximo.garcia@ucv.es

ABSTRACT

The personal religious orientation understood as the motivation behind religious behaviors must be considered as the process that manages and organizes the behavior of those who are religious. Thus, identifying the dimensionality of religiosity is important (Francis, 2007; Kirkpatrick & Hood, 1990). This paper analyzed the structural validity and internal consistency of the 31-item Batson and Ventis Religious Orientation Scale. Participants were 529 Spanish Catholic undergraduates aged between 18 and 55 years, $M = 21.55$, $SD = 4.39$. A Principal Component Analysis with Equamax rotation method was performed on the ROS-31 with the randomized 50% of the sample, obtaining a 21-item three-component model (intrinsic, extrinsic, and quest religious orientations). Then, a CFA carried out with the other 50% of the sample showed an adequate fit of the obtained model, $SB\chi^2_{(186)} = 352.45$, $p < 0.01$, CFI = 0.93, IFI = 0.93, RMSEA = 0.059 (CI 90% [0.049, 0.067]). The intrinsic scale showed an excellent internal consistency, the quest scale showed good internal consistency, and the extrinsic scale showed an acceptable internal consistency. Future lines of research are suggested in order to clarify the relationship between the religious orientation scales and some psychosocial variables.

Keywords
religious orientation scale; construct validity; exploratory factor analysis; confirmatory factor analysis; internal consistency; catholic people.

Joaquín García-Alandete, César Rubio-Belmonte, Beatriz Soucase-Lozano.

RESUMEN

La orientación religiosa personal, entendida como la motivación subyacente a las conductas religiosas, debe ser considerada como el proceso que dirige y organiza la conducta de las personas religiosas. Identificar la dimensionalidad de la religiosidad parece, pues, ser importante. Este trabajo analiza la validez estructural y la consistencia interna de la Escala de Orientación Religiosa de Batson y Ventis de 31 ítems (ROS-31). Participaron 529 universitarios españoles con edades entre los 18 y los 55 años, $M = 21.55$, $SD = 4.39$. Se llevó a cabo un Análisis de Componentes Principales con rotación Equamax de la ROS-31 con el 50% aleatorio de la muestra, obteniendo un modelo de 3 componentes y 21 ítems (orientación religiosa intrínseca, extrínseca y de búsqueda). Un Análisis Factorial Confirmatorio con el otro 50% aleatorio de la muestra mostró un ajuste adecuado del modelo, $SB\chi^2_{(186)} = 352.45$, $p < 0.01$, CFI = 0.93, IFI = 0.93, RMSEA = 0.059 (IC 90% [0.049, 0.067]). La escala de religiosidad intrínseca mostró una consistencia interna excelente, la de búsqueda una consistencia interna buena y la extrínseca una consistencia interna aceptable. Se sugieren líneas futuras de investigación en orden a clarificar la relación entre las escalas de orientación religiosa y algunas variables psicosociales.

Palabras clave

escala de orientación religiosa; validez de constructo; análisis factorial exploratorio; análisis factorial confirmatorio; consistencia interna; católicos.

Religiosity has frequently been assessed in terms of its religious self-definition the frequency of cult attendance and prayer behavior, among other variables. However, religious differences between people might not only be a question of degree, as they can also be qualitative. Therefore, the religious orientation understood as the motivation behind religious behaviors must be considered as the process that manages and organizes the behavior of those who are religious (Allport & Ross, 1967). Thus, identifying the dimensionality of religiosity is important (Francis, 2007; Kirkpatrick & Hood, 1990).

Intrinsic, extrinsic, and quest religious orientations

Allport (1950) distinguished the difference between mature and immature religiosity. The former is related to the integration and organization of the personality, a consistent morality, and an intricate, flexible cognitive style, whereas the latter is related to self-gratification, which does not contribute to the integration of the personality or self-reflection. These orientations were later called intrinsic (IRO) and extrinsic (ERO), respectively (Allport, 1950). IRO implies the experience of religion as an end in itself and a fundamental motivation. It is an absolute criterion in decision making that integrates one's entire existence and provide meaning in life. Religion implies the internalization of a coherent system of beliefs and the experience of religion as valuable and meaningful; religion ultimately influences one's life; the rest of the needs are considered less important and are harmonized with religious beliefs; the individual lives the religion. ERO is a practical orientation: religion is a means for achieving specific purposes, such as security, social status, or support for one's lifestyle. Religion is an instrument, and the beliefs system is maintained to satisfy the more primary needs; extrinsic religiosity is egocentric (Allport & Ross, 1967). As Allport and Ross stated, "the extrinsically motivated individual uses his religion, whereas the intrinsically motivated *lives* his" (1967, p. 434). The IRO-ERO conceptual distinction has been revised, confirmed, and extended for decades (e.g., Allen & Spilka, 1967; Batson & Ventis, 1982; Batson, Schoenrade, & Ventis, 1993; Hunt & King, 1971; Maltby et al., 2010).

To assess these religious orientations, Allport and Ross (1967) developed the *Religious Orientation* Scale (ROS), a 20-item scale (11 extrinsic items, 9 intrinsic items) that has been revised, criticized, and modified in later studies (e.g. Brewczynski & MacDonald, 2006; Darvyri et al., 2014; Khodadady & Bagheri, 2012; Maltby, 2002; Neyrinck, Lens, Vansteenkiste, & Soenens, 2010; Simkin & Etchezahar, 2013). Allport and Ross (1967) obtained a Cronbach's alpha of 0.73 for the intrinsic scale and 0.70 for the extrinsic.

Batson (1976) criticized the fact that Allport substantially modified the meaning of the religious orientations by changing their names, and he suggested three independent religious orientations: Means, end, and quest (Batson &

Schoenrade, 1991a, 1991b; Batson & Ventis, 1982, 1985). Means and end orientations are conceptually equivalent to Allport's (1950) ERO and IRO. Quest religious orientation (QRO) is a flexible, open-ended religiosity in a responsive dialogue about existential questions raised by life's contradictions and tragedies. As Batson et al. (1993) stated, the QRO "involves honestly facing existential questions in all their complexity, while at the same time resisting clear-cut, pat answers" (p. 166). Batson (1976) considered that the QRO is mature, while the IRO (the most positive, accurate, and genuine for Allport) is dogmatic, uncritical, and rigid. Recent studies have revised the end, means, and quest dimensions of religiosity (e.g. Voci, Bosetti, & Veneziani, 2017). Batson and Ventis (1982) obtained a Cronbach's alpha of 0.83 for the intrinsic scale, 0.78 for the quest, and 0.72 for the extrinsic.

Batson and Ventis (1982) developed the *Quest Scale* (also called the *Interactional Scale*), which included 6 items that assess three dimensions as distinct constructs: the individual's readiness to face existential questions without reducing their complexity, self-criticism and perception of religious doubts as positive, and openness to change (Cfr. Batson, Schoenrade, & Ventis, 1993; Flere, Edwards, & Klanjsek, 2008; Watson, Morris, & Hood, 1989). Afterward, Donahue (1985) suggested that quest might measure agnosticism or religious conflict rather than religious orientation, and he proposed a 12-item quest scale (Cfr. Batson & Schoenrade, 1991a, 1991b).

The nature of the QRO and its relationship with both the intrinsic and extrinsic scales have been revised and criticized for decades (e.g., Flere et al., 2008; Miner, 2008). Nonetheless, the three religious orientations are accepted and frequently used constructs in the empirical research on religiosity (e.g., Brown & Westman, 2011; García-Alandete, Rosa, Sellés, & Soucase, 2013; Jaume, Simkin, & Etchezahar, 2013).

Structural validity and internal consistency of the ROS

Only a small number of studies have analyzed the factor structure of the ROS. Maltby (1999a), with a sample of 3090 adults and schoolchildren (1408 males, 1984 females) from the USA (N = 513), England (N = 1421), Northern Ireland (N = 839) and the Republic of Ireland (N = 468), obtained a 12-item version of the ROS using PCA with Oblimin rotation. In the so-called *'Age-Universal' I-E Scale*, in which he left out several items related to personal and communitarian praying and one item related to church attendance, which might be understood as both intrinsic (personal commitment) and extrinsic (social expression). On the other hand, this author criticized the fact that the item *It doesn't much matter what I believe so long as I am good* was not typical of the ERO, and that it might not even be a strictly religious item.

Ramírez (2006), in a sample of Spanish undergraduates, obtained a 27-item version of the ROS using a PCA with Quartimax rotation. The final solution was a 3-component scale: intrinsic (items 2, 7, 9, 12, 15, 19, 21, and 27; α = 0.89), extrinsic (items 1, 13, 14, 18, 22, 23, 25, 28, and 30; α = 0.72), and quest (items 3, 5, 6, 8, 10, 11, 20, 24, 26, and 31; α = 0.73).

Núñez-Alarcón, Moreno-Jiménez, Moral-Toranzo, and Sánchez (2011) carried out a PCA with Quartimax rotation and a CFA of a 25-item version of the Ramírez (2006) Spanish adaptation in two samples: 211 Christian undergraduates and 121 Muslim undergraduates. For the Christian sample, the ROS was composed of 3 scales: intrinsic (items 2, 7, 11, 14, and 16; α = 0.85), extrinsic (items 9, 10, 18, 23, and 24; α = 0.73), and quest (items 5, 6, 15, and 19; α = 0.75), $\chi^2(73)$ = 152.01, p = 0.000, CFI = 0.90, IFI = 0.90, RMSEA = 0.074. For the Muslim sample, the ROS was also composed of 3 scales: intrinsic (items 2, 7, and 22; α = 0.81), extrinsic (items 1, 9, 10, and 13; α = 0.74), and quest (items 3, 5, 8, 15, 19, and 25; α = 0.81), with an acceptable fit: $\chi^2(58)$ = 93.85, p = 0.002, CFI = 0.93, IFI = 0.93, RMSEA = 0.082.

Ramírez (2006) and Núñez-Alarcón et al. (2011) performed a CFA with the same sample with which carried out an exploratory procedure. As it is known, it is not a good methodological practice (e.g., Browne & Cudeck, 1993).

Khodadady and Golparvar (2011) explored the factorial structure of the ROS using a version that included the 20-item scale developed by Allport and Ross (1967), and another item added by Feagin (1964), in 329 Iranian undergraduates. These authors employed Maximum Likelihood, Principal Axis Factoring, and PCA, and they extracted four factors, challenging the Allport and Ross (1967) distinction of two factors.

The current study

The aim of the present study was twofold: First, to analyze the factorial structure of the ROS using a Spanish translation (Ramírez, 2006); second, to estimate the internal consistency of the ROS among Spanish Catholic people.

Method

Participants

Participants were 529 Spanish undergraduates (367 women, 69.40%, and 162 men, 30.60%) aged between 18 and 55 years, $M = 21.55$, $SD = 4.39$, recruited from different faculties in a private Spanish university: Physical Therapy ($n = 125$, 23.63%), Social Education ($n = 101$, 19.10%), Occupational Therapy ($n = 85$, 16.07%), Psychology ($n = 80$, 15.12%), Law Sciences ($n = 49$, 9.26%), Speech Therapy ($n = 46$, 8.70%), Podiatry ($n = 26$, 4.91%) and Educational Sciences ($n = 17$, 3.21%). Most of the participants were unmarried ($n = 506$, 95.65%), followed by those who was married or lived with a common-law partner ($n = 22$, 4.16%), and by divorced ($n = 1$, 0.19%). All participants reported to be Catholics and believers. Participation was voluntary and participants did not receive any compensation for their contribution.

Instrument

Religious Orientation Scale (ROS) (Batson & Ventis, 1982). We used the Ramírez (2006) Spanish translation, a 31-item scale (ROS-31 henceforth): 8 for the intrinsic scale, 11 for the extrinsic, and 12 for the questionnaire, which is responded to on a Likert-type scale (1 = Strongly disagree; 9 = Strongly agree). Ramírez (2006) obtained Cronbach's alphas of 0.89, 0.73, and 0.72, respectively. In the current study, the internal consistency was very good for the intrinsic scale, $\alpha = 0.94$, good for the quest, $\alpha = 0.83$, and acceptable for the extrinsic, $\alpha = 0.77$.

Procedure

Participants were recruited in a Spanish university, and they were asked for their informed consent and filled out a protocol that included the Spanish adaptation of the ROS-31 (Ramírez, 2006), under the supervision of the authors. Anonymity was guaranteed, doubts were resolved, and the need to give honest answers was highlighted, in order to maximize the validity of the information. The average time to fill out the protocol was 30 minutes.

Data analyses

A Confirmatory Factor Analysis (CFA) of the ROS-31 was performed. Because the model showed an inadequate fit, a Principal Component Analysis (PCA) extraction method and Equamax rotation method were carried out in the randomly selected 50% of the sample (Browne & Cudeck, 1993). In addition to both the Kaiser-Mayer-Olkin measure and Bartlett's sphericity test, the following criteria were taken into account: (1) the component loading of the items should be ≥ 0.40; (2) the items which loaded ≥ 0.40 in two or more components would be removed; (3) the component in which at least 3 items did not load ≥ 0.40 would be dismissed.

Then, a CFA of the final solution was carried out in the other 50% of the sample. Because

it was not possible to assume multivariate normality, robust estimation was used (Satorra & Bentler, 2001). Fit indices included the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) (a score between 0.90 and 0.95 indicates reasonable model fit), and Root Mean Square Error of Approximation (RMSEA) (a score lower than 0.050 is optimal, a score between 0.050 and 0.080 suggests an acceptable fit, a score between 0.080 and 0.10 suggests a mediocre fit, and a score higher than 0.10 indicates an unacceptable fit) (e.g., Hair, Anderson, Tatham, & Black, 2006).

The reliability of the obtained model for the ROS was analyzed by estimating the Cronbach's alpha. A reliability index ≥ 0.70, 0.80, or 0.90 can be interpreted as acceptable, good, or excellent, respectively. Also, following the suggestions of experts (e.g., Brown, 2015), the Composite Reliability (CR) was calculated for each scale of the obtained model for the ROS.

For the PCA, descriptive statistics, correlations, and estimation of the internal consistency, the SPSS Statistics 22.0 program for Windows (IBM, 2013) was used. Interpretation of effect sizes for r was based on Cohen (1988). For the CFA, the EQS 6.1 for Windows (Bentler, 2006) was used.

Results

Descriptive statistics and Confirmatory Factor Analysis of the ROS-31

Descriptive statistics of the ROS-31 items are shown in Table 1. A CFA showed an inadequate fit of this model: $SB\chi^2_{(434)} = 2221.85$, $p < 0.01$, CFI = 0.75, TLI = 0.75, RMSEA = 0.088 (90 % CI [0.085, 0.092]).

Table 1

Means and standard deviations of the ROS-31 items

Item	Statement	M	SD
1(E)	The primary purpose of prayer is to gain relief and protection.	4.79	2.57
2(I)	It is important for me to spend periods in private religious thought and meditation.	3.60	2.48
3(Q)	As I grow and change, I expect my religion also to grow and change.	3.93	2.72
4(E)	Although I believe in my religion, I feel there are many more important things in my life.	5.41	2.38
5(Q)	I am constantly questioning my religious beliefs.	3.04	2.34
6(Q)	It might be said that I value my religious doubts and uncertainties.	3.94	2.56
7(I)	If not prevented by unavoidable circumstances, I attend church.	2.37	2.30
8(Q)	I was not very interested in religion until I began to ask questions about the meaning and purpose of my life.	2.35	2.02
9(I)	I try hard to carry my religion over into all my other dealings in life.	2.89	2.54
10(E)	It doesn't matter so much what I believe so long as I lead a moral life.	5.57	2.79
11(Q)	For me, doubting is an important part of what it means to be religious.	3.67	2.47
12(I)	The prayers I say when I am alone, carry as much meaning and personal emotion as those said by me during services.	3.19	2.68
13(E)	The church is most important as a place to formulate good social relationships.	3.10	2.40
14(E)	What religion offers me most is comfort when sorrows and misfortune strike.	3.70	2.63
15(I)	Quite often I have been keenly aware of the presence of God or the Divine Being.	3.33	2.60
16(Q)	I do not expect my religious convictions to change in the next few years.	5.63	2.44
17(Q)	I find religious doubts upsetting.	3.22	1.99
18(E)	I pray mainly because I have been taught to pray.	2.64	2.27
19(I)	I read literature about my faith (or church).	2.28	2.02
20(Q)	I have been driven to ask religious questions out of a growing awareness of the tensions in my world and my relation to my world.	3.57	2.66
21(I)	My religious beliefs are what really lie behind my whole approach to life.	3.15	2.64
22(E)	Although I am a religious person, I refuse to let religious considerations influence my everyday affairs.	3.65	2.70
23(E)	A primary reason for my interest in religion is that my church is a congenial social activity.	2.53	2.00
24(Q)	My life experiences have led me to rethink my religious convictions.	3.84	2.73
25(E)	Occasionally I find it necessary to compromise my religious beliefs in order to protect my social and economic well-being.	2.58	2.02
26(Q)	There are many religious issues on which my views are still changing.	3.82	2.62
27(I)	Religion is especially important to me because it answers many questions about the meaning of life.	3.40	2.64
28(E)	One reason for my being a church member is that such membership helps to establish a person in the community.	2.14	1.79
29(Q)	I have not yet arrived to what I consider to be the truth about religion.	4.66	2.42
30(E)	The purpose of prayer is to secure a happy and peaceful life.	3.47	2.47
31(Q)	Questions are far more central to my religious experience than are answers.	4.04	2.63

Note.In parenthesis, the religious orientation: (E) = Extrinsic; (I) = Intrinsic; (Q) = Quest.

Principal Component Analysis of the ROS-31

A PCA extraction method with Equamax rotation method was performed on the ROS-31 (Table 2) with the randomized 50% of the sample ($N = 264$; 194 women, 73.5%, and 70 men; $M_{age} = 22.34$, $SD = 5.78$). The final solution showed a three-component model: Component 1 was composed by 8 items (2, 7, 8, 9, 12, 19, 21, and 27; 25.86% of the variance); component 2 comprised 7 items (5, 6, 11, 20, 24, 26, and 31; 16.83% of the variance); component 3 included 6 items (14, 22, 23, 25, 28, and 30; 13.42% of the variance). These components were called Intrinsic Religious Orientation (IRO), Quest Religious Orientation (QRO), and Extrinsic Religious Orientation (ERO), respectively. These components showed positive correlationships with an intermediate effect size (Cohen, 1988): $r_{(IRO-ERO)} = 0.46$, $r_{(IRO-QRO)} = 0.39$, and $r_{(ERO-QRO)} = 0.48$. The obtained scale was called Religious Orientation Scale-21 Items (ROS-21).

Table 2

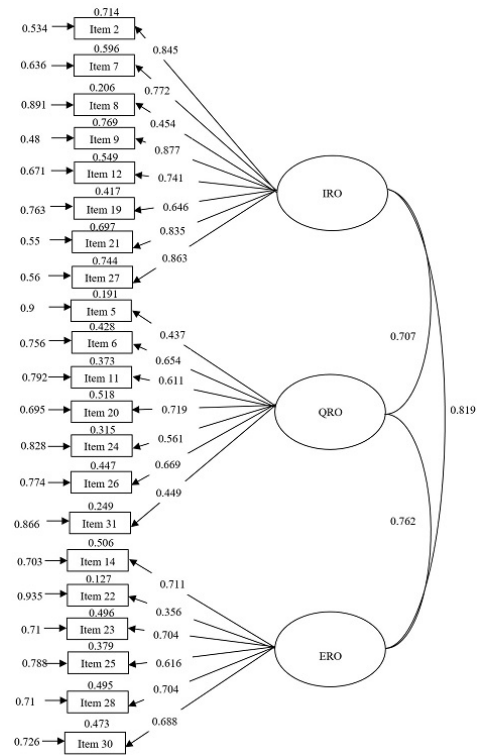*Principal Component Analysis of the ROS-31*

Item	Statement	PCA steps								
		1st[a] Component			2nd[b] Component			3rd[c] Component		
		1	2	3	1	2	3	1	2	3
1(E)	The primary purpose of prayer is to gain relief and protection	0.172	0.303	0.099						
2(I)	It is important for me to spend periods in private religious thought and meditation	0.775	0.328	0.063	0.805	0.252	0.111	0.807	0.244	0.105
3(Q)	As I grow and change, I expect my religion also to grow and change	0.508	0.490	0.185						
4(E)	Although I believe in my religion, I feel there are many more important things in my life	-0.162	0.161	0.298						
5(Q)	I am constantly questioning my religious beliefs	-0.061	0.689	0.086	-0.03	0.712	0.075	-0.03	0.729	0.069
6(Q)	It might be said that I value my religious doubts and uncertainties	0.254	0.703	-0.011	0.315	0.699	-0.032	0.313	0.703	-0.049
7(I)	If not prevented by unavoidable circumstances, I attend church	0.800	-0.007	0.160	0.79	-0.07	0.192	0.793	-0.082	0.194
8(Q)	I was not very interested in religion until I began to ask questions about the meaning and purpose of my life	0.450	0.304	0.178	0.473	0.281	0.188	0.488	0.266	0.198
9(I)	I try hard to carry my religion over into all my other dealings in life	0.880	0.166	0.038	0.895	0.095	0.094	0.902	0.082	0.096
10(E)	It doesn't matter so much what I believe so long as I lead a moral life	-0.518	0.381	0.046	-0.475	0.445	-0.051			
11(Q)	For me, doubting is an important part of what it means to be religious	0.242	0.641	0.119	0.281	0.629	0.13	0.279	0.642	0.124
12(I)	The prayers I say when I am alone, carry as much meaning and personal emotion as those said by me during services	0.620	0.177	0.336	0.622	0.132	0.369	0.626	0.127	0.366
13(E)	The church is most important as a place to formulate good social relationships	0.538	0.070	0.431						
14(E)	What religion offers me most is comfort when sorrows and misfortune strike	0.301	0.265	0.611	0.283	0.257	0.623	0.289	0.252	0.617
15(I)	Quite often I have been keenly aware of the presence of God or the Divine Being	0.764	0.094	0.372	0.752	0.048	0.415			
16(Q)	I do not expect my religious convictions to change in the next few years	0.089	0.110	0.136						
17(Q)	I find religious doubts upsetting	0.282	0.235	0.213						
18(E)	I pray mainly because I have been taught to pray	0.709	0.042	0.401						
19(I)	I read literature about my faith (or church)	0.678	0.242	-0.120	0.721	0.171	-0.084	0.73	0.157	-0.078
20(Q)	I have been driven to ask religious questions out of a growing awareness of the tensions in my world and my relation to my world	0.360	0.566	0.187	0.378	0.55	0.212	0.389	0.54	0.211
21(I)	My religious beliefs are what really lie behind my whole approach to life	0.811	0.224	0.116	0.829	0.161	0.16	0.834	0.147	0.157
22(E)	Although I am a religious person, I refuse to let religious considerations influence my every-ryday affairs	-0.187	0.191	0.646	-0.2	0.239	0.632	-0.205	0.255	0.619
23(E)	A primary reason for my interest in religion is that my church is a congenial social activity	0.227	0.005	0.760	0.152	0.045	0.787	0.155	0.047	0.787
24(Q)	My life experiences have led me to rethink my religious convictions	0.145	0.620	0.183	0.182	0.609	0.183	0.187	0.609	0.175
25(Q)	Occasionally, I find it necessary to compromise my religious beliefs in order to protect my social and economic well-being	0.003	0.313	0.491	-0.007	0.351	0.503	-0.009	0.366	0.502
26(Q)	There are many religious issues on which my views are still changing	-0.017	0.641	0.284	0.039	0.659	0.228	0.043	0.662	0.217
27(Q)	Religion is especially important to me because it answers many questions about the meaning of life	0.839	0.117	0.314	0.83	0.062	0.371	0.827	0.064	0.368
28(E)	One reason for my being a church member is that such membership helps to establish a person in the community	0.388	-0.080	0.589	0.329	-0.088	0.636	0.339	-0.09	0.652
29(Q)	I have not yet arrived to what I consider to be the truth about religion	-0.261	0.226	0.137						
30(E)	The purpose of prayer is to secure a happy and peaceful life	0.401	0.224	0.383	0.374	0.188	0.42	0.378	0.189	0.422
31(Q)	Questions are far more central to my religious experience than are answers	-0.210	0.661	0.249	-0.158	0.682	0.197	-0.153	0.692	0.194

Note. Extraction method: Principal Component Analysis. Rotation method: Equamax with Kaiser normalization. EV = Explained variance. In parenthesis, the religious orientation: (E) = Extrinsic; (I) = Intrinsic; (Q) = Quest. [a] Rotation converged in 11 iterations. [b] Rotation converged in 7 iterations. [c] Rotation converged in 7 i iterations.

Confirmatory Factor Analysis of the ROS-21

A CFA carried out with the other 50% of the sample ($N = 265$; 173 women, 65.3%, and 92 men; $M_{age} = 20.76$, $SD = 2.01$) showed an adequate fit of the obtained model, $SB\chi^2_{(186)} = 352.45$, $p < 0.01$, CFI = 0.93, IFI = 0.93, RMSEA = 0.059 (CI 90% [0.049, 0.067]). All the parameters of the standardized equation showed acceptable values, $p < 0.05$ (Figure 1).

Figure 1

Standardized solution for the 21-item model for the ROS obtained in the present study

Note. Values at the top of each rectangle are R^2; values at the left of each rectangle are errors

Reliability of the ROS-21

The IRO scale showed an excellent Cronbach's alpha, $\alpha = 0.92$, the QRO showed a good Cronbach's alpha, $\alpha = 0.82$, and the ERO showed an acceptable Cronbach's alpha, $\alpha = 0.72$. The right internal consistency of these scales was confirmed with the CR, which was 0.88 for the IRO scale, 0.76 for the QRO scale, and 0.76 for the ERO scale. Given that the minimum value considering suitable for CR is 0.70 (Hair, Hult, Ringle, & Sarstedt, 2017), the values found for each ROS-21 scale reflected an appropriate accuracy of these measures.

Discussion

The present study aimed to analyze the structural validity and internal consistency of the *Religious Orientation Scales* (Batson & Ventis, 1982) among Spanish Catholic people. A CFA showed a poor fit of the 31-item ROS model (Ramírez, 2006). Thus, a PCA with Equamax rotation method was carried out. The process resulted in a 21-item three correlated components model (ROS-21) with a good fit and internal consistency between acceptable and excellent.

Structural validity of the ROS-21

Regarding the results obtained in the present study, there are some differences with the Batson and Ventis (1982) model: item 15, which was included by Batson and Ventis (1982) in the intrinsic scale, was discarded in the present study; items 3, 29, 16, and 17, which were included by Batson and Ventis (1982) in the quest scale, were discarded in the present study; items 1, 4, 10, 13, and 18, which were included by Batson and Ventis (1982) in the extrinsic scale, were discarded in the present study; item 8, which was included by Batson and Ventis (1982) in the quest scale, was included in the intrinsic scale in the present study, probably because that item refers to meaning in life, which is significantly related to intrinsic religiosity (e.g., García-Alandete et al., 2013). In summary, concerning the Batson and Ventis (1982) model, all the three scales were reduced (especially both the quest and extrinsic ones), and the intrinsic scale included the item 8, in which religiosity is related to meaning in life.

Both the extrinsic and quest scales obtained in the present study were one-dimensional, rather than two-dimensional and three-dimensional, respectively, in contrast to other studies (e.g., Altemeyer & Hunsberger, 1992; Beck & Jessup, 2004; Brewczynski & MacDonald, 2006; Donahue, 1985; Gorsuch & McPherson, 1989; Gorsuch & Venable, 1983; Kirkpatrick, 1989; Leak, 2011; Neyrinck et al., 2010).

Internal consistency of the ROS-21

Regarding the internal consistency of the 21-item for the ROS obtained in the present study, the Cronbach's alpha was higher for the intrinsic scale but lower for the extrinsic scale than in Allport and Ross (1967). Likewise, the Cronbach's alpha was higher for both the intrinsic and quest scales than it was in Batson and Ventis (1982), and equal for the extrinsic scale. These data agree with previous studies (e.g., Batson & Schoenrade, 1991b; Darvyri et al., 2014; García-Alandete & Bernabé, 2013). Also, the CR values showed an appropriate accuracy of all the three religious orientation scales of the ROS-21.

In summary, as noted above, the 21-item model for the ROS is a scale with good structural validity and internal consistency.

Limitations of the present study and suggestions for future research

Some limitations of this study should be pointed out. First, the sample was only composed of undergraduates, most of them young people. Future studies should consider more representative samples of the general population. Second, the sample was composed exclusively of Catholic people; it would be important to use more heterogeneous samples, in terms of belonging to different religious identities (Muslims, Buddhists, Christians, others) (e.g., Johnstone et al., 2012), and a cross-cultural perspective (e.g., Ghorbani, Watson, Gharamaleki, Morris, & Hood, 2002). Likewise, to use a larger sample would allow to carry out multi-group confirmatory factor analysis (e.g., men and women, age subsamples).

It is necessary to further examine the construct validity and reliability of the ROS (e.g., Beck, Baker, Robbins, & Dow, 2001; Beck & Jessup, 2004; Donahue, 1985), in order to consider the idiosyncrasies of different religions and sociocultural contexts in the assessment of religious orientations (e.g., Flere et al., 2008; Flere & Lavrič, 2008). It is also important to

analyze the relationships between the religious orientations and other variables, such as the empathy and social desirability (Watson, Hood, Morris, & Hall, 1984), type of religious internalization (Ryan, Rigby, & King, 1993) or religious denomination (Maltby & Lewis, 1996), the field dependence/independence cognitive style (Barrett, Patock-Peckham, Hutchinson, & Nagoshi, 2005), rigidity (Maltby, 1998) and other personality variables (Maltby, 1999b) emotional intelligence (Liu, 2010) and self-determination (Neyrinck et al., 2010) among others, as well as the differences between the various religions (which might condition the meaning and comprehension of the items). More conservative and authoritarian religions, such as Islam, especially its more radical forms, might negatively influence the QRO and positively influence both the IRO and the ERO. By contrast, religions that recognize freedom of conscience and a more personalized religiosity, such as Lutheranism or Buddhism, might positively influence the QRO. In addition, the process of secularization and other cultural characteristics might also positively influence the QRO (in addition to atheism and religious indifference, of course; Cfr. Watson, Morris, & Hood, 1992), among others (Cfr. Kristensen, Pedersen, & Williams, 2002; Miner, 2008).

Finally, it seems to be particularly important to analyze whether the Quest orientation is a mature form of religiosity (Batson & Ventis, 1982), an expression of agnosticism (Beck & Jessup, 2004; Donahue, 1985), or a transitional form of religiosity related to doubt and the search for one's personal identity in early adulthood (e.g. Donahue, 1985; Klaassen & McDonald, 2002; Kojetin, McIntosh, Bridges, & Spilka, 1987; Spilka, Kojetin, & McIntosh, 1985). It might also be important to clarify its relationships with Intrinsic and Extrinsic religious orientations.

Conclusions

The present study analyzed the structure of Batson and Ventis (1982) *Religious Orientation Scale* (ROS) in a sample of Spanish Catholic people, obtaining a 21-item three-component (intrinsic, extrinsic, and quest scales) using both exploratory and confirmatory procedures. That model showed a reasonable adjustment, and the three scales showed an internal consistency between acceptable and good. However, further studies are necessary to clarify the nature of the religious orientations and their relationship, also to consider the idiosyncrasies of different religions and sociocultural contexts in the assessment of religious orientations.

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Notes