

## Article

# Sustainable Behavior among Spanish University Students in Terms of Dimensions of Religion and Spirituality

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**Abstract:** Although previous research projects have highlighted the pro-environment and pro-sustainability attitudes of traditional spirituality and religions, there is a lack of studies that explore the way in which expressions of different types of religion and spirituality, as well as measures of belief and non-belief, are related to the evocation of sustainable behaviors. This study, conducted with emerging adults, analysed the relationships between measures of the image of God, religious orientation, the importance of religion and spirituality, religious/spiritual experience, paranormal beliefs and non-belief (religious, spiritual and atheism), as well as altruistic, frugal, environmentally-friendly and equitable behaviors. The results were found to be consistent with the pro-environment character attributed to religion, as well as non-traditional forms of spirituality, indicating their link with sustainable behavior, particularly the measures focusing on belief/non-belief. They also highlighted an effect of the measures of religion/spirituality, indicating the benefit of using multivariate approaches of a qualitative and quantitative nature.

**Keywords:** sustainable behavior; religion; spirituality; paranormal beliefs; unbelief; atheism; god image

## 1. Introduction

This article shows the results of an exploratory study about the relationships between different dimensions of religion and spirituality and others of sustainable behavior in emerging adults. The diversity of religious, spiritual, and attitudinal characteristics of this group regarding age, and the fundamentally theoretical approach of previous studies to the understanding of the pro-sustainable character of religion, make this study worthwhile.

### 1.1. Sustainability and Sustainable Behavior

The concept of sustainability, in its original meaning, is linked to a concern for the preservation of natural resources with a view to ensuring their wellbeing, use and enjoyment by future generations. This is indicated by Kuhlman and Farrington [1], who highlight wellbeing as a key element of sustainability. Securing a higher quality of life for people and societies is the target of development, which is not possible without growth and evolution in the areas of economics, society and environmental protection [2]. On an individual level, when a person evokes a set of actions and consumption patterns as part of their lifestyle, these can be considered sustainable if they satisfy basic needs, lead to a higher quality of life, do not threaten the needs of future generations and minimise the use of natural resources and the emission of contaminants [3]. Therefore, sustainable behaviors are “a set of actions aimed at conserving the integrity of the socio-physical resources of our planet” ([4], p. 32).

For Corral-Verdugo, Frías-Armenta and García-Cadena (cited in [4]), these actions may be altruistic and environmentally-friendly (with the former referring to sustainable pro-social behaviors and the latter referring to behaviors that seek to protect the environment).

Sustainable environmentally-friendly behaviors are “intentional actions resulting in the protection of the earth’s physical resources” ([1], p. 32). Recycling, renewing the earth’s physical resources, responsible consumption, the conservation and re-use of water and energy, reading and discussion about environmental issues and the forming of political and corporate alliances to join forces with a view to increasing sustainability are examples of sustainable behaviors (see [4], for a more detailed description). Austerity, also referred to as frugality, is also considered to be a sustainable lifestyle. This is characterised by the limited consumption and waste of resources [5,6].

Pro-social behavior, however, is the most characteristic aspect of altruistic sustainable behaviors. Said pro-social behavior prioritises the wellbeing of others above that of oneself [7] and does not require sustainable behaviors that are rooted in cooperation to be reciprocated [8]. An altruistic behavior can be considered as sustainable if it contributes to the wellbeing of people and the preservation of the social and natural context of human life (see [9]). This social relevance in sustainable behavior is also reflected in the concept of equity, in terms of the equal ability to make use of natural resources [6] and the equal treatment of all people regardless of race, gender, culture and ethnic origin [10].

### *1.2. Aspects Related with Sustainable Behavior: Religion and Unbelief*

The study of the background aspects associated with the evocation of sustainable behaviors has included individual aspects in the shape of beliefs, intentions, values, norms, attitudes and behaviors (see [4,11]), highlighting individual altruistic socio-emotional aspects in the shape of motivations [12], a leaning towards cooperation as opposed to individualism [13] and the taking of sustainable decisions [14] deliberately [5]. Cognitive and psycho-social aspects were also mentioned, such as the absence of negative expectations regarding the unwanted consequences of acting in an environmentally-friendly manner, the perception of the existence of environmental norms that are valued by the social group to which one belongs, self-presentation and affinity for diversity [6].

Emotions also play a key role, acting to inhibit or facilitate sustainable behaviors in line with the positive or negative nature of the emotions that go hand-in-hand with a sustainable behavior [11], such as sentiments of indignation with regards to environmental damage [11]. Personality psychology has also been linked to individual traits [11,15]; and, along the same lines, positive psychology has attributed sustainable behavior to the presence of individual pro-sustainability capacities and dispositions (i.e., pro-sustainability orientation). The former includes the individual’s pro-environmental aptitudes and skills that can be adapted in a socio-cultural context that promotes environmentally-friendly behavior. The latter includes the individual’s psychological strengths and virtues [11], which may be interpersonal and spiritual.

The aim of this study is to broaden our knowledge of the background aspects to spiritual and religious sustainable behavior. Said interest is justified by the existence of a large number of previous research projects, which have shone a light on the interest of religions in protecting the environment (e.g., [15–17]) and their association with “core dimensions of contemporary ecological paradigms: Caring behavior, the defence of, and concern for, nature” ([18], p. 324), and the lack of studies that analyse the relationships between measures of sustainable behavior and expressions of religion and spirituality.

Traditional religiousness and spirituality exercise a notable influence over the sustainable attitudes and behaviors of institutions [19] and societies [20]). They also affect individual behavior, in particular that of consumers [21–24]. In Buddhism, for example, it has been associated with corporate environmental responsibility [25] and sustainability [26], both in socio-institutional contexts. On an individual level, religion and spirituality facilitate sustainable behavior through their influence on personal values [27], motivations and goals [20], lifestyles [28], ethics [29,30] and moral identity [31]. Empirically, previous studies have also linked Christian and Buddhist religiousness to greater

sustainable consumption [32], intrinsic religious orientation with green product purchases [33] and religiousness/spirituality with sustainable behavior and attitudes (cited in [20]).

However, there are also theoretical and empirical reasons that suggest a negative influence of religion on sustainability. For example, and especially in Judaeo-Christian denominations [16,17,34,35], frequency of prayer [36], self-reported identification with a specific religion [17,37], and a severe vs. benevolent image of God [38] have shown a negative effect on concern for the environment [17]. Likewise, a position of dominion over nature [16] has been related to orthodoxy and fundamentalism [39]. In line with this approach, a negative influence of religion on sustainability may be associated with an anthropocentric worldview. This “assumes that humans are the masters of nature, which exists to serve their needs, and includes beliefs reflecting a utilitarian and rational understanding of the relationship between the self and the environment” ([40] in [17], p. 326).

Non-religiousness has also been shown to be empirically related to sustainability, although in contrasting manners between different studies, with both positive relationships (e.g., greater sustainability in people who self-identify as non-religious, or as a function of the image of God; see [20] and [41], respectively) and negative relationships (e.g., between religiousness/spirituality and sustainable consumption [42]; or between responsible consumption and the image of God [41]. Lee, Bahl, Balck, Duber-Smith and Vowles [43] also highlighted how high levels of religiousness did not affect unsustainable consumption, although spirituality did affect both sustainable and unsustainable consumption.

### 1.3. This Study

Taken together, these studies highlight (1) the diversity of religious measures used, the majority of which were based on religious belief, identity and positioning, (2) the link between sustainability and dimensions of belief as well as non-belief or non-religiousness, (3) the lack of studies that differentiate between dimensions of religion and spirituality or studies that compare religiousness of a different nature (e.g., belief, practice, motivation, experience, etc.).

In this context, this research project proposes an exploratory study of the relationships between different measures of religion and spirituality (i.e., religious orientation, religiousness, experience, image of God, importance of spirituality, paranormal beliefs, existential wellbeing) and measures of sustainable behavior (i.e., altruism, austerity, equity and environmentally-friendly behavior) in emerging adults. The emerging adulthood comprises people between the ages of 18 and 25 [44], although it was extended until 30 years old in this case [45]. With regards to spiritual and religious aspects, the questioning of traditional beliefs is characteristic of this stage, as is a prevalence of individual spirituality over community spirituality, making people in this demographic appear to be more distant from traditional religions, exhibiting an eclectic religiousness in which they select the aspects of religions that best fit their beliefs and values [46,47]. Compared to previous generations, this generational group consists of a greater number of people who are atheist, agnostic and indifferent to religion [47].

It is also characterised by a greater social commitment [48], based on religious and non-religious issues, and the need to make the world a better place [49,50]. This diversity of religious, spiritual, and attitudinal characteristics make emerging adulthood a particular stage in which the associations between religion, spirituality, and sustainable behavior dimensions are worthy of consideration.

Moreover, there are two reasons for which this study may contribute to a broadening of knowledge. Firstly, by performing a joint study of aspects which had, until now, only been studied in isolation (particularly in the area of religiousness), and non-belief in relation to sustainable behavior. Secondly, due to the lack of previous studies carried out on this topic in Spain.

Given the fact that many of the variables have not been studied together previously and that we are proposing a quantitative study, a descriptive empirical research design appears to be the most appropriate. This seeks (see [51]) to identify the properties of the variables studied in a given study

sample by recording and subsequently analysing and studying the relationships between them. This study will also be non-experimental, *ex post facto* and transversal.

While it is not common to establish hypotheses in descriptive studies, when studying the relationship between variables of sustainable behavior, religion and spirituality, it would make sense to at least propose general trends. Given the range of relationships that were observed—some of which were even contradictory—due to the existing differences in the ways of measuring religiousness [52], one might also expect to see different relationships depending on the nature of the factors of religion or spirituality: Religion contributing more to sustainable behavior than spirituality, which could appear as a negative or even independent relationship, as well as measures of traditional belief and religiousness. In line with this trend, negative relationships would be observed between sustainable behaviors and measures of non-belief, and independence or a positive relationship in the case of different measures of non-religiousness.

## 2. Materials and Methods

### 2.1. Participants and Procedure

A total number of 720 people with an average age of 20.64 years (range = 17–57) participated in the study, in which 86% of the participants were women, reflecting the common female majority in the degrees for which the data were collected.

Data were collected in the faculties of Social Work and Education Sciences at the Universidad de Granada (Spain) from students of Social Work, Pedagogy, Social Education and Primary Education. There were two forms of data collection—online or by completing a questionnaire in person—depending on the extent to which the students or lecturers were involved. In those cases in which the lecturer who was contacted chose to reward the participating student with credits, the online data collection method was used. In those cases in which the students were not rewarded in any way for their participation, meanwhile, and by means of obtaining the highest possible number of completed questionnaires, these were completed in-person in a single session with the student, with the study authors explaining their study objectives. The number of questionnaires completed by participating students in each group/class depended on the time available in each of these; as such, we did not obtain the same number of completed questionnaires in each group/class. For this reason, the number of participants who responded to the different instruments used in this study, and that appear in the Results section, is not the same across all variables. In the study, only completed questionnaires were considered. Ethical standards were adhered to in all cases, with each student signing an informed consent form prior to completing the questionnaires.

Of the participants, 9.6% indicated that they did not believe in any type of God, and 9.2% indicated that they did not know whether or not God exists. Meanwhile, 6.8% indicated that they believed in a personal God, 5.1% indicated that they believed in an impersonal God and 2.8% indicated that they believed in a God that created everything but who does not interfere in human affairs. Previous studies have shown a higher religiosity in education sciences [53,54] and lowest in students of science, engineering, technology and mathematics [55].

This description is coherent with the religious characterization of the Andalusian youths. This is one of the Spanish regions with a higher percentage of believers (76.75%). This also has 20.9% of people that do not profess any religion, as pointed out by the Ferrer I Guardia Foundation [56]. The religiosity of Andalusian youths is more popular than institutional. This has to do [57] with brotherhood and *cofradías*, pilgrimages, and transitional rituals (e.g., baptism, weddings, and funerals).

Among the participants, 78% were full-time students, and 22% of them were splitting their time between education and employment. In terms of political positioning, 56% defined themselves as liberal or highly liberal, and 8.4% defined themselves as conservative or highly conservative. All other students considered themselves to be politically moderate.

## 2.2. Instruments

*Scales of sustainable behavior.* The Altruism Scale [58] reflects disinterest in helping other people and institutions. This scale consists of 10 items for which the participant is asked to indicate the frequency with which they carry out each of the actions described (e.g., ‘I help elderly or disabled people cross the road’; ‘When I can, I donate clothes that I have worn that remain in a good condition’, etc.). For this, a 4-point Likert scale is used (0 = Never; 3 = Always). The Cronbach alpha coefficient for this sample was 0.63. The analysis of the causes of this reliability, compared to that reported by the authors [58], highlighted the negative effect of item no. 2 (i.e., ‘I help someone when they have tripped, fallen or hurt themselves in the street’) on the reliability of the scale, which jumped to 0.85 when this item was disregarded. The confirmatory factorial analysis of the 9 remaining items highlighted the presence of a single factor that explained 46.18% of the variance. The fit of this model to the data proved satisfactory ( $\chi^2 = 159.93$ ,  $gl = 27$ ,  $NFI = 0.94$ ,  $SRMR = 0.04$ ), taking into account the combination of indices proposed by Hu and Bentler [59] for models with a low number of degrees of freedom, as in this case. This tends to increase the value of the RMSEA index, thus increasing the probability of unjustifiably rejecting theoretical models [59].

The Corral-Verdugo, Tapia, Fraijo, Mireles and Márquez frugality scale [6] consists of 10 actions for which the participant is asked to indicate the degree to which they perform each one, on a 5-point Likert scale (0 = Totally disagree; 4 = Totally agree). The Cronbach alpha coefficient for this sample was 0.53. The scale reliability analysis highlighted the negative effect of item no. 6 (‘I almost always eat at home as opposed to eating out in restaurants or bars’). The explanatory factorial analysis of the 9 remaining items revealed a 2-factor structure that explained 50.86% of the variance. The first factor, which explained 31.37% of the variance, consisted of 6 items that grouped together austerity behaviors associated with a non-luxurious lifestyle (e.g., ‘I wear the same clothes as last season, although I could afford new ones’). The second factor, which explained 19.49% of the variance, grouped together 3 items that referred to the absence of unnecessary expenditure (e.g., ‘I buy more things than I need’). The reliability of these scales was 0.80 and 0.74, respectively ( $\chi^2 = 189.47$ ,  $gl = 20$ ,  $NFI = 0.85$ ,  $SRMR = 0.06$ ). Said factors were named ‘frugality’ and ‘responsible consumption’, respectively.

To measure equitable behavior, the 10-item version of the Corral-Verdugo et al. scale [6] was used, as implemented in Tapia-Fonllem, Corral-Verdugo, Fraijo-Sing and Durón-Ramos [6]. Each of the proposed behaviors are examples of equal treatment in various situations (e.g., ‘I treat immigrants in the same way as non-immigrants’), for which the participants were asked to indicate the degree to which each item reflects their normal way of behaving. This follows a 4-point Likert scale (0 = Totally disagree; 4 = Totally agree). The reliability for this sample was 0.79.

Environmentally-friendly behavior was also measured, based on items used by Tapia-Fonllem, Corral-Verdugo, Fraijo-Sing and Durón-Ramos [6], taken from the Kaiser’s General Ecological Behavior Scale [60]. This unifactorial structure, which explained 54.20% of the variance, consisted of 5 different items (e.g., ‘I save and recycle used paper’; ‘I separate empty bottles for recycling’; ‘I’ve informed someone when they have behaved in a manner that harms the environment’; ‘I talk with my friends about environmental problems’; and ‘I encourage my friends and family members to recycle’), for which the fit indices ( $\chi^2 = 44.21$ ,  $gl = 50$ ,  $NFI = 0.94$ ,  $SRMR = 0.04$ ) and reliability index ( $\alpha = 0.79$ ) were satisfactory. Responses were provided using a 3-point Likert scale (0 = Never; 3 = Always).

*Image of God.* The version of the Image of God questionnaire used in this article was obtained by translating the original version in English by Johnson, Okun, Cohen, Sharp and Hook [61] into Spanish. After obtaining two translations into Spanish—one produced by the authors of this article and another by a professional translator—the few observed discrepancies were resolved on the advice of a professional translator in a meeting with the working team. The resulting pilot questionnaire was presented to a group of 23 students who did not indicate any difficulties in understanding the questionnaire or its instructions, and faced no problems when completing it.

This questionnaire consists of 5 × 5-item scales, containing 5 different images of God. The image of an Ineffable God addresses the person’s inability to describe the divine, reflecting a content of the belief



that reflects the subject's lack of clarity as to who, or what, God actually is. The image of God expressed in this category underlines that God is Unimaginable, Inconceivable, Incomprehensible, Inscrutable and Unknown. The image of a Mystical God groups together lines of thought about a divinity that is more spiritual than religious, including adjectives that associate this image of divinity with conceptions of modern spirituality that differ from traditional religions. The image of a Mystical God highlights that God is conscience, energy, universe, nature and cosmos. The image of an Unlimited God entails aspects associated with a notion of divinity as an omnipresent spirit, whose adjectives transcend the conceptions of any traditional religion, with God being described as immense, infinite, enormous, limitless and unlimited. The image of an Authoritarian God encapsulates an anthropomorphic vision of divinity in which God is considered as punitive, controlling and just, described by using adjectives such as irascible, severe, punishing, strict and dominant. The image of a Benevolent God contradicts this, describing God as tolerant, indulgent, clement, compassionate and merciful. To complete the questionnaire, participants had to use a 7-point Likert scale (1 = Strongly disagree; 7 = Strongly agree) to indicate the extent to which they felt that each adjective described God, based on their own experience and personal beliefs.

The confirmatory study of the structure of the original questionnaire, with 5 scales and 28 items, indicated poor fit of said model to the data ( $\chi^2 = 235.89$ ,  $gl = 110$ ,  $GFI = 0.91$ ,  $TLI = 0.69$ ,  $RMSEA = 0.06$ ,  $AIC = 321.86$ ), resulting in a 4-factor structure which explained 68.45% of the variance but which was lacking in theoretical significance, with the first, second, third and fourth factor explaining 33.44%, 16.83%, 11.39% and 6.78% of the variance, respectively. For this, an exploratory analysis was conducted which returned a 3-factor structure, after eliminating all of the items that were above 0.35 in two or more factors. The resulting structure highlighted 3 factors which explained 70.54% of the variance. The first factor explained 46.97% of the variance, grouping items from the original factors that corresponded to the images of a Benevolent, Unlimited and Mystical God. This consisted of 10 items, showing a high degree of reliability ( $\alpha = 0.95$ ). The second factor consisted of 4 items from the original scale of an image of an Authoritarian God, explaining 15.95% of the variance. This also showed satisfactory reliability ( $\alpha = 0.89$ ). The third factor grouped together 3 items from the scale of an image of an Ineffable God, which explained 7.62% of the variance and showed satisfactory reliability ( $\alpha = 0.73$ ). The goodness-of-fit indices of the structural equation analysis showed an acceptable fit of the model to the data ( $\chi^2 = 235.89$ ,  $gl = 110$ ,  $GFI = 0.91$ ,  $RMSEA = 0.06$ ,  $AIC = 321.86$ ). This structure is coherent in the social context in which the data were collected, in which Catholic religious education and culture, subsequent to the Second Vatican Council (CVII), have favoured the survival of a unified image of Christian divinity characterised by concepts of a mystical, benevolent and unlimited God. This has coexisted—especially in elderly people and those educated in a traditional religious manner—with an image of an Authoritarian God, belonging to a more traditional and preconiliar vision of divinity. The image of an Ineffable God, in which it is impossible to explain divinity in words, resonates less on a socio-cultural and institutional religious level.

*Scales of dimensions of religiousness.* The Spanish version of the Batson and Ventis [62] religious orientation scale, adapted by Ramírez [63], consists of three scales that measure intrinsic, extrinsic and quest religious motivations (also called orientations by the author of this instrument). The person whose religiousness is intrinsically orientated internalises the precepts and beliefs of the religion, prioritising these above other requirements and finding a sense of life in religion. An extrinsic religious orientation, meanwhile, uses religion as a means to other ends; using it as a resource to obtain security, consolation, sociability, status, etc. Quest religious orientation is a flexible form in which there is doubt, uncertainty and a certain questioning about one's beliefs, where said beliefs and religiousness are subject to change and maturity. The internal consistency of the scales in this study were 0.85, 0.92 and 0.88 for the extrinsic, intrinsic and quest religious orientation scales, respectively.

The brief version of the Expressions of Spirituality Inventory [64], as found in the adaptation of Muñoz-García [65], was implemented to measure the dimensions of cognitive orientation, religious and spiritual experience, religiousness, and paranormal beliefs. This questionnaire consisted of  $5 \times 6$ -item

scales, each measuring 5 expressions of spirituality, using a 5-point Likert scale to collect responses (ranging from 0 to 4). The cognitive orientation towards spirituality sub-scale ( $\alpha = 0.90$  in this study) is cognitive-perceptual and measures both the importance that the person places on spirituality and the relevance of beliefs, perceptions and attitudes related to spirituality for them. The sub-scale of experiential expression ( $\alpha = 0.89$  in this study) pertains to religious and spiritual experiences, understood in a broad sense by integrating religious and spiritual experiences as well as transpersonal and transcendental experiences. The sub-scale of religiousness ( $\alpha = 0.90$  in this study) refers to the importance and degree to which a person agrees with statements pertaining to an intrinsic religiousness insofar as behaviors, belief and religious attitudes are concerned. Finally, a group of 6 statements gauged the extent to which the participant believes in paranormal phenomena of a psychological, spiritual and witchcraft nature ( $\alpha = 0.78$  in this study).

*Atheism.* The measurement devised by Johnson, Okun, Cohen, Sharp and Hook [61] was used, assessing the degree to which the person agreed with 3 items regarding the non-existence of God: God is imaginary, not real and non-existent. For this, a 7-point Likert scale was used (1 = Strongly disagree; 7 = Strongly agree). The factorial analysis outlined the presence of a single factor which explained 75.20% of the variance and showed a satisfactory internal consistency ( $\alpha = 0.83$ ).

*Religious unbelief.* The Pennycook, Cheyne, Seli, Koehler and Fugelsang religious belief scale [66] assesses 6 common beliefs held amongst religious people: In heaven, hell, miracles, angels, devils, life after death and an immaterial God. Participants responded on a 5-point Likert scale, whose values were inverted in this study by means of obtaining a scale of religious non-belief (1 = Strongly agree; 5 = Strongly disagree), in which high scores indicate a stronger non-belief. The reliability of the whole scale was 0.84. The exploratory factorial analysis with varimax rotation outlined a 2-factor structure which explained 80.12% of the variance. The first of the factors consisted of 4 items relating to religious beliefs (e.g., heaven, hell, miracles, angels and devils), explaining 57.55% of the variance ( $\alpha = 0.91$ ). The second factor consisted of 2 items relating to spiritual beliefs (e.g., life after death, the presence of an immaterial spirit in people), explaining 22.58% of the variance ( $\alpha = 0.75$ ). The recommended goodness-of-fit indices for the validation of models [48] in cases such as this, with a low number of degrees of freedom in which the RMSEA index is artificially elevated, were satisfactory (NNFI = 0.95, SRMR = 0.03). These results justified differentiating between two separate dimensions of religious non-belief and spiritual non-belief.

*Theistic belief.* Pennycook, Cheyne, Seli, Koehler and Fugelsang [66] proposed this qualitative measure of theistic belief based on the response to the question “What sort of God, if any, do you believe in?”, for which they proposed 6 possible responses: (1) Personal God, (2) God as an impersonal force, (3) a God who created everything, but does not intervene in human affairs, (4) do not know whether or not any of these Gods exist, (5) do not know whether or not any of these Gods exist, and no one else does either, and (6) I do not believe in Gods of any sort. The participant was able to choose one or more response from the 6 possible options. This qualitative measurement was used to gain a better understanding of the image of God that was held by the participants (as in [61]).

### 2.3. Data Analysis

For the statistical data analysis, the statistics program IBM SPSS 26.0.0.0 was used. Descriptive statistics were used to characterise the sample and the study variables, and Pearson’s correlation coefficient was used to study the correlations between variables.

## 3. Results

The descriptive statistics that figure in Table 1 indicate the sensitivity of the study participants towards sustainability in the form of help behaviors that show a disregard for other people and institutions, austerity behaviors typical of a non-luxurious life (frugal behaviors), a determination to avoid unnecessary expenditure and a tendency to seek equal treatment. To a lesser extent, it also indicates the performance of environmentally-friendly behaviors of an ecological and

pro-environmental nature. While, overall, the evocation of sustainable behaviors was shown to be above the mean value, if we consider the range of possible scores, the positioning of this score in the third quartile indicates the difference between this point and a fully sustainable lifestyle.

**Table 1.** Descriptive statistics of measures of Sustainability, Religiosity/Spirituality, and Unbelief.

Variables	<i>n</i>	<i>M</i> <sup>5</sup>	<i>sd</i>	Range Observed <sup>6</sup>
<b>Sustainability</b>				
Altruism	561	19.93 (2.21 [0–3])	4.74	4–27 (0–27)
Frugal behavior	561	20.25 (3.37 [0–4])	3.75	3–24 (0–24)
Responsible consumption	561	6.94 (3.47 [0–4])	2.87	0–12 (0–12)
Frugality <sup>1</sup>	561	27.19	4.53	11–36 (0–36)
Equity	561	35.53 (3.37 [0–4])	4.75	12–40 (0–40)
Proecological behavior	561	8.93 (1.79 [0–3])	3.51	0–15 (0–15)
Sustainable behavior <sup>2</sup>	561	109.94	14.61	57–141 (10–167)
<b>Image of God</b>				
Mystical	325	39.76 (3.97 [1–7])	17.08	10–70 (10–70)
Authoritarian	325	12.10 (3.02 [1–7])	5.73	4–28 (4–28)
Ineffable	325	11.73 (3.91 [1–7])	4.58	3–21 (3–21)
<b>Religious Orientation</b>				
Intrinsic	139	18.98 (2.37 [1–9])	13.81	8–72 (8–72)
Extrinsic	139	36.41 (3.31 [1–9])	17.34	11–86 (11–99)
Quest	139	46.40 (3.87 [1–9])	22.24	12–105 (12–108)
<b>Expressions of Religion/Spirituality<sup>4</sup></b>				
Cogn. Orient.	558	10.11 (1.68 [0–4])	6.17	0–24 (0–24)
Exper/Phenom	558	5.98 (0.99 [0–4])	5.60	0–24 (0–24)
Paran. Beliefs	558	9.27 (1.54 [0–4])	5.16	0–24 (0–24)
Religiosity	558	6.48 (1.08 [0–4])	6.10	0–24 (0–24)
Atheism	325	13.23 (4.41 [0–7])	5.26	3–21 (3–21)
Unbelief				
Spiritual	561	5.98 (2.99 [1–5])	2.13	2–10 (2–10)
Religious	561	13.07 (3.42 [1–5])	4.69	4–20 (4–20)
Unbelief <sup>3</sup>	561	19.05	5.72	6–30 (6–30)

<sup>1</sup> This variable is the total score of the Frugality and Responsible Consumption variables. <sup>2</sup> This variable is the total score of the Altruism, Frugality, Responsible Consumption, Equity and Environmentally-friendly Behavior variables.

<sup>3</sup> This variable is the total score of the Spiritual and Religious non-belief variables. <sup>4</sup> Cogn. Orient. = Cognitive Orientation Toward Spirituality, Exper/Phenom = Experiential/Phenomenological, Paran. Beliefs = Paranormal Beliefs. <sup>5</sup> Potential range of response by item given between brackets. <sup>6</sup> Potential range given between brackets.

With regards to the measures of religion, an image of a Mystical God prevails, scoring slightly more than an image of an Ineffable God, with an image of an Authoritarian God in third place. Another measure of religious character, of a motivational nature rather than the cognitive nature of the image of God, is religious orientation. This has tended to show values below the possible mean value, showing a low intrinsic orientation with a slightly higher extrinsic and quest orientation, whose low mean score also indicated a poor internalisation of religious elements such as beliefs and precepts, as well as a low contribution of religion as a source of comfort, security, social support, and so on. Neither is a form of religiousness that questions, casts doubts over and queries faith itself and beliefs particularly relevant. Consistent with these results, it was found that an interest in religious behaviors and attitudes such as praying, attending rituals or the importance of religion are not particularly relevant either.

Neither was spirituality particularly important for the study participants (low cognitive orientation towards spirituality), not even in contemporary forms of expression such as those of a paranormal nature. Existential wellbeing registered slightly higher values, above the mean value of the possible range of scores.

In contrast to these religious/spiritual measures, and consistent with the above results, an atheistic view of divinity is prevalent amongst the subjects in the sample, outlining a lack of belief in God.



Their values of spiritual and religious non-belief were also above the mean value of the range of possible scores.

The study of the linear relationships between these dimensions of sustainable behavior and measures of belief (i.e., religiousness/spirituality) and non-religiousness (atheism and non-belief) appears in Table 2. The correlation coefficients of the different images of God and the measures of sustainability indicate, with a score of almost zero, the independence of this type of measure, with the exception of the vision of an Ineffable God, which has been shown to be associated with responsible consumption and low equitable behavior. Without reaching statistically significant values, responsible consumption was also shown to be related to an image of an Authoritarian God. In addition, motivational measures of religious orientation are independent in their intrinsic and extrinsic forms. The quest religious orientation does not reach significant values either, although its correlation with measures of sustainability was equal to or greater than 0.10 in relation to altruistic, frugal and equitable behavior.

**Table 2.** Pearson's product-moment correlation statistics between measures of Sustainability and Religiosity/Spirituality, and Unbelief.

Variables	ALT	FBE	RCO	FRU	EQU	PRO	SUS
<b>Image of God</b>							
Mystical	0.05	0.01	0.09	0.07	−0.03	−0.04	0.03
Authoritarian	−0.03	−0.03	0.10	0.04	−0.01	0.04	0.01
Ineffable	−0.02	0.01	0.11 *	0.08	−0.15 **	0.01	−0.04
<b>Religious Orientation</b>							
Intrinsic	0.03	−0.02	0.02	−0.00	−0.06	−0.03	−0.02
Extrinsic	0.10	0.03	0.07	0.10	0.01	−0.05	0.07
Quest	0.11	0.10	−0.01	0.11	0.12	0.00	0.15
<b>Expressions of Religion/Spirituality</b>							
Cogn. Orient.	0.10 *	0.07	0.02	0.07	−0.06	−0.05	0.03
Exper/Phenom	0.08 *	−0.01	0.11 **	0.07	−0.15 **	−0.07	−0.02
Paran. Beliefs	−0.04	−0.05	0.04	−0.02	−0.04	−0.04	−0.06
Religiosity	0.13	0.01	0.10	0.07	−0.03	−0.12	0.04
Atheism	0.18 **	0.17 **	0.12 **	0.22 **	−0.00	−0.10*	0.14 **
Unbelief							
Spiritual	0.07	0.06	0.02	0.06	0.03	−0.05	0.06
Religious	−0.25 **	−0.23 **	−0.16 **	−0.30 **	−0.01	0.15 **	−0.20 **
Unbelief <sup>3</sup>	−0.18 **	−0.17 **	−0.12 **	−0.22 **	0.00	0.10 *	−0.14 **

NOTE: ALT = Altruism, FBE = Frugal behavior, RCO = Responsible consumption, FRU = Frugality (this variable results from the sum of FBE and RCO), EQU = Equity, PRO = Proecological behavior, SUS = Sustainable behavior (this variable results from the sum of ALT, FRU, EQU, and PRO. \*  $p < 0.05$  \*\*  $p < 0.01$ .

Sustainable behavior was more relevant in relation to measures of spirituality, with the exception of altruistic behavior, which was shown to be positively related to the importance of religiousness and spirituality. This was also the case with the experiential/phenomenological dimension.

Responsible consumption was found to be independent of these religious/spiritual expressions, with the exception of the experiential/phenomenological dimension, with which it had a positive relationship. The equal treatment of others, a reflection of the equitable dimension, was shown to have a positive influence on wellbeing, although this was found to have a tendency to decrease as the number of religious experiences increased, both in the context of traditional religions and that of contemporary spiritualities and transcendental experiences. Environmentally-friendly behavior was also shown to be independent of measures of religion and spirituality, except in relation to religiousness where, without reaching statistically significant values, the Pearson's correlation coefficient reached a value of 0.12. All measures of sustainable behavior were found to be independent from paranormal beliefs.

In relation to the relationship between measures of non-religiousness, a denial of the existence of God was positively related to sustainability, particularly altruistic sustainable behavior, frugal behavior and responsible consumption; it was also related—albeit inversely—to environmentally-friendly behavior, with this being greater with a lower denial of the existence of God. In line with these results, while spiritual non-belief was shown to be independent of sustainability measures, a high religious non-belief was associated with low altruism, frugal behavior, responsible consumption, environmentally-friendly behavior and sustainable behavior in general. The exception to this negative contribution of measures of non-belief was related to environmentally-friendly behavior, which tended to have a positive correlation with the degree of non-belief.

#### 4. Discussion

The aim of this research was to undertake an exploratory study of sustainability associated with different expressions of religion and spirituality. While descriptive analyses indicated that religious and spiritual people exhibit altruistic, frugal and equitable sustainable behaviors, they also indicated that their contribution to sustainability could be higher in the areas of environmentally-friendly behaviors. If we look at these results in the context of a sample in which the motivation to be religious (i.e., intrinsic, extrinsic or quest religious orientation), as well as the importance of religion and the practice thereof (praying and other rituals) registered low scores, it seems appropriate to suggest a greater relevance of the measures of belief and non-belief as opposed to those of motivational or behavioral character when studying the influences of religion and spirituality on sustainability. The lack of significant linear relationships and the various near-zero correlations indicating independence between measures of sustainable behavior and measures of religious orientation, cognitive orientation towards spirituality, paranormal beliefs and a measure of religiousness in which religious attitude and belief stood out, also support this assertion.

The low levels of religiousness and spirituality match the characterisation of young Spaniards in sociological studies, with a notable loss of interest in religion and significantly more people who were religiously indifferent, agnostic and atheist [48] than previous generations. Likewise, the concept of spirituality may not be entirely devoid of religious connotations, given the role that it plays in modern societies as a consequence of the process of secularisation, which is also said to have led to a change in the perception of religion's importance rather than the disappearance thereof [67]. In cases such as this, of which Spain is an example, rather than disappearing, religion assumes private [68], horizontal [69], and lived [70] forms that contrast with the more public nature of its traditional expressions [66]. From an academic perspective, neither does the scientific community consider spirituality to be a broader concept than religiousness. However, given the connections that exist between both constructs, they should not be treated as independent of one another [71].

The relevance of altruistic, frugal and equitable sustainable behavior in religious people is consistent with previous studies that have highlighted the pro-social tendency of traditional religiousness (e.g., [27]). Additionally, the positive relationship observed in this study between altruistic sustainable behavior and the importance the person places in spirituality, beliefs, attitudes and perceptions related to it, is consistent with previous studies that extend the pro-social character of religion to spirituality [72,73].

This relevance of the religious beliefs dimension is also observed in the area of non-religiousness. As in Oman and Morello-Rosch [20], in our study it was observed that disagreement with common religious beliefs was associated with a less altruistic and frugal sustainability, less responsible consumption and an overall measure of sustainable behavior. Environmentally-friendly sustainable behavior was, however, the exception to this trend, which is not related to studies that attribute environmental concern of contemporary forms of religiousness to the influence of Eastern religions—particularly Buddhism and Hinduism—on new religious movements that treat nature as sacred [74] and to ecological-cultural models [75]. Spiritual non-belief was, however, independent of all measures of sustainable behavior. This fact, more than highlighting spirituality's lack of influence

over sustainable behavior, which would contradict previous studies that have associated measures of spirituality with altruistic and biocentric environmentally-friendly attitudes [18], might suggest, similar to religiousness [52], differences in the ways in which spirituality is measured. Denial of the existence of God, expressed in the form of atheism, was more common in people who exhibited less environmentally-friendly sustainable behavior. Higher levels of atheism was associated with greater altruistic sustainable behavior, greater responsible consumption and greater austerity or frugality. While the first two relationships are consistent with previous studies in which this greater pro-sustainability was observed (e.g., [20,41,76]) in non-religious people, the correlations observed between frugality and atheism (positive) and frugality and non-belief (negative) may seem contradictory. Austerity refers to limited consumption and waste of resources [5,77]; namely, a non-luxurious lifestyle that seeks to avoid unnecessary expenses. This behavior has been linked to religiousness [78], which could justify the negative correlation observed between non-belief (i.e., lack of religious beliefs) and frugality. However, why is there a negative correlation with atheism? While the above measure is based on the lack of religious beliefs, the atheism measure used is related to an image of God that indicates its imaginary, unreal and non-existent character. Using Compton's [79] definition of cognitive image, this image will be shaped by the person's impressions, perceptions, knowledge and beliefs about God, whose elements would show both affective and cognitive aspects [80]. If the image of God evokes feelings of aversion and discomfort, it seems reasonable to expect that if the doctrine, theology or religious worldview (in this case, Judeo-Christian) promotes austerity, said behavior will also be rejected by atheists.

The images of a Mystical God and an Authoritarian God were independent of sustainable behavior. This result does not necessarily mean a low sustainability among people with a traditional, strict and dominant image of God because pro-sustainable behavior may be based on other religious and non-religious sources. In fact, the conservatism that is attributed to authoritarianism [81], and that is different from dogmatism, has been related with the preservation of those aspects "which were created to protect the common good" (quote of R. Scruton cited in [81], p. 6). These associations may suggest the influence of additional variables to explain the relationship between an authoritarian image of god and sustainability. As in the case of pro-environmental concern (e.g., [38]), the relationships between dimensions of religion and sustainability are complex and they vary depending on the studied variable. Therefore, this finding cannot be interpreted as a positive and necessary influence of theism on sustainability.

The image of an Ineffable God was related to more responsible consumption and less equality. People who share this image consider God to be unknown, incomprehensible and very difficult or impossible to define in words. The fact that an image of an Ineffable God is contradictory to that of a Personal God, and that it implies not having a sharp image of divinity [61], would mean that a person who has this image [ineffable] of God would exhibit behaviors that contradict those attributed to religious people (e.g., a lesser tendency to treat people equally and to make unequal use of resources). Meanwhile, the positive correlation between this image of an Ineffable God and responsible consumption is consistent with the suggestion of Whithe [82] that "Christians should be less sustainable than non-Christians due to religious prescriptions to have dominance over nature" (cited in [76], p. 368). Neither can the idea that other motivations of a spiritual rather than non-religious nature (e.g., ecological and pro-environmental values) apply to a person, who has an image of an Ineffable God, be discarded.

With regards to the experiential/phenomenological dimension, this had a positive correlation with responsible consumption; the opposite trend was noted, meanwhile, with equity. In this case, the different and unequal treatment of others had a positive correlation with the measure of religious/spiritual experience. This measure of spirituality encompasses aspects of religion and spirituality. As a result, it is not possible to ascertain the possible existence of differences based on the religious or spiritual character of the religious experience, although by definition, and the content of items included (i.e., "being connected to everything", "transcending space and time", "union with a force or power that is greater than oneself", "all things seem divine"), this is not strictly a measure of

traditional religious experience. It is perhaps because of this, and owing to the proximity of paranormal factors, that the result is consistent with those of previous studies, in which this measure was shown to be related to concern about the consequences of environmental pollution for other humans and for the planet [18].

While this study represents an original contribution that broadens the available knowledge about the relationship between expressions of religion and spirituality and sustainable behavior, the characteristics of the sample from which the data have been collected means that they cannot be generally extrapolated to other cohorts. The results of this study are consistent with the pro-environmental nature associated with the non-traditional forms of spirituality [67] and generations such as the one which participated in this study [48]. However, future research projects should check these results against those obtained with samples from adult and elderly people, which may be expected to differ from this sample with a greater demonstration of traditional religiousness.

Furthermore, given the importance that measures of belief and non-religiousness were shown to have in this study, and the fact that previous research projects found a correlation between different ways of interpreting religious texts (i.e., symbolic vs. literal) and environmentally-friendly attitudes (e.g., [18]), future studies should also consider the analysis of sustainable behavior with regards to these religious schools of thought. When viewed together, these results suggest the need to consider aspects related to religious/spiritual meaning and content, in addition to explicit expressions of religiousness and spirituality.

The aforementioned also highlights the importance of carrying out qualitative studies that complement the contributions made by quantitative studies, such as this one, in order to understand the way in which different forms of religiousness and spirituality, and religious and spiritual experiences, affect sustainable behavior. From this point of view, the fact of having used a simple (i.e., quantitative) vs. mixed (i.e., qualitative and quantitative) methodology could be considered a weakness of this study. Moreover, it cannot be ignored that the respondents' fatigue may also have had an impact on the results.

## 5. Conclusions

The results of this study reaffirm and give empirical support to previous theoretical studies that have pointed out the contribution of religion (e.g., [19–22,25,26,83]) and contemporary spirituality [84,85] to sustainability. On the other hand, they also show that acting in a sustainable manner is not just a matter of belief or unbelief, to be religious, spiritual, or atheist. It is necessary to develop an enhanced understanding about the mechanisms and processes that explain the relationships between dimensions of religion and sustainable behavior.

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