


Article

Faith and Sustainability: Exploring Religiosity's Impact on Intentions to Reduce Food Waste

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Abstract: This study investigates the influence of religiosity on environmental concern and intentions to reduce food waste in Islam and Christianity. The study involves 575 adult participants, predominantly Muslims and Christians, utilizing the Duke University Religion Index (DUREL) religiosity scale, environmental concern scale, and food waste reduction intention scale. The investigation was conducted in Romania, Italy, and Turkey. Utilizing structural equation modeling (SEM) via AMOS software, the research reveals that religiosity significantly affects environmental concern in both religious groups. Furthermore, environmental concern acts as a mediator between religiosity and both Muslim and Christian participants. Notably, the impact of religiosity on the intention to reduce food waste is significant among Muslims, but is not observed among Christians. The study underscores the importance of integrating religiosity into consumer behavior research, especially concerning food waste reduction. It suggests that religiosity and environmental concern are crucial for successful campaigns targeting food waste reduction among Muslim and Christian consumers.

Keywords: religiosity; environmental concern; structural equation modeling (SEM); sustainable planning



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1. Introduction

Meeting the food needs of the rapidly growing world population is a significant challenge. However, despite efforts, approximately two billion people still suffer from food insecurity, with nearly 800 million experiencing hunger. The COVID-19 pandemic has further exacerbated this problem, hindering the achievement of the Sustainable Development Goals (SDGs) [1]. Additionally, food waste has been recognized as a global issue, with the European Union (EU) generating more than 88 million tons (Mt) of food waste annually. This accounts for approximately 20 per cent of the food produced in member countries and results in high financial costs [2]. Minimizing food waste among consumers is crucial in addressing this problem. Unfortunately, despite the importance of food in human life and efforts to prevent food waste, it remains a persistent issue.

In previous studies, researchers have addressed the effects of food waste under some headings. For instance, some authors [3,4] pointed out the environmental effects of food waste. These environmental effects of food waste are discussed in three aspects: in the context of environmental pollution, food losses [4], and economic losses [5,6]. Food waste causes billions of dollars in losses every year [7].

In recent years, researchers have focused on the topic in order to contribute to the solution of the problems caused by food waste, and there has been a recent increase in studies shedding light on this issue [8,9]. One factor affecting food waste that researchers have deliberated on is religiosity, as the divine religions have strictly forbidden waste. In current studies, academics have often focused on exploring food waste behavior in a country [10], primarily focusing on a religion [11]. Some of these studies have investigated the effect of Christian consumers' religiosity level on food waste reduction intention [12],

dividing young Christian consumers in Croatia into four groups based on their food waste behavior, and found that the food waste neglecting group was the most prominent group. The researchers in [13,14] examined the effect of religious values on food waste among Polish Christian youth and found that those with higher religious values had a greater tendency to reduce food waste compared to those with lower values. The authors in [15] identified religiosity as one of the determinants of food waste reduction behavior in their study, which mainly focused on American Christians. Additionally, the researchers in [16,17] conducted investigations to examine the factors influencing food waste among Italian Christian consumers.

On the other hand, some authors have focused on explaining the food waste behavior of Muslim consumers in several countries [18–22].

Most of the studies on food waste have been conducted within a single country and focused on a specific religious group. In the limited number of studies that have explored different countries and examined various religious groups, Ref. [23] investigated a sample of Lebanese Muslims and Christians, while Ref. [24] studied Buddhists, Taoists, and Christians from Taiwan and the USA. However, there is a lack of cross-country and cross-religion studies on the effect of religiosity on food waste. Thus, the existing research on this topic is insufficient in addressing the broader literature, highlighting the need for studies that encompass different cultural contexts [25,26].

In this context, this study was conducted with the motivation to contribute by examining the impact of religiosity on food waste behaviors among consumers belonging to the two most widespread religions in the world: Christians and Muslims. The study aimed to address several questions:

RQ1: Is religiosity level one of the determinants of food waste reduction behavior?

RQ2: Is environmental concern one of the factors affecting consumers' food waste reduction behavior?

RQ3: Does consumers' food waste reduction intention differ across religions?

In this regard, the paper is structured as follows. The next section establishes the conceptual framework of the study and presents the theoretical model based on the study's hypotheses. Subsequently, the methodology of the study, including the sample, measurement tools, and analysis method, is explained. The findings of the study are then presented in detail. Finally, a comparison is made between the finding of this study and previous research, and the study concludes with recommendations for researchers and practitioners.

2. Theoretical Background: Waste Food and Religiosity

The relationship between food and waste has garnered significant attention in political narratives and media discussions, and among various actors involved in producing and mobilizing discourses on food. This includes civil society and food movements, as well as the scientific community, particularly within the field of food studies that encompasses social sciences such as geography [27]. Waste is a concept that encompasses ecological, social, economic, and cultural dimensions, and it permeates all value processes within service ecosystems.

According to [28], food waste involves the loss of edible food during the production, postharvest, and processing phases of the food supply chain (FSC), whereas food waste specifically occurs at the retail and consumption stages within the FSC. Many people are unaware of the volume of food they throw away and its environmental repercussions, even though the economic impact of food waste has been well researched [29]. Concern about food waste has been identified as a significant predictor of food waste reduction [30] and plays a crucial role in the intention to reduce food waste [31].

The food waste literature has revealed established factors that affect consumer food waste reduction; these include positive attitudes [32,33] favorable subjective norms [32], perceived behavioral control (PBC) [34,35], and personal norms [36].

Ref. [37] found a significant positive link between religious beliefs and environmental awareness, which, in turn, influences food waste behaviors. In general, religious groups discourage consumer food waste and invoke social norms for sharing food waste with others.

Additionally, education, improving awareness, enculturation and mass media play crucial roles in reducing food waste [38]. Religious consumers have been shown to be more altruistic and caring [39]. There are studies that support the moderating effects of religiosity on the relationship between established antecedents and several sustainable consumer behaviors (for example, buying organic products) [40].

Ref. [41] points out that initiatives to reduce food waste have primarily concentrated on environmental and economic strategies, with religious perspectives playing a minimal role. Beyond the external advantages, such as saving money, religiosity can shape attitudes towards reducing food waste by offering intrinsic rewards, like the satisfaction of adhering to divine commands [19]. Research [15] has shown positive correlations between religiosity and overall sustainable consumption. Other studies have explored the indirect influence of religious beliefs and values on food waste and environmentally friendly purchasing behaviors [37,42].

In [43], factors such as anxiety about the cost of food thrown away, feeling guilty, and making an effort to reduce food waste were linked to lower amounts of food waste. Some consumers also associate food waste with emotions of “disgust” [44], “hate” [45], “frustration”, “annoyance”, and “anxiety” [46].

Studies indicate a negative correlation between age and food waste, with younger individuals wasting more than older ones [30,47–49]. Other research shows that household size and composition (adults waste more in absolute terms, and larger households waste less per person than smaller ones), household income (lower income correlates with less food waste), and household demographics significantly influence food waste behavior [47].

3. Hypothesis Development

Although the concept of religion is occasionally intertwined with the concept of religiosity, these two concepts actually differ from each other. The former refers to the overall framework of a person’s life guided by religious principles and role expectations, while the latter pertains to a specific belief or faith system, such as Christianity and Islam [50]. Considering that an estimated half of the world’s population reportedly considers religion an important element in their lives, it is safe to say that religion holds significant influence in shaping social norms, guiding individual behaviors, and forming the foundations of social structures and rules. In this context, this study approaches religiosity from an intrinsic perspective and defines it as an individual’s belief in God and their commitment to living and following religious teachings [51]. It is important to note that religion and/or the level of religiosity of individuals can also influence and shape their consumption behaviors. In their theory, the authors in [52] argue that “religions, when internalized through repeated social interaction, establish role expectations that contribute to a person’s self-identity within to a particular religious context”. To clarify further, the theory posits that religion plays a role in shaping individuals’ environmental behavior [53]. For example, religiosity affects consumers’ consumption behavior [54], purchase decisions [55], environmental concern [56], food waste reduction behavior [37], and nutrition policies and practices [57]. The authors [58] found that even if they belong to the same religion, the religiosity levels of consumers from different cultures have different effects on their environmental concerns. The authors [59] presented similar findings for Muslim consumers in Saudi Arabia. The authors [60], in a study conducted in the USA and mostly composed of Christian consumers, found that the level of religiosity did not have a significant effect on environmental concern.

Alternatively, Ref. [37], which included 1000 Egyptian Muslims, revealed the effect of religiosity on environmental anxiety and stated that religious beliefs are a powerful motivator that increases environmental awareness. Similarly, Ref. [61] found that as the level of religiosity increased, their environmental sensitivity also increased, in their study involving nearly 50 thousand participants from 34 countries. Moreover, the authors’

findings showed that the highest relation was for those who belonged to Buddhism. The findings of the study conducted in [56] with close to 45,000 participants from 43 countries revealed that religiosity has a strong and positive effect on environmental concern.

In summary, based on the religious theory and findings of previous studies coupled with adherents' commitment to religious values, we hypothesize that religiosity level affects environmental concern.

H1a. *Muslim consumers' religiosity level affects their environmental concern.*

H1b. *Christian consumers' religiosity level affects their environmental concern.*

The findings of previous studies on the effect of religiosity on food waste are mixed and contradictory. For example, Ref. [62] found no evidence that religiosity affects environmental anxiety in the United States in their study of approximately 2400 Christian participants, and Ref. [59] reached similar findings with 354 Islamic members in Saudi Arabia.

The food waste literature endeavors to determine the factors that affect the behavior of individuals on this issue. As it is supported by some empirical evidence, in the context of role theory [52], the level of religiosity is one of the most important of these factors influencing food waste reduction behavior [15,23,42,63]. Consequently, we hypothesize that religiosity affects consumers' food waste reduction behavior.

H2a. *Muslim consumers' religiosity level affects their food waste reduction behavior.*

H2b. *Christian consumers' religiosity level affects their food waste reduction behavior.*

While some studies [64] have suggested that environmental concern does not influence food waste reduction behavior, numerous other studies have provided strong evidence supporting its significant impact [65,66]. Based on these previous findings, we argue the following hypotheses:

H3a. *Muslim consumers' environmental concern affects their food waste reduction behavior.*

H3b. *Christian consumers' environmental concern affects their food waste reduction behavior.*

While some previous studies on food waste behavior have revealed that religiosity has an indirect effect on food waste reduction, other studies in different countries have proven the mediating role of environmental concern [19,37,42]. On the other hand, environmental concern plays a mediator role in food waste reduction [15]. Thus, further hypotheses of the current study are as follows:

H4a. *Environmental concern has a mediating effect between religiosity and food waste reduction behavior for Muslim consumers.*

H4b. *Environmental concern has a mediating effect between religiosity and food waste reduction behavior for Christian consumers.*

Culture is defined as the composite of a whole that involves knowledge, belief, art, morals, customs, and any other capabilities and habits acquired by humans as a part of society [66]. Culture differs significantly from other macro environmental factors and the behavior of the individual is shaped within the framework of the culture of the society in which they live. One of the most important cultural elements that determine the behavior of individuals is religion [67].

Although some authors [68] have tried to reveal the similarity of individuals belonging to different religions, empirical studies have shown that the behaviors of individuals belonging to different religions vary. The authors [69] by comparing Muslims and Christians from Arab culture and Christians from Western European culture, Ref. [70] found that the behavior of Christians did not vary even if they were from different cultures, but the behavior of Muslims differed significantly from the other two groups. In line with this evidence, we present the following hypotheses:

H5. *Religion moderates the effect of religiosity on environmental concern.*

H6. Religion moderates the effect of religiosity on food waste reduction intention.

H7. Religion moderates the effect of environmental concern on food waste reduction intention.

Based on the hypotheses, the study model was proposed and is presented in Figure 1.

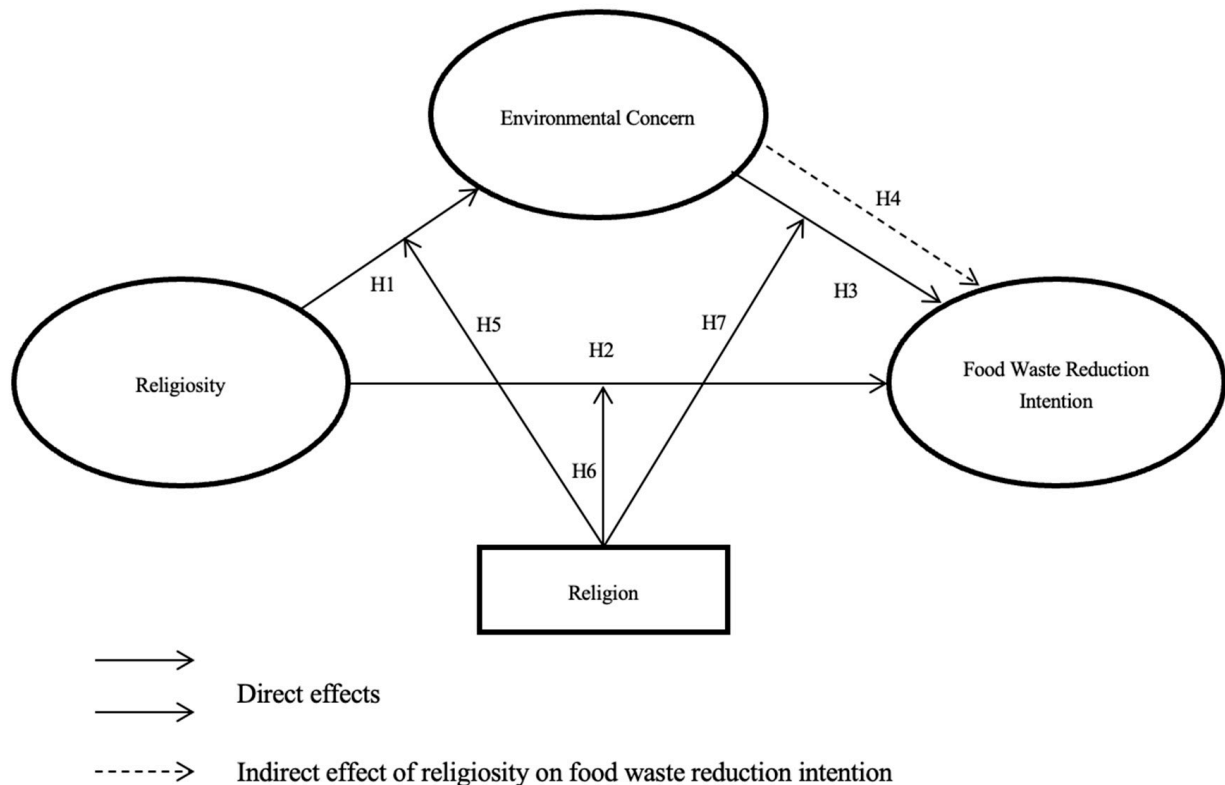


Figure 1. Measurement model of the study.

4. Research Methodology

4.1. Measurement Tools

This study was focused on revealing whether religiosity has an effect on food waste. While attempting to demonstrate this, the study also investigated the mediating effect of environmental concern. In this direction, the structural model created within the context of the described conceptual framework was tested.

In the study, the DUREL scale, developed by [71], was used to measure the level of religiosity among the participants. Although the scale was originally developed in Christian societies, it was also tested in Muslim societies [72,73]. The scale was based on the [74] 9-item version, which is the closest to the original scale (sample item: “Religion is the most important thing in life”).

Environmental concern: The environmental concerns of the participants were measured using the environmental concern scale developed by [75], which is widely used in studies on the topic. It consists of 5 items. As the method used in the study was an influential factor in determining the sample size, scales with fewer statements made authors’ work easier (sample item: “Mankind is severely abusing the environment”).

Food waste reduction intention: data on participants’ intentions to reduce food waste were gathered through [49] a food waste intention scale. In addition to being frequently used in studies on food waste, the scale was also tested in the context of religion as part of this study [74]. Furthermore, the scale was preferred due to its smaller number of items, similar to the environmental consciousness scale. The scale consists of 4 items, with a sample item being “I plan to waste no food at all”. You see the scale in Appendix A.

4.2. Sampling

The population of the present study consists of Christians and Muslims, who represent the largest religious groups in the world. Since the data collection process coincided with the COVID-19 pandemic, the study's data were collected through an online questionnaire. Data were gathered from February to May 2021. Due to the circumstances of the COVID-19 pandemic, the convenience sampling method was employed to collect data from Turkish participants who identify as Muslims, while Italian and Romanian participants were included to represent Christians. Therefore, the territories in which the investigation was conducted were Romania, Italy, and Turkey, albeit with the limitations of the sample. The nationality of the participants did not affect the survey results since the focus was on religion. The scales used in the survey were explained in detail above and presented to the participants in a 5-item format.

One of the most important factors in determining the sample size of the study is the method used, because the analyses used in SEM are very sensitive to sample size [76]. The author [77] emphasized the importance of determining the minimum sample size required to reach a desired statistical power level with a particular model before collecting data. However, there is no consensus in the literature regarding the sample size for studies in which SEM is used [78,79]. In this context, Ref. [76] stated that although the analyses made with 50 subjects in SEM reached valid results, such a low sample is not recommended. Therefore, the authors stated that the sample should include at least 5 participants for each statement. On the other hand, Ref. [80] stated that this number should be at least 10 in order to reveal stronger findings in the analyses to be performed with SEM.

Apart from the item-based approach, the sample size for SEM analysis has been discussed in the literature over the total sample number as well [81]. In this context, the authors [82] pointed out that the number of samples in SEM should not be less than 100. On the other hand, the authors in [83] emphasized that the optimal sample size for SEM is between 300 and 400. The most accepted sample size in the literature is a sample size over 200. Many authors [84–86] pointed out that the critical threshold for SEM is 200 and that the sample size should not fall below this number. Another problem encountered at this point is what the upper limit of the sample size will be. Since SEM is sensitive to sample size, having a sample size exceeding 400 can negatively impact the fit indices [76]. Therefore, Ref. [76] suggested that the optimal sample size for studies utilizing SEM should fall between 200 and 400 participants.

Following this discussion, data were gathered from participants through an online survey, aiming for at least 10 participants per item and a combined total of 200 participants for both groups. The analysis was performed using SPSS 22 and AMOS 16 software. SPSS was utilized for descriptives statistics, exploratory factor analysis, and the analysis of moderator effects. On the other hand, AMOS was utilized for confirmatory factor analysis, correlation analysis, structural equation modeling, and to assess the goodness-of-fit of the proposed model.

5. Results

The demographics of the participants are detailed in Table 1. As shown in the table, there are 354 Muslim participants and 221 are Christian participants. In both groups, the majority of the participants are female and married. More than half of the total participants have 2–3 people in their households. Additionally, approximately 60% of the participants are between 18 and 30 years old.

The Cronbach's α coefficients of the scales for each religious group are as follows: for the Muslim group, the religiosity scale has a coefficient of 0.927, the environmental scale has a coefficient of 0.803, and the food waste reduction intention scale has a coefficient of 0.704. For the Christian group, the religiosity scale has a coefficient of 0.969, the environmental scale has a coefficient of 0.888, and the food waste reduction intention scale has a coefficient of 0.781. These findings indicate that the scales demonstrate sufficient reliability levels for further analysis [87].

Table 1. Demographics of participants.

Category	Subcategory	Muslim		Christian		Total	
		f	%	f	%	f	%
Gender	Male	118	59.30	81	40.70	199	100
	Female	236	62.77	140	37.23	376	100
Marital Status	Single	133	56.84	101	41.16	234	100
	Married	221	64.81	120	35.19	341	100
Household	1	22	47.83	24	52.17	46	100
	2–3	197	60.43	129	39.57	326	100
	4 and more	135	66.50	68	33.5	203	100
Age	18–30	226	65.89	117	34.11	343	100
	31–40	67	67.00	33	33.00	100	100
	41–50	45	46.88	51	53.12	96	100
	51 and more	16	44.44	20	55.56	36	100

Principal Axis and Varimax rotation methods, which are commonly used in Exploratory Factor Analysis (EFA) [88], were employed. The EFA results, showing the rotated factor loadings of the scale items, are presented in Table 2. The factor analysis results demonstrate that the items in the scales are properly assigned to the intended factors for both groups. Most of the factor loadings are at a good level, while a few are at a reasonable level. Additionally, the eigenvalues of the three factors are above 1, indicating that these factors explain more than 60% of the total variance.

Table 2. Explanatory Factor Analysis for scales.

Rotated Factor Matrix for Muslims				Rotated Factor Matrix for Christians			
	1	Factor 2	3		1	Factor 2	3
RLG5	0.917			RLG8	0.828		
RLG6	0.914			RLG5	0.827		
RLG8	0.903			RLG4	0.822		
RLG4	0.902			RLG1	0.816		
RLG3	0.897			RLG6	0.790		
RLG7	0.885			RLG7	0.762		
RLG1	0.811			RLG9	0.739		
RLG9	0.773			RLG2	0.628		
RLG2	0.733			RLG3	0.590		
EC2		0.872		EC1		0.784	
EC3		0.816		EC2		0.726	
EC4		0.810		EC5		0.703	
EC5		0.781		EC4		0.557	
EC1		0.515		EC3		0.536	
FW4			0.788	FW4			0.641
FW3			0.662	FW1			0.587
FW2			0.636	FW3			0.540
FW1			0.561	FW2			0.496

After conducting the exploratory factor analysis (EFA), confirmatory factor analysis (CFA) and correlation analysis between variables were performed. The CFA results, which are used to determine the validity of the scales, indicated that the proposed model fits well. The fit indices of the CFA were calculated as follows: $\chi^2/df = 3.22$, $p < 0.001$, RMSEA = 0.062, SRMR = 0.057, GFI = 0.855, CFI = 0.917, IFI = 0.917. These indices suggest a good fit between the proposed model and the observed data. Table 3 displays the correlations among the variables for each religious group. The findings show that there is a statistically significant correlation among the variables in both groups.

Table 3. Correlations among the variables.

		Muslims		Christians	
		Food Waste	Environmental Concern	Food Waste	Environmental Concern
Environmental Concern	Pearson Correlation	0.535		0.599	
	<i>p</i>	<0.001		<0.001	
	N	354		221	
Religiosity	Pearson Correlation	0.445	0.219	0.372	0.433
	<i>p</i>	<0.001	<0.001	<0.001	<0.001
	N	354	354	221	221

Before conducting the main research analyses of the study, an independent-samples *t*-test was performed to examine whether there are differences between Muslims and Christians in terms of their levels of religiosity, environmental consciousness, and food waste reduction intention (Table 4). The findings indicate that the level of religiosity and environmental consciousness among Muslims is statistically significantly higher than that among Christians. However, there is no statistical difference between Muslims and Christians in terms of their food waste reduction intention.

Table 4. Independent-samples *t*-test on religiosity, environmental consciousness, and food waste reduction intention by religion.

	Religion	N	Mean	Std. Dev.	<i>t</i>	<i>p</i>
RLG	Muslim	354	3.8745	0.81801	8.186	<0.001
	Christian	221	3.2140	1.11046		
EC	Muslim	354	4.3757	0.61167	2.160	<0.05
	Christian	221	4.2570	0.68531		
FW	Muslim	354	4.0586	0.69924	−0.281	0.779
	Christian	221	4.0758	0.69924		

After conducting the CFA and correlation analyses, which yielded satisfactory results, structural equation modeling (SEM) was performed to examine the proposed model for each religious group. The effects among the variables for the Muslim and Christian groups are presented in Figures 2 and 3, respectively, based on the SEM results. Figure 2 demonstrates that all variables in the proposed model have a significant direct effect for the Muslim group. Therefore, the results provide support for hypotheses 1a, 2a, and 3a in the current study.

On the contrary, Figure 3 illustrates that religiosity has a significant direct effect on environmental concern, and environmental concern has a significant direct effect on food waste reduction intention for both religious groups. However, the findings indicate that religiosity does not have a significant effect on the food waste reduction intention for Christians. Therefore, these findings support hypotheses 1b and 3b of our study. However, the results do not support hypothesis 2b, which suggests a direct effect of religiosity on food waste reduction intention for Christians.

The mediating effect of environmental concern was tested based on [89] approach. In line with this, the results of the Sobel test indicated that religiosity has a significant mediating effect on food waste reduction intention ($\beta = 0.233$, $p < 0.01$). Furthermore, the findings demonstrate that religiosity has a significant indirect effect on food waste reduction intention ($\beta = 0.101$, $p < 0.01$) for both the Muslim and the Christian groups. This suggests that environmental concern has a significant moderating effect between religiosity and food waste reduction intention for both groups. In this context, the findings support hypotheses 4a and 4b of the current study (Table 5).

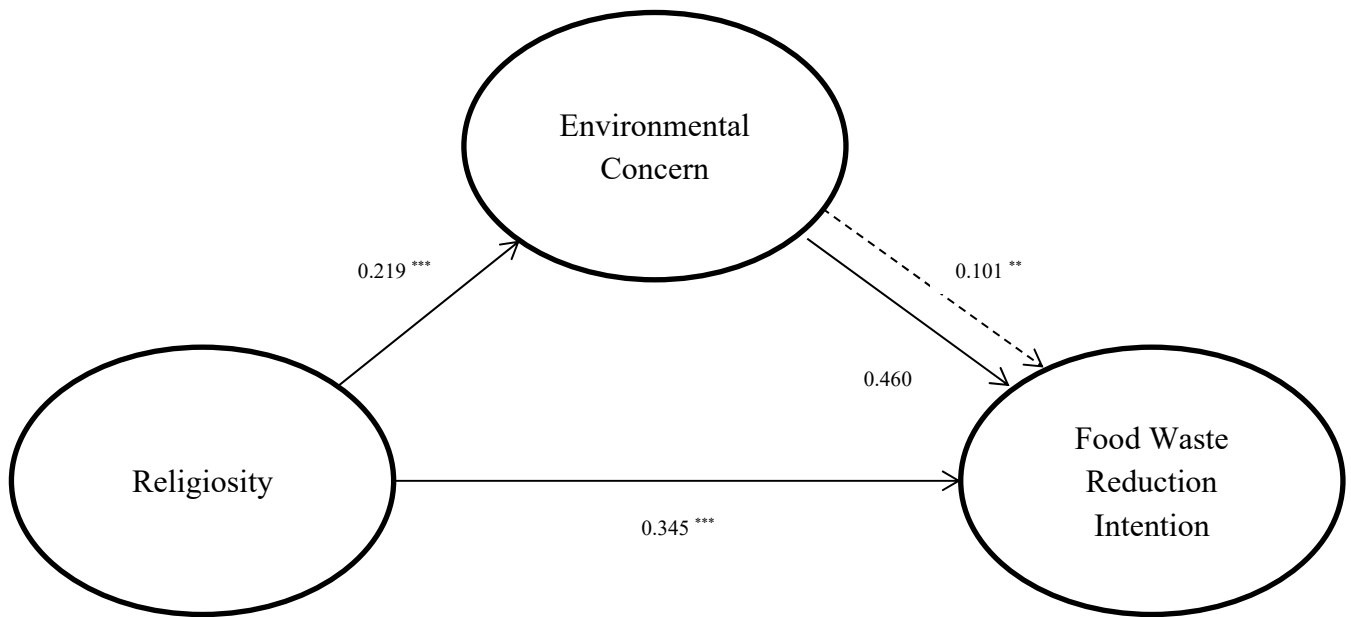


Figure 2. Effects among the variables in the model for Muslims. *** $p < 0.001$; ** $p < 0.01$.

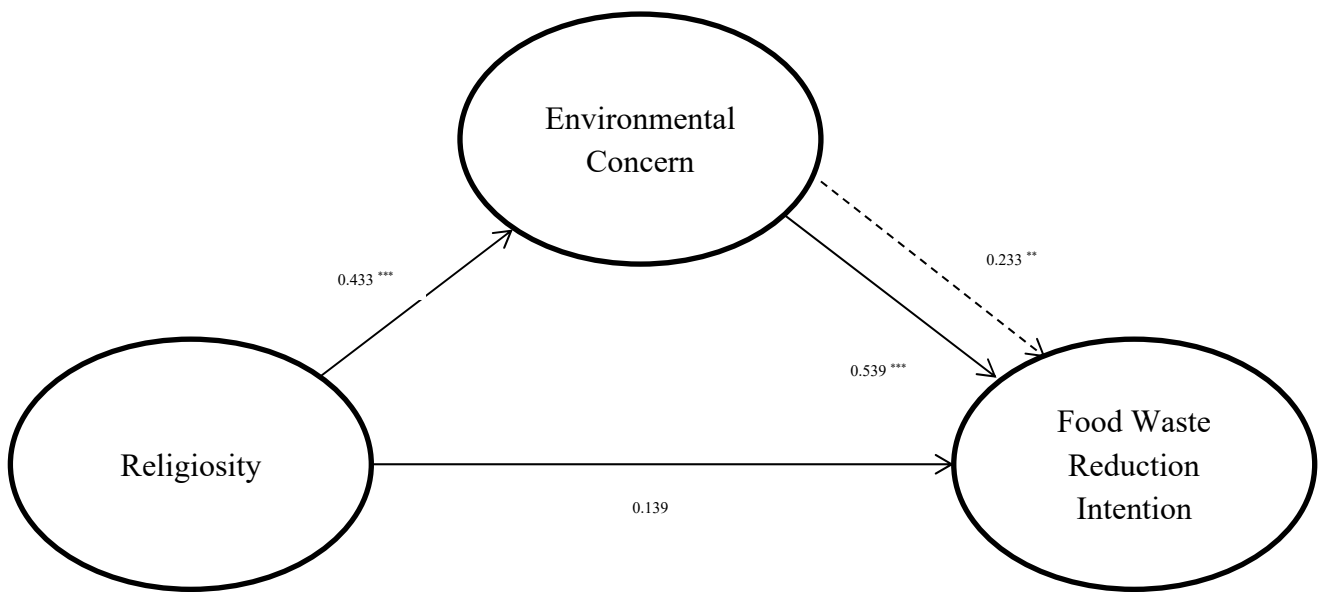


Figure 3. Direct effects among the variables in the model for Christians. *** $p < 0.001$; ** $p < 0.01$.

Table 5. Hypotheses results of the study by religions.

		For Muslims			For Christians		
		β	p	Result	β	p	Result
H1	RLG => EC	0.219	<0.001	Supported	0.433	<0.001	Supported
H2	RLG => FWR	0.345	<0.001	Supported	0.139	0.056	Unsupported
H3	EC => FWR	0.460	<0.001	Supported	0.539	<0.001	Supported
H4	RLG => EC => FWR	0.101	<0.01	Supported	0.233	<0.01	Supported

In addition, looking at the moderator effects, the results indicate that, except for H6, all other hypotheses were accepted, indicating that the relationship between the construct of FWRI (food waste reduction intention) is not influenced by religion (Table 6). The analysis did not provide any evidence to support the hypothesis that religion moderates the effect of religiosity on food waste reduction intention (H6). However, religion was found to have a moderating effect on the relationship between environmental consciousness, as well as the relationship between environmental consciousness and food waste reduction intention. Therefore, the study's H5 and H7 hypotheses were supported, while H6 was not supported. Finally, can be observed that the model demonstrates a good fit for measurement (Table 7).

Table 6. Results of moderator effects. * Moderator effect of Religion.

		β	p	Result
H5	Religion * Religiosity => EC	−0.178	<0.01	Supported
H6	Religion * Religiosity => FWR	−0.057	0.313	Unsupported
H7	Religion * EC => FWR	0.176	<0.001	Supported

Table 7. Fit indices of the proposed model.

Indices	Actual Score	Reference Score	Reference
CMIN	1363.464		
df	396		
CMIN/df	3.443	<5	[90]
p	<0.001		
NFI	0.903	<0.90	[88,91]
TLI	0.918	<0.90	[82,92]
CFI	0.929	<0.90	[90,93,94]
RMSEA	0.046	<0.05	[90,94,95]
SRMR	0.051	<0.09	[80,96]

6. Discussion and Implications

The findings of the present study, similar to those of many previous studies [55,61], confirm that an increase in the level of religiosity among consumers leads to a higher level of environmental sensitivity. The research approach in the current study is similar to that of [37], where the conceptual model incorporated respondents' perceptions of the relationship with food waste and consumer behavior in terms of waste food quantity. Additionally, we found that attitude, concern, knowledge, and value of religiosity are significant predictors in relation to pro-environmental consumer behavior, with religiosity playing a moderating role. Moreover, the results indicate that religiosity promotes food waste reduction and is positively related to consumer attitudes, activism, personal norms, and subjective norms. This holds true for both Muslims and Christians, who are the largest religious groups worldwide. The results demonstrate that Islamic religion significantly influences the characteristics of Muslim consumers regarding food waste, with some differences observed for Christians as well. The current study reveals that religiosity has an impact on the food waste reduction intention of Muslims, whereas no such effect was found for Christians. This finding is of theoretical significance when considering the cultural context. Although numerous prior studies [15,42,63] have emphasized religiosity as a significant factor influencing consumers' intentions to reduce food waste, the findings of the present study are consistent with these results [62]. Environmental concern is an important determinant of food waste reduction intention for both religious groups (this aligns with studies conducted in various geographical and cultural contexts, such as USA Norway and China). Furthermore, the study reveals that environmental concern mediates the effect of religiosity to food waste reduction intention. This finding is crucial, considering that religiosity does not have a direct effect on food waste reduction intention for Christians. Additionally, this study highlights the significant impact of religion, as an

important element of culture, on consumers' food waste behavior, as revealed by [68,70]. Furthermore, religion is an important predictor of moral intuitions and behavior related to food consumption, similar to the findings of [15,97], where restrictive religious norms, such as rules about food consumption and fasting, lead to greater food waste, while supportive religious norms, such as sharing food, lead to reduced food waste.

The findings of the present study offer practical implications for marketers and companies that aim to explore the marketing supply capacity in the Islamic world.

The findings also provide ideas for policymakers to identify practices and education that can help to reduce food waste by understanding the social value of religion. Managers and decision-makers should leverage the power of religiosity and environmental concern in their efforts to reduce food waste. Certainly, the endeavor to minimize food waste requires the alignment of agricultural, food, and health policies with environmental, scientific, and technological policies. While the current study did not reveal a direct effect of religiosity on the intention to reduce food waste among Christians, it is important not to overlook the encouraging and motivating indirect effect of religiosity on reducing food waste intention.

In addition, this study found that the weight of the factors affecting food waste reduction differs among religious groups. It could be predicted that focusing on religiosity in Muslim societies and on environmental concerns in Christian societies when carrying out food waste reduction activities will increase the probability of success.

Like any study, this research has its limitations. Firstly, it only focused on the religiosity of Christians and Muslims. Additionally, data were collected using conventional sampling methods during the COVID-19 pandemic, a unique period in world history, limiting the ability to generalize the results. Furthermore, due to the pandemic, as well as funding and time constraints, the sample size was restricted.

7. Conclusions

Food waste has become a prominent research subject, with growing attention being paid to the challenges of managing it in light of the Sustainable Development Goals (SDGs). The importance of policies and interventions to curb food waste has been notably highlighted. However, there is a shortage of empirical research investigating the influence of beliefs and interventions on consumer perceptions within the food consumption system.

At first glance, the impact of religions on food waste appears to be minor. Nevertheless, this study corroborates the existing literature, considering that religion is a significant construct with substantial implications regarding food waste. However, the effects of religiosity differ significantly among different religions, such as Muslims and Christians. The global perception of this problem has shifted significantly, and food waste has become a major public concern.

To conclude, the study found that religiosity influences environmental concern in both Muslims and Christians, and this concern predicts their intention to reduce food waste. Environmental concern also mediates the link between religiosity and the intention to reduce food waste. Additionally, religion moderates the relationships between religiosity and environmental concern, and between environmental concern and food waste reduction intention. However, while religiosity helps reduce food waste among Muslims, it does not have the same effect among Christians.

Future researchers should focus on religion and food waste, particularly in other geographical areas and with different types of target consumers. This would allow for exploration in countries where behavioral and intellectual experiences may differ. Since religiosity is a key driver, more measures and policies need to be developed. How should policymakers leverage religiosity? How do governments interact by collaborating with faith communities to provide the regional and international protection of waste food? All of these implications need to be analyzed in further studies and research.

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Appendix A. Scales

Religiosity Scale [71]

My faith involves all of my life

In my life, I experience the presence of God

I am religious person and I let religious considerations influence my everyday affairs

Nothing is as important to me as serving God as best as I know how

My religious beliefs are what really lie behind my whole approach to life

I try hard to carry my religion over into all my other dealings in life

One should seek God’s guidance when making every important decision

Religion is the most important thing in life

Religion is important to lead a moral life

Environmental Concern Scale [75]

I am extremely worried about the state of the world’s environment and what it will mean for my future

Mankind is severely abusing the environment

When humans interfere with nature it often produces disastrous consequences

The balance of nature is very delicate and easily upset

Humans must live in harmony with nature in order to survive

Food Waste Reduction Intention Scale [49]

I plan to waste no food at all

I intend to eat all purchased food

I intend to produce only very little food waste

I aim to use all leftovers

References

1. United Nations. Available online: <https://unstats.un.org/sdgs/report/2020/> (accessed on 27 March 2023).
2. European Commission. 2019. Available online: https://commission.europa.eu/index_en (accessed on 17 February 2023).
3. Godfray, H.C.J.; Beddington, J.R.; Crute, I.R.; Haddad, L.; Lawrence, D.; Muir, J.F.; Pretty, J.; Robinson, S.; Thomas, S.M.; Toulmin, C. Food security: The challenge of feeding 9 billion people. *Science* **2010**, *327*, 812–818. [CrossRef] [PubMed]
4. Papargyropoulou, E.; Lozano, R.; Steinberger, J.K.; Wright, N.; bin Ujang, Z. The food waste hierarchy as a framework for the management of food surplus and food waste. *J. Clean. Prod.* **2014**, *76*, 106–115. [CrossRef]
5. Buzby, J.C.; Hyman, J. Total and per capita value of food loss in the United States. *Food Policy* **2012**, *37*, 561–570. [CrossRef]
6. Venkat, K. The climate change and economic impacts of food waste in the United States. *Intern. J. Food Sys. Dyn.* **2012**, *2*, 431–446.
7. Food Wise. *Facts on Food Waste*. 2015. Available online: <http://www.foodwise.com> (accessed on 15 May 2024).

8. Abiad, M.G.; Meho, L.I. Food loss and food waste research in the Arab world: A systematic review. *Food Secur.* **2018**, *10*, 311–322. [[CrossRef](#)]
9. Schanes, K.; Dobernic, K.; Gözet, B. Food waste matters—A systematic review of household food waste practices and their policy implications. *J. Clean. Prod.* **2018**, *182*, 978–991. [[CrossRef](#)]
10. Cerciello, M. Spatial patterns in food waste at the local level. A preliminary analysis for Italian data. *Reg. Sci. Policy Pract.* **2021**, *13*, 83–101. [[CrossRef](#)]
11. Stangherlin, I.D.C.; de Barcellos, M.D. Drivers and barriers to food waste reduction. *Br. Food J.* **2018**, *120*, 2364–2387. [[CrossRef](#)]
12. Knezevic, B.; Kurnoga, N.; Anic, I.D. Typology of university students regarding attitudes towards food waste. *Br. Food J.* **2019**, *121*, 2578–2591. [[CrossRef](#)]
13. Filimonau, V.; Matute, J.; Kubal-Czerwińska, M.; Mika, M. Religious values and social distance as activators of norms to reduce food waste when dining out. *Sci. Total Environ.* **2023**, *868*, 161645. [[CrossRef](#)]
14. Filimonau, V.; Mika, M.; Kubal-Czerwińska, M.; Zajadacz, A.; Durydiwka, M. Religious values and family upbringing as antecedents of food waste avoidance. *Glob. Environ. Change* **2022**, *75*, 102547. [[CrossRef](#)]
15. Minton, E.A.; Johnson, K.A.; Vizcaino, M.; Wharton, C. Is it godly to waste food? How understanding consumers' religion can help reduce consumer food waste. *J. Consum. Aff.* **2020**, *54*, 1246–1269. [[CrossRef](#)]
16. Pellegrini, G.; Sillani, S.; Gregori, M.; Spada, A. Household food waste reduction: Italian consumers' analysis for improving food management. *Br. Food J.* **2019**, *121*, 1382–1397. [[CrossRef](#)]
17. Setti, M.; Falasconi, L.; Segrè, A.; Cusano, I.; Vittuari, M. Italian consumers' income and food waste behavior. *Br. Food J.* **2016**, *7*, 1731–1746. [[CrossRef](#)]
18. Azazz, A.M.; Elshaer, I. A. Amid the COVID-19 pandemic, social media usage and food waste intention: The role of excessive buying behavior and religiosity. *Sustainability* **2022**, *14*, 6786. [[CrossRef](#)]
19. Adel, A.M.; Dai, X.; Roshdy, R.S. Investigating the factors influencing food waste behavior in the Egyptian society. *J. Humanit. App. Soc. Sci.* **2023**. [[CrossRef](#)]
20. Filimonau, V.; Kadum, H.; Mohammed, N.K.; Alboory, H.; Qasem, J.M.; Ermolaev, V.A.; Muhialdin, B.J. Religiosity and food waste behavior at home and away. *J. Hosp. Mark. Manag.* **2022**, *31*, 797–818. [[CrossRef](#)]
21. Khorakian, A.; Baregheh, A.; Jahangir, M.; Heidari, A.; Saadatyar, F.S. Household food waste prevention behavior: The role of religious orientations, emotional intelligence, and spiritual well-being. *J. Environ. Plan. Manag.* **2022**, *67*, 59–84. [[CrossRef](#)]
22. Sarica, D.; Demircan, V.; Erturk, A.; Arslantas, N. An econometric analysis of the factors affecting consumers' bread waste and consumption behaviour: A case study of Isparta province, Turkey. *Br. Food J.* **2021**, *123*, 1449–1464. [[CrossRef](#)]
23. Hassan, H.F.; Ghandour, L.A.; Chalak, A.; Aoun, P.; Reynolds, C.; Abiad, M.G. The influence of religion and religiosity on food waste generation among restaurant clientele. *Front. Sustain. Food Syst.* **2022**, *6*, 1010262. [[CrossRef](#)]
24. Teng, C.C.; Wang, Y.C.; Cheng, Y.J.; Wang, S.N. Religious beliefs and food waste prevention practices: Mechanisms of divine and environmental awareness. *J. Hosp. Mark. Manag.* **2023**, *3*, 530–554. [[CrossRef](#)]
25. Mousa, T. Food Insecurity, Food Waste, and Food Redistribution among Arabic-Speaking Countries: A Systematic Review. *Jor. J. of Agric. Sci.* **2022**, *18*, 2. [[CrossRef](#)]
26. Fran, M.; Nir, A. Eating religiously: Food and faith in the 21st century. *Food Cult. Soc.* **2022**, *25*, 640–646.
27. Goodman, M.K. Food geographies I. *Progr. Hum. Geogr.* **2015**, *40*, 257–266. [[CrossRef](#)]
28. Parfitt, J.; Barthel, M.; MacNaughton, S. Food waste within food supply chains: Quantification and potential for change to 2050. *Philos. Trans. R. Soc. B Biol. Sci.* **2010**, *365*, 3065–3081. [[CrossRef](#)]
29. Neff, R.A.; Spiker, M.L.; Truant, P.L. Wasted Food: U.S. Consumers' Reported Awareness, Attitudes, and Behaviors. *PLoS ONE* **2015**, *10*, e0127881. [[CrossRef](#)]
30. Principato, L.; Secondi, L.; Pratesi, C.A. Reducing food waste: An investigation on the behaviour of Italian youths. *Br. Food J.* **2015**, *117*, 731–748. [[CrossRef](#)]
31. Mondéjar-Jiménez, J.A.; Ferrari, G.; Secondi, L.; Principato, L. From the table to waste: An exploratory study on behaviour towards food waste of Spanish and Italian youths. *J. Clean. Prod.* **2016**, *138*, 8–18. [[CrossRef](#)]
32. Graham-Rowe, E.; Jessop, D.C.; Sparks, P. Predicting household food waste reduction using an extended theory of planned behaviour. *Res. Cons. Rec.* **2015**, *101*, 194–202. [[CrossRef](#)]
33. Stancu, V.; Haugaard, P.; Lähteenmäki, L. Determinants of consumer food waste behaviour: Two routes to food waste. *Appetite* **2016**, *96*, 7–17. [[CrossRef](#)]
34. Ghani, W.A.W.A.K.; Rusli, I.F.; Biak, D.R.A.; Idris, A. An application of the theory of planned behaviour to study the influencing factors of participation in source separation of food waste. *Waste Manag.* **2013**, *33*, 1276–1281. [[CrossRef](#)] [[PubMed](#)]
35. Russell, S.V.; Young, C.W.; Unsworth, K.L.; Robinson, C. Bringing habits and emotions into food waste behaviour. *Resour. Conserv. Recycl.* **2017**, *125*, 107–114. [[CrossRef](#)]
36. Pakpour, A.H.; Zeidi, I.M.; Emamjomeh, M.M.; Asefzadeh, S.; Pearson, H. Household waste behaviours among a community sample in Iran: An application of the theory of planned behaviour. *Waste Manag.* **2014**, *34*, 980–986. [[CrossRef](#)] [[PubMed](#)]
37. Abdelradi, F. Food waste behaviour at the household level: A conceptual framework. *Waste Manag.* **2021**, *71*, 485–493. [[CrossRef](#)] [[PubMed](#)]
38. Alibeigi, A.H.; Geravandi, S.H.I.; Athari, Z. Methods to Reduce Bread Waste among Housewives in Kermanshah. *Q. J. Woman Soc.* **2011**, *2*, 73–92.

39. Midlarsky, E.; Mullin, A.S.J. Religion, altruism, and prosocial behavior: Conceptual and empirical approaches. In *The Oxford Handbook of Psychology and Spirituality*; Oxford University Press: Oxford, UK, 2012; pp. 138–148. [[CrossRef](#)]
40. Hasan, M.M.; Al Amin, M.; Arefin, M.S.; Mostafa, T. Green consumers' behavioral intention and loyalty to use mobile organic food delivery applications: The role of social supports, sustainability perceptions, and religious consciousness. *Environ. Dev. Sustain.* **2023**, *26*, 15953–16003. [[CrossRef](#)] [[PubMed](#)]
41. Zamri, G.B.; Azizal, N.K.A.; Nakamura, S.; Okada, K.; Nordin, N.H.; Othman, N.; Akhir, F.N.M.; Sobian, A.; Kaida, N.; Hara, H. Delivery, impact and approach of household food waste reduction campaigns. *J. Clean. Prod.* **2020**, *246*, 118969. [[CrossRef](#)]
42. Ghazali, E.M.; Mutum, D.S.; Ariswibowo, N. Impact of religious values and habit on an extended green purchase behaviour model. *Int. J. Consum. Stud.* **2018**, *42*, 639–654. [[CrossRef](#)]
43. McCarthy, B.; Liu, H.-B. Waste not, want not': Exploring green consumers' attitudes towards wasting edible food and actions to tackle food waste. *Br. Food J.* **2017**, *119*, 2519–2531. [[CrossRef](#)]
44. Watson, M.; Meah, A. Food, Waste and Safety: Negotiating Conflicting Social Anxieties into the Practices of Domestic Provisioning. *Sociol. Rev.* **2012**, *60* (Suppl. S2), 102–120. [[CrossRef](#)]
45. Waitt, G.; Phillips, C. Food waste and domestic refrigeration: A visceral and material approach. *Soc. Cult. Geogr.* **2015**, *17*, 359–379. [[CrossRef](#)]
46. Evans, D. Beyond the Throwaway Society: Ordinary Domestic Practice and a Sociological Approach to Household Food Waste. *Sociology* **2012**, *46*, 41–56. [[CrossRef](#)]
47. Gaiani, S.; Caldeira, S.; Adorno, V.; Segrè, A.; Vittuari, M. Food wasters: Profiling consumers' attitude to waste food in Italy. *Waste Manag.* **2018**, *72*, 17–24. [[CrossRef](#)] [[PubMed](#)]
48. Van Garde, S.J.; Woodburn, M.J. Food discard practices of householders. *J. Am. Diet. Assoc.* **1987**, *87*, 322–329. [[CrossRef](#)] [[PubMed](#)]
49. Visschers, V.H.M.; Wickli, N.; Siegrist, M. Sorting out food waste behaviour: A survey on the motivators and barriers of self-reported amounts of food waste in households. *J. Environ. Psychol.* **2016**, *45*, 66–78. [[CrossRef](#)]
50. Cleveland, M.; Laroche, M.; Hallab, R. Globalization, culture, religion, and values: Comparing consumption patterns of Lebanese Muslims and Christians. *J. Bus. Res.* **2013**, *66*, 958–967. [[CrossRef](#)]
51. McDaniel, S.W.; Burnett, J.J. Consumer Religiosity and Retail Store Evaluative Criteria. *J. Acad. Mark. Sci.* **1990**, *18*, 101–112. [[CrossRef](#)]
52. Weaver, G.R.; Agle, B.R. Religiosity and ethical behavior in organizations: A symbolic interactionist perspective. *Acad. Manag. Rev.* **2002**, *27*, 77–97. [[CrossRef](#)]
53. Rakrachakarn, V.; Moschis, G.P.; Ong, S.; Shannon, R. Materialism and Life Satisfaction: The Role of Religion. *J. Relig. Health* **2013**, *54*, 413–426. [[CrossRef](#)]
54. Vitell, S.; Ramos-Hidalgo, E.; Rodríguez-Rad, C. A Spanish perspective on the impact on religiosity and spirituality on consumer ethics. *Int. J. Consum. Stud.* **2018**, *42*, 675–686. [[CrossRef](#)]
55. Forghani, M.H.; Kazemi, A.; Ranjbarian, B. Religion, peculiar beliefs and luxury cars' consumer behavior in Iran. *J. Islam. Mark.* **2019**, *10*, 673–688. [[CrossRef](#)]
56. Hekmatpour, P. Right-Wing Stewards: The Promoting Effect of Religiosity on Environmental Concern among Political Conservatives in a Global Context. *Soc. Probl.* **2022**, *69*, 612–637. [[CrossRef](#)]
57. McNeely, A.; Cisneros, M.; Sanchez, V.N.; Gatson, S.N. Religious food pantry culture: Effects on nutrition policies and practices. *Food Cult. Soc.* **2022**, *27*, 658–676. [[CrossRef](#)]
58. Klabi, F.; Binzafrah, F. Exploring the relationships between Islam, some personal values, environmental concern, and electric vehicle purchase intention: The case of Saudi Arabia. *J. Islam. Mark.* **2021**, *14*, 366–393. [[CrossRef](#)]
59. Michaels, J.L.; Petrino, J.; Pitre-Zampol, T. Individual Differences in Religious Motivation Influence How People Think. *J. Sci. Study Relig.* **2021**, *60*, 64–82. [[CrossRef](#)]
60. Felix, R.; Hinsch, C.; Rauschnabel, P.A.; Schlegelmilch, B.B. Religiousness and Environmental Concern: A Multilevel and Multi-Country Analysis of the Role of Life Satisfaction and Indulgence. *J. Bus. Res.* **2018**, *91*, 304–312. [[CrossRef](#)]
61. Kanagy, C.L.; Nelsen, H.M. Religion and environmental concern: Challenging the dominant assumptions. *Rev. Relig. Res.* **1995**, *37*, 33–45. [[CrossRef](#)]
62. Siyavooshi, M.; Foroozanfar, A.; Sharifi, Y. Effect of Islamic values on green purchasing behavior. *J. Islam. Mark.* **2018**, *10*, 125–137. [[CrossRef](#)]
63. Katt, F.; Meixner, O. Food waste prevention behavior in the context of hedonic and utilitarian shopping value. *J. Clean. Prod.* **2020**, *273*, 122878. [[CrossRef](#)]
64. Lin, B.; Guan, C. Determinants of household food waste reduction intention in China: The role of perceived government control. *J. Environ. Manag.* **2021**, *299*, 113577. [[CrossRef](#)]
65. Melbye, E.L.; Onozaka, Y.; Hansen, H. Throwing It All Away: Exploring Affluent Consumers' Attitudes toward Wasting Edible Food. *J. Food Prod. Mark.* **2016**, *23*, 416–429. [[CrossRef](#)]
66. McCort, D.N.; Malhotra, K. Culture and Consumer Behavior: Toward an Understanding of Cross-Cultural Behavior in International Marketing. *J. Int. Consum. Mark.* **1993**, *6*, 91127. [[CrossRef](#)]
67. Soares, A.M.; Farhangmehr, M.; Shoham, A. Hofstede's dimensions of culture in international marketing studies. *J. Bus. Res.* **2017**, *60*, 277–284. [[CrossRef](#)]

68. Droeber, J. We are different! Similarities between Christian and Muslim women in Jordan. *Islam Christ.–Muslim Relat.* **2012**, *23*, 59–78. [[CrossRef](#)]
69. Mullet, E.; Azar, F. Apologies, repentance, and forgiveness: A Muslim–Christian comparison. *Int. J. Psychol. Relig.* **2009**, *19*, 275–285. [[CrossRef](#)]
70. Cornwell, B.; Cui, C.C.; Mitchell, V.; Schlegelmilch, B.; Dzulkiflee, A.; Chan, J. A cross-cultural study of the role of religion in consumers' ethical positions. *Int. Mark. Rev.* **2005**, *22*, 531–546. [[CrossRef](#)]
71. Koenig, H.G.; Büssing, A. The Duke University Religion Index (DUREL): A Five-Item Measure for Use in Epidemiological Studies. *Religions* **2010**, *1*, 78–85. [[CrossRef](#)]
72. Esat, G.; Day, S.; Smith, B.H. Religiosity and happiness of Turkish speaking Muslims: Does country happiness make a difference? *Ment. Health Relig. Cult.* **2021**, *24*, 713–727. [[CrossRef](#)]
73. Saffari, M.; Pakpour, A.H.; Naderi, M.K.; Koenig, H.G.; Baldacchino, D.R.; Piper, C.N. Spiritual coping, religiosity and quality of life: A study on Muslim patients undergoing haemodialysis. *Nephrology* **2013**, *18*, 269–275. [[CrossRef](#)]
74. Elhoushy, S.; Jang, S. Religiosity and food waste reduction intentions: A conceptual model. *Int. J. Consum. Stud.* **2021**, *45*, 287–302. [[CrossRef](#)]
75. Kim, Y.; Choi, S.M. Antecedents of Green Purchase Behavior: An Examination of Collectivism, Environmental Concern, and PCE. *ACR North Am. Adv.* **2005**, *32*, 592.
76. Hair, J.F.; Ringle, C.M.; Sarstedt, M. PLS-SEM: Indeed a silver bullet. *J. Mark. Theory Pract.* **2011**, *19*, 139–151. [[CrossRef](#)]
77. McQuitty, S. Statistical power and structural equation models in business research. *J. Bus. Res.* **2004**, *57*, 175–183. [[CrossRef](#)]
78. Hoe, S.L. Issues and Procedures in Adopting Structural Equation Modeling Technique. *J. Quant. Methods* **2008**, *3*, 76–83.
79. Sivo, S.A.; Fan, X.T.; Witta, E.L.; Willse, J.T. The Search for 'Optimal' Cutoff Properties: Fit Index Criteria in Structural Equation Modeling. *J. Exp. Educ.* **2006**, *74*, 267–289. [[CrossRef](#)]
80. Schreiber, J.B.; Nora, A.; Stage, F.K.; Barlow, E.A.; King, J. Reporting Structural Equation Modelling and Confirmatory Factor Analysis Results: A Review. *J. Exp. Educ.* **2006**, *99*, 323–337.
81. Oke, A.; Ladas, J.; Bailey, M. Ethical consumers: An exploratory investigation of the ethical food consumption behaviour of young adults in the North East of Scotland. *Br. Food J.* **2020**, *122*, 3623–3638. [[CrossRef](#)]
82. Bagozzi, R.P.; Yi, Y. Specification, evaluation, and interpretation of structural equation models. *J. Acad. Mark. Sci.* **2012**, *40*, 8–34. [[CrossRef](#)]
83. Yuan, K.; Wu, R.; Bentler, P.M. Ridge structural equation modelling with correlation matrices for ordinal and continuous data. *Br. J. Math. Stat. Psychol.* **2010**, *64*, 107–133. [[CrossRef](#)]
84. Garver, M.S.; Mentzer, J.T. Logistics Research Methods: Employing Structural Equation Modelling to Test for Construct Validity. *J. Bus. Logist.* **1999**, *20*, 33–57.
85. Hoelter, J.W. The Analysis of Covariance Structures: Goodness-of-Fit Indices. *Sociol. Methods Res.* **1983**, *11*, 325–344. [[CrossRef](#)]
86. Kline, R.B. *Principles and Practice of Structural Equation Modelling*, 3rd ed.; The Guilford Press: New York, NY, USA, 2010.
87. Nunnally, J.C. *Psychometric Theory*, 2nd ed.; McGraw-Hill: New York, NY, USA, 1978.
88. Tabachnik, B.; Fidell, L. *Using Multivariate Statistics*; Allyn and Bacon: Needham Heights, MA, USA, 2011.
89. Baron, R.M.; Kenny, D.A. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *J. Pers. Soc. Psychol.* **1986**, *51*, 1173–1182. [[CrossRef](#)] [[PubMed](#)]
90. Sümer, N. Yapısal Eşitlik Modelleri: Temel Kavramlar ve Örnek Uygulamalar. *Türk Psikol. Yazıları* **2000**, *3*, 49–73.
91. Schumacker, E.R.; Lomax, G.R. *A Beginner's Guide to Structural Equation Modeling*; Erlbaum: Mahwah, NJ, USA, 1996.
92. Tabachnick, B.G.; Fidell, L.S. *Using Multivariate Statistics*, 5th ed.; Allyn and Bacon: New York, NY, USA, 2007.
93. Hu, L.-T.; Bentler, P.M. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Struct. Eq. Model.* **1999**, *6*, 1–55. [[CrossRef](#)]
94. Schermelleh-Engel, K.; Moosbrugger, H.; Müller, H. Evaluating the Fit of Structural Equation Models: Tests of Significance and Descriptive Goodness-of-Fit Measures. *Meth. Psych. Res.* **2003**, *8*, 23–74.
95. Raykov, T.; Marcoulides, G.A. *An Introduction to Applied Multivariate Analysis*; Routledge/Taylor & Francis Group: New York, NY, USA, 2008.
96. Iacobucci, D. Structural Equation Modeling: Fit Indices, Sample Size and Advanced Topics. *J. Consum. Psychol.* **2010**, *20*, 90–98. [[CrossRef](#)]
97. Minton, E.A.; Xie, H.J.; Gurel-Atay, E.; Kahle, L.R. Greening up because of God: The relations among religion, sustainable consumption and subjective well-being. *Int. J. Consum. Stud.* **2018**, *42*, 655–663. [[CrossRef](#)]

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