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# The Influence of Environmental Self-Identity on the Relationship between Consumer Identities and Frugal Behavior

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**Abstract:** The need to reduce consumption is evident, and a way of achieving this is through austerity and frugal practices. The aim of this research was to advance the understanding of frugal behavior and its relation to consumer identities, and to analyze any possible mediating effects of environmental self-identity. In Study 1 ($n$ = 492), the factor structure of the consumer identities scale was tested and three distinct identities were defined: moral, wasteful, and thrifty consumer identities. In Study 2 ($n$ = 500), the influence of consumer identities on frugal behavior was studied and the possible mediating effect of environmental self-identity was analyzed. Environmental self-identity completely mediated the relationship between moral identity and frugal behavior and partially mediated the relationships of both wasteful and thrifty identities with frugal behavior. The model was able to predict 27.6% of the variance of environmental self-identity and 47.9% of the variance of frugal behavior, with a strong influence by the thrifty consumer identity. This emphasizes the economic dimension of frugal consumption patterns and the importance of considering how people view themselves, both as individuals and as consumers, in order to more effectively engage and maintain long-term sustainable frugal actions.

**Keywords:** frugal behavior; consumer identities; environmental self-identity



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## 1. Introduction

Problems related to climate change, air and water pollution, biodiversity loss, and resource scarcity have become a threat to human survival. In the last two centuries, high levels of environmental pollution have been responsible for the increase of approximately 1 °C of the planet's temperature, with a further estimated increase of 1.5 °C between the years 2030 and 2052 if global temperatures continue to rise at the current rate [1]. This change in global temperatures is primarily due to the impact of human behavior [2,3]. Therefore, changes in people's lifestyles and consumption patterns are necessary to minimize this burden and maintain optimal levels of sustainability [4–6].

Reducing consumption is an obvious need and a way to achieve this is through austerity and frugal practices. Lastovicka et al. [7] (p. 88) defined frugality as a "lifestyle trait characterized by the degree to which consumers are both restrained in acquiring and in resourcefully using economic goods and services to achieve longer-term goals." Muiños et al. [8] found evidence of the relationship between frugality and psychological well-being and argued that frugality acts as a mechanism that can motivate people to control their consumption.

A frugal lifestyle does not depend specifically on resource deprivation or scarcity, but is instead related to beliefs, identities, and pro-environmental and social behaviors. It involves voluntarily reducing consumption in order to achieve medium- and long-term environmentally sustainable goals [9]. Frugality can be conceived as a pattern of thoughts, feelings, and intentions influencing an individual's preference for conserving resources and obtaining more from less [10]. Frugal behavior involves a conscious decision, not

focused solely on economic motives, with positive and rewarding emotional consequences for the individual [8]. It can be described as a set of self-regulated consumption behaviors, based on disciplined and restricted purchasing, and on the ingenious use of available products and services. These include routine actions such as seeking value and low prices, limiting consumption, reusing, repairing, and recycling. Frugal behavior derives from a combination of external and internal factors. External factors include economic conditions, reinforcement, or discouragement by the individual's social and cultural environment. In this regard, there are studies that indicate that income level is moderately and negatively related to frugality and frugal behavior [11–13]. There are also internal factors such as personal value orientations and lifestyle beliefs and interests [7,10,14].

A recent study exploring the influence of consciousness for sustainable consumption on frugal behavior found mixed results [15]. Consciousness was measured by three factors: (a) environmental consciousness, centered on the responsible awareness of environmentally friendly consumption; (b) social consciousness, focused on socially responsible and fair consumption; and (c) economic consciousness, anchored on the effort to consume in a manner that protects long-term economic well-being. The model was able to explain 46% of the variance of frugal behavior, and while all three dimensions of consciousness were significant, it was the economic factor that made the greatest contribution. The connection between economic factors and frugal behavior has been observed in multiple studies, on topics such as market mavenism and shopping antipathy [16] or on having an interest in savings [17]. These results indicate a greater focus on economic motives over environmental or social considerations, when deciding to engage in frugal behavior.

It is absolutely necessary to reduce the excessive consumption of goods and services and to maintain frugal practices. However, there is not enough evidence on the motivational factors that drive people to voluntarily reduce consumption and to resourcefully use what is already available to them. Because frugal consumption involves conscious decision taking, the individual needs to be aware and agree with this pattern of behavior. As such, this type of conscious consumption also needs to be consistent with the individual's identity. Environmental self-identity's impact on pro-environmental behaviors has been extensively studied [18–20] and, to a lesser extent, so has the influence of consumer identities [21]. The aim of this investigation was to advance the understanding of frugal behavior and its relation to specific social identity constructs such as the different consumer identity profiles, and to analyze any potential mediating effect of a more general social identity, in this case, environmental self-identity.

Self-identity, defined as the label with which an individual self-associates, is a strong predictor of behavior [22]. Self-identity is an individual's perception of who they are, made up of attributes, traits, abilities, and a sense of belonging to a specific group [23]. A person's willingness to act is driven by their self-identity, however, they also think and respond flexibly to their environment. Individuals are guided by multiple identities, depending on the context. Broader identity categories, such as those related to gender or culture, may be salient across contexts, whereas more specific identities such as being a consumer, rely on more specific contextual details to become salient [24]. Individuals behave in ways consistent with their self-identity because they are motivated to be consistent with how they see themselves [25,26], because doing so feels meaningful and significant [27], and because not doing so can lead to feelings of guilt [28].

Van der Werff et al. [18] developed a general environmental self-identity measure, which they defined as the degree to which a person sees themself as someone whose actions are pro-environmental. This concept of environmental self-identity differs from that of environmental identity [29,30], which is conceptualized as a sense of connection to some part of the natural environment that affects the way we perceive and act toward the world. Environmental identity focuses on the belief that the environment is an important part of who a person is and whether they see themselves as part of nature, whereas environmental self-identity reflects a person's view of themselves as someone who acts pro-environmentally [18,19]. Although similar, they are not necessarily the same, a person

may see themself as part of nature and, yet, not as someone who acts pro-environmentally, either due to a lack of knowledge of environmental problems, a lack of awareness of the connection between environmental problems and individual actions, a lack of means to carry out a specific action, etc. There is evidence of the relation between specific types of environmental self-identity and behavior linked to that identity. These studies used measures of self-identity analogous to those used by Van der Werff et al. [18,19], i.e., the degree to which people see themselves as the type of person who does that particular environmental behavior. These specific self-identities were capable of influencing the relevant behavior they were associated with, for example, recycling self-identity was related to recycling behavior [31] and environmental activism self-identity was related to environmental activism [32]. Specific self-identities may be strongly related to a specific behavior associated with each identity, but not necessarily to other pro-environmental behaviors. Thus, studying other more general self-identities that may be related to a wide range of behaviors, preferences, and intentions is useful.

There is evidence that environmental self-identity is related to energy saving [20,33], waste reduction and eco-shopping [20], recycling, purchasing fair-trade products and refraining from flying to a holiday destination [34], and using green energy and choosing more sustainable products [19,35]. Focusing on a general environmental self-identity may be beneficial, as it allows the targeting of a range of behaviors simultaneously. Higher levels of environmental self-identity predict behavior by activating personal norms and a sense of moral obligation to act in a way that is consistent with that self-identity [18,19]. Environmental self-identity is susceptible to change and can be strengthened, e.g., by remembering past pro-environmental actions [18] or by belonging to or being a customer of an organization that the individual perceives as being environmentally responsible [36]. This strengthened environmental self-identity can, in turn, motivate future pro-environmental behavior and thus potentially reinforce itself [20,26,35].

The influence of environmental self-identity on behavior is not limited to a direct effect; there is further evidence of the mediating role environmental self-identity has between values, environmental preferences, and behavior [19,20,34], in diverse areas such as the intention to consume organic food [37], sustainable buying and curtailment behaviors [38], or sustainable consumption behaviors [39]. There is also some evidence that biospheric values and pro-environmental behavior is mediated simultaneously by both environmental self-identity and environmental group-identity, defined as the degree to which the group the individual belongs to is seen as environmentally friendly [40].

In any case, much of the environmental impact caused by individual lifestyles stems from the purchase, use, and subsequent disposal of goods [41]. These purchasing behaviors occur in a variety of contexts, in which environmental self-identity may not be the most salient. Therefore, it is useful to understand other identities that influence consumer behavior. These have been studied in relation to brand identities [42,43] or consumer motives [24]. Reed et al. [44] defined consumer identities as "any category label with which a consumer self-associates" (p. 310). However, not much evidence exists yet on the role played by consumer self-identity and its relation to consumption self-control. Consumption-related self-identity has been analyzed as an explanatory factor for the adoption of electric cars [45], the recycling of everyday products [46], the future purchase of organic dairy products [47], and the intention to buy fresh organic fruit [48].

Recently, Gatersleben et al. [21] examined how people described themselves as consumers and identified four distinct consumer identity factors or profiles: (a) moral identity, related to the consumption of organic, fair-trade, or local products; (b) wasteful identity, related to the impulsivity or satisfaction with shopping and consumption; (c) frugal identity, characterized by the refusal to waste things such as money, energy, or food; and finally, (d) thrifty identity, which places greater emphasis on economic savings, maximizing the acquisition of products for the least amount of money possible. The authors found that consumers can hold multiple, possibly conflicting motives influencing pro-environmental behavior, driven by consumer

identities beyond being just *green* or *moral*. This can lead people to adopt the same behavior for different reasons, consistent with their consumer identities.

Gatersleben et al. [21] found the moral consumer identity to be consistently associated with pro-environmental behaviors, such as buying green and fair-trade products. This link between moral motivations and behavior is consistent with findings from previous studies [18,49,50]. Both the moral and frugal consumer identities were found to be important for energy conservation behaviors. As buying green and fair-trade products are generally associated with increased costs, and energy conservation behavior is associated with reduced environmental impact, as well as financial costs, Gatersleben et al. suggested that there may not necessarily be a conflict between environmental and financial concerns regarding pro-environmental behavior. Both moral and frugal consumer identities were found to be clearly distinct, but related and influenced pro-environmental behavior in different ways.

The moral and frugal consumer identities were both negatively related to the wasteful consumer identity. This is consistent with research on the negative relation between materialism and environmental concern and frugality [10,34]. However, these negative correlations were relatively small, and they varied between studies, suggesting that consumers could hold these identities simultaneously even if they potentially conflict with each other. This opens the possibility of developing policies that target multiple identities in order to appeal to a wider audience. Gatersleben et al. also found differences between the frugal and thrifty consumer identities, regarding behavior patterns. The frugal consumer identity focused on the desire to avoid waste (including money), regardless of the availability of resources, whereas the thrifty consumer identity was related to perceptions of cost, value, and economic worth. Both identities were associated with economic savings; however, the frugal consumer identity was more closely linked to reducing environmental impact.

There is evidence of the relationship between consumer identities and pro-environmental behavior [21]. However, the relationship between these consumer identities and frugal behavior is unclear. Similarly, the relationship between environmental self-identity and pro-environmental behavior has also been studied [18,19,35], but this is not the case when considering the relationship between environmental self-identity and frugal behavior. Remembering past pro-environmental behavior or belonging to groups perceived as being environmentally responsible has been found to strengthen environmental self-identity [18,36], and this, in turn, can motivate future pro-environmental behavior [26,35]. To the extent that environmental self-identity can be reinforced, it is also feasible that it can act as a contributing factor toward the relation between consumer behavior and consumer self-identities. Furthermore, although there is some evidence that several identities can simultaneously influence environmental behavior [40], it is necessary to further examine how different self-identities interact with each other to regulate consumer behaviors. As such, this raises the possibility of environmental self-identity having a mediating effect on the relationship between consumer identities and frugal behavior.

Our research addressed two main objectives. The first was to test whether the four consumer identity profiles proposed by Gatersleben et al. [21] can be observed in our sample of the Spanish population (Study 1). The study by Gatersleben et al. established a consumption identity guided by ethical concerns (moral consumer identity), an identity oriented by impulsivity and satisfaction with shopping (wasteful consumer identity), and two identities centered on regulating and controlling consumption, either for economic reasons (thrifty consumer identity) or as a way of avoiding waste (frugal consumer identity). These last two consumer identities are, however, conceptually closer than the other two identities are. Our second main objective was to examine the influence that consumer identities have on frugal behavior and to analyze the mediating effect of environmental self-identity on the relation between them (Study 2). Therefore, we established the following hypotheses regarding the relationship between consumer identities and frugal behavior, and the mediating effect of environmental self-identity:

**Hypothesis 1 (H1).** *Moral, frugal, and thrifty consumer identities positively influence frugal behavior.*

**Hypothesis 2 (H2).** *Wasteful consumer identity negatively influences frugal behavior.*

**Hypothesis 3 (H3).** *Moral, frugal, and thrifty consumer identities positively influence environmental self-identity.*

**Hypothesis 4 (H4).** *Wasteful consumer identity negatively influences environmental self-identity.*

**Hypothesis 5 (H5).** *Environmental self-identity positively influences frugal behavior.*

**Hypothesis 6 (H6).** *Environmental self-identity mediates the relationship between consumer identities and frugal behavior.*

## 2. Study One

The aim of study one was to confirm if the four consumer identity profiles proposed by Gatersleben et al. [21] can be observed in a Spanish-speaking context. For this purpose, the Consumer Identities Scale was translated and adapted for use with the Spanish population.

### *2.1. Materials and Methods*

#### 2.1.1. Participants

A total of 492 people participated in this study, 46.7% ($n$ = 230) were men and 53.3% ($n$ = 262) women, all Spanish residents. The average age of the participants was 39.04 years (SD = 15.64) ranging from 18 to 91. Regarding their educational level, 16.1% ($n$ = 79) of participants stated that they had completed primary education, 31.7% ($n$ = 156) had completed secondary education, and 34.8% ($n$ = 171) had completed university studies. Participants' employment status was as follows, 66.3% ($n$ = 326) were employed, 11.6% ($n$ = 57) were unemployed, 14.2% ($n$ = 70) were studying, and 7.9% ($n$ = 39) were retired. With regard to income levels, 18.9% ($n$ = 93) of the participants stated that they had a family income of less than EUR 1000 per month, 24.4% ($n$ = 120) between EUR 1001 and 1500, 18.7% ($n$ = 92) between EUR 1501 and 2000, 10.6% ($n$ = 52) between EUR 2001 and 2500, 13% ($n$ = 64) between EUR 2501 and 3000, and finally, 14.4% ($n$ = 71) stated that they had an income greater than EUR 3000 per month.

#### 2.1.2. Instruments

Participants answered an adapted version of the Consumer Identities Scale [21]. It measures the extent to which participants felt each identity applied to them. The scale was composed of 13 items grouped into four identity factors: a moral identity composed of three items (e.g., "I am a buyer of fair-trade products"), a wasteful identity made up of four items (e.g., "I am a buyer of the latest trends"), a frugal identity with four items (e.g., "I am a budget-conscious buyer"), and a thrifty identity composed of two items (e.g., "I am a buyer of long-lasting goods"). Respondents were asked to indicate how much they agreed or disagreed with each statement describing them as a consumer. The scale used a Likert-type response with scores from 1 to 7, with 1 being strongly disagree and 7 being strongly agree. The questionnaire also included items measuring sociodemographic variables, such as education level, employment status, and household income.

#### 2.1.3. Procedure and Data Analysis

The adaptation to Spanish of the consumer identities scale was conducted following the indications of Muñiz et al. [51]. The original scale consisted of a list of consumer identities, which were translated from English to Spanish. A series of statements were then written to represent each identity, in the style of "I am a buyer of ... ". Finally, this list of statements was translated from Spanish to English to assess how well they corresponded with the original items. This was carried out by two independent experts, one in environmental psychology and another with a high proficiency in English.

Based on the list of consumer identities developed by Gatersleben et al., we combined each individual identity descriptor with the general instructions given by the authors, i.e., "When it comes to being a consumer, I am . . . ," for the structure of each item in our adapted version of the consumer identities scale. This item structure is consistent with other self-identity scales [37,45,52,53].

The questionnaire was distributed face-to-face to the general population, aiming to ensure an equitable distribution among different age groups. At the beginning of the questionnaire, participants were informed about the objectives of the study. They were informed that their personal data would be processed with confidentiality, that their anonymity would be guaranteed, that their involvement was voluntary, and that they could refuse to participate at any point in time. Finally, participants were asked for their consent to participate in the survey. The questionnaire was then presented using the Qualtrics data collection platform. A confirmatory factor analysis was carried out using IBM SPSS Statistics 24 and IBM Amos 24.

### *2.2. Results*

A confirmatory factor analysis was performed on the consumer identities scale in its 4-factor format, as proposed by Gatersleben et al. [21]. The initial model presented a low model fit. After verifying modification indices (M.I.) related to the covariance, intra factor errors with M.I. greater than 10.0 were correlated [54]. These were between items 5 and 6 ("I am a buyer of the latest trends" and "I am a buyer who enjoys shopping"), 9 and 10 ("I am a budget-conscious buyer" and "I am a frugal shopper (I buy only what I need)"), and 9 and 11 ("I am a budget-conscious buyer" and "I am a buyer of energy-saving products"); however, adequate indices could not be achieved according to the criteria of Hu and Bentler [55], with *CMIN/DF* = 3.66, *CFI* = 0.90, *GFI* = 0.94, and *RMSEA* = 0.07.

The decision was made to combine the items between the frugal and thrifty factors, due to the high correlation between these two factors (0.83) being greater than the square root of the average extracted variance (AVE) of each respective factor. The items of this combined factor were examined and the decision was made to eliminate items 10 ("I am a frugal shopper (I buy only what I need)") and 11 ("I am a buyer of energy-saving products"), as they did not fit thematically with the rest. The remaining items focused explicitly on economic savings. Given that the items removed belonged to the frugal factor and that all the remaining items had a greater emphasis on economic savings, the name thrifty was maintained for this third factor. It was composed of items 8 ("I am a buyer informed about what I want to purchase."), 9 ("I am a budget-conscious buyer"), 12 ("I am a buyer of long-lasting goods"), and 13 ("I am a buyer who seeks bargains and sales").

The model was tested again, this time with only three factors: moral, wasteful, and thrifty. Correlating errors between items 5 and 6, the model fit proved to be adequate with *CMIN/DF* = 2.66, *CFI* = 0.95, *GFI* = 0.96, and *RMSEA* = 0.06.

The moral consumer identity was positively related to a wasteful consumer identity ($r = 0.15$, $p = 0.018$) and the thrifty consumer identity ($r = 0.20$, $p = 0.004$), and the wasteful consumer identity was negatively related to the thrifty consumer identity ($r = -0.51$, $p < 0.001$).

## 3. Study Two

The aim of study two was to examine the influence that consumer identities have on frugal behavior and to analyze the mediating effect of environmental self-identity on the relationship between them.

### *3.1. Materials and Methods*

#### 3.1.1. Participants

A total of 500 people participated in this study, 29.2% ($n = 146$) were men and 70.6% ($n = 353$) women, all Spanish residents. Participants' average age was 34.62 years (SD = 15.09) ranging from 18 to 78. Regarding their educational level, 23.8% ($n = 119$) had

completed secondary education, 27% ($n$ = 135) were studying at university, and 39.8% ($n$ = 199) had completed university studies. When asked about their employment status, 49.4% ($n$ = 247) stated they were employed, 13% ($n$ = 65) were unemployed, 32% ($n$ = 160) were studying, and 5.6% ($n$ = 28) were retired. Regarding income level, 15.4% ($n$ = 77) of participants stated that they had a household income of less than EUR 1000 per month, 24.4% ($n$ = 122) between EUR 1001 and 1500, 21.8% ($n$ = 109) between EUR 1501 and 2000, 15.8% ($n$ = 79) between EUR 2001 and 2500, 9.6% ($n$ = 48) between EUR 2501 and 3000, and finally, 13% ($n$ = 65) stated that they had an income greater than EUR 3000 per month.

#### 3.1.2. Instruments

Participants answered a questionnaire consisting of three scales. The adapted version of the Consumer Identities Scale, developed in the previous study, was composed of 11 items grouped into three factors: moral, wasteful, and thrifty. Respondents were asked to indicate how much they agreed or disagreed with each statement describing them as a consumer. Respondents also answered the Frugal Behavior Scale [8], composed of 10 items (e.g., "I look after my belongings to save in the long term"), which measures voluntary restriction in acquiring goods and the resourceful use of what is already available to the individual. The Environmental Self-Identity Scale [18], consisting of three items (i.e., "Acting environmentally friendly is an important part of who I am," "I am the type of person who acts environmentally friendly," "I see myself as an environmentally friendly person"), which measures the degree to which an individual identifies as someone whose actions are pro-environmental. All scales used a Likert-type response with scores from 1 to 10, with 1 being strongly disagree and 10 being strongly agree. The questionnaire also included items measuring sociodemographic variables, such as education level, employment status, and household income.

#### 3.1.3. Procedure and Data Analysis

The questionnaire was sent out online to 3rd-year psychology students and they were asked to also share it with their family members and acquaintances. Participants were first informed about the objectives of the study. They were informed that their personal data would be processed with confidentiality, that their anonymity would be guaranteed, that their involvement was voluntary, and that they could refuse to participate at any point in time. Participants were then asked for their consent to participate in the survey. The questionnaire was presented using the Qualtrics data collection platform, data analysis was performed using IBM SPSS Statistics 24, and bootstrapping mediation analysis was done using IBM Amos 24.

### *3.2. Results*

Means, standard deviations, internal consistencies, and correlations for all study variables are presented in Table 1.

**Table 1.** Descriptive, alpha, and correlation matrix of the scales used.

| | Variables | *M* | *SD* | α | 1. | 2. | 3. | 4. |
|---|---|---|---|---|---|---|---|---|
| 1. | Moral identity | 5.29 | 2.05 | 0.74 | | | | |
| 2. | Wasteful identity | 4.34 | 1.94 | 0.75 | 0.19 ** | | | |
| 3. | Thrifty identity | 7.13 | 1.16 | 0.60 | 0.31 ** | 0.17 ** | | |
| 4. | Environmental self-identity | 7.58 | 1.97 | 0.92 | 0.36 ** | −0.04 | 0.41 ** | |
| 5. | Frugal behavior | 7.57 | 1.69 | 0.92 | 0.22 ** | −0.08 | 0.60 ** | 0.52 ** |

Note. ** $p < 0.01$ (2-tailed).

Structural equation analysis was used to test the relationships between variables. We tested the model where environmental self-identity mediates the relationship between the consumer identities (i.e., moral, wasteful, and thrifty) and frugal behavior (Figure 1). In the model tested, the moral, wasteful, and thrifty consumer identities, as well as frugal behavior, were the observed variables, whereas the environmental self-identity was a latent variable.

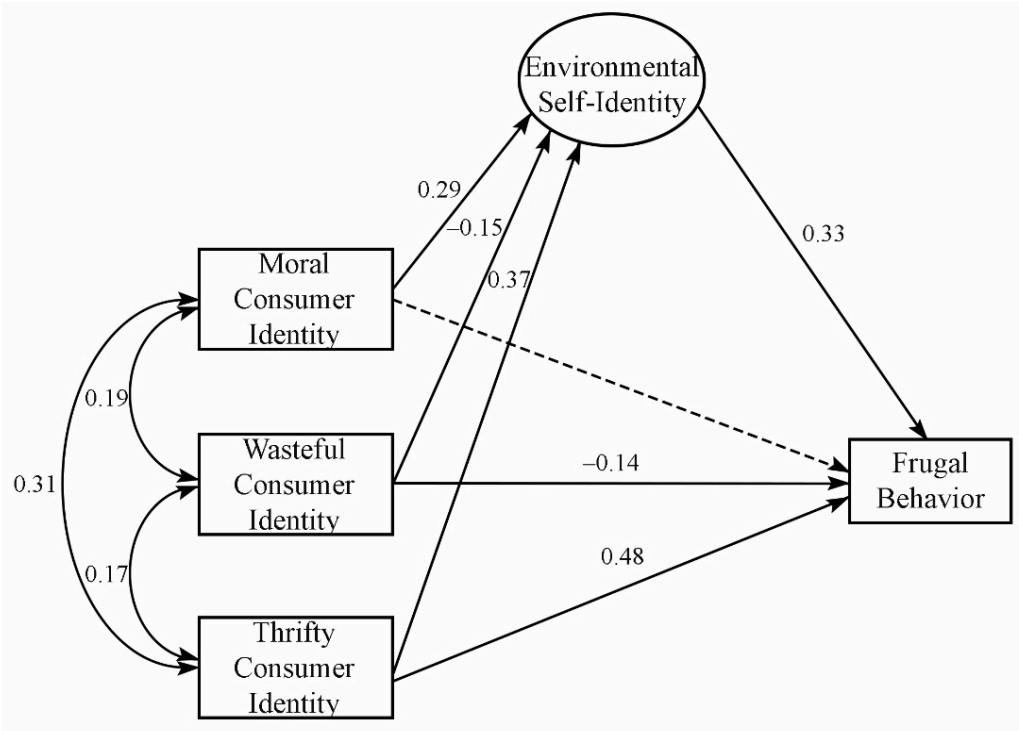


**Figure 1.** Model of environmental self-identity mediating between consumer identities and frugal behavior.

The model initially presented a low goodness of fit (*CMIN/DF* = 4.9, *CFI* = 0.98, *GFI* = 0.98, and *RMSEA* = 0.09). Considering evidence provided by other authors, income may reasonably be expected to affect the mediating role of environmental self-identity over consumer identities and frugal behavior. After controlling for the influence of household income on frugal behavior, we observed an adequate model fit, *CMIN/DF* = 3.12, *CFI* = 0.98, *GFI* = 0.98, and *RMSEA* = 0.07.

We tested the significance of the model and of the mediating effects using the bootstrap method [56] with 95% confidence intervals (CI) and 10,000 bootstrap resamplings. The model explained 47.9% of the variance of frugal behavior ($R^2$ = 0.479, $p < 0.001$, 95% *CI* = [0.372, 0.563]) and 27.6% of the variance of environmental self-identity ($R^2$ = 0.276, $p < 0.001$, 95% *CI* = [0.189, 0.368]).

Standardized direct and indirect effects can be found in Table 2. Environmental self-identity completely mediates the relationship between moral identity and frugal behavior and partially mediates the relationships of both wasteful and thrifty identities with frugal behavior. The direct effect between wasteful identity and frugal behavior was significant, as well as the direct effect of thrifty identity on frugal behavior.

**Table 2.** Standardized direct and indirect effects.

| | β | 95% CI |
|---|---|---|
| Environmental self-identity | | |
| → Frugal behavior | 0.39 *** | [0.21, 0.44] |
| Moral identity | | |
| → Environmental self-identity | 0.29 *** | [0.20, 0.39] |
| → Frugal behavior (direct) | −0.03 | [−0.11, 0.05] |
| → Frugal behavior (indirect) | 0.10 *** | [0.06, 0.15] |
| Wasteful identity | | |
| → Environmental self-identity | −0.15 *** | [−0.25, −0.06] |
| → Frugal behavior (direct) | −0.14 ** | [−0.21, −0.06] |
| → Frugal behavior (indirect) | −0.05 *** | [−0.10, −0.02] |
| Thrifty identity | | |
| → Environmental self-identity | 0.37 *** | [0.25, 0.48] |
| → Frugal behavior (direct) | 0.48 *** | [0.39, 0.57] |
| → Frugal behavior (indirect) | 0.12 *** | [0.07, 0.19] |

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

## 4. Discussion

In this study, we tested the relation between consumer identities and frugal behavior and analyzed the mediating effect that environmental self-identity has between them; for this, two studies were conducted. In the first study, the structure of the Consumer Identities Scale was tested to determine whether the different profiles proposed by Gatersleben et al. [21] could be observed in a Spanish-speaking sample. In the second study, a model was tested that included the consumer identities found in study one, environmental self-identity and frugal behavior. In this paper, we obtained results on the important relationship between the different identity profiles and frugal behavior.

The Consumer Identities Scale was capable of distinguishing the different profiles with which individuals self-identify when they see themselves in the role of a consumer or buyer. Gatersleben et al. identified four distinct consumer identities: moral, wasteful, frugal, and thrifty; however, we observed a different structure. In Study 1, the factor structure of the scale was analyzed, and while the moral and wasteful consumer identities were clearly identified, it was not possible to sufficiently distinguish the frugal and thrifty consumer identities from each other. As we were unable to clearly distinguish between these two identities, we combined them into a single factor. The items removed from the frugal factor were focused on waste reduction, while those remaining were focused on economic savings. This new factor kept the name thrifty, due to the shift in focus from a pursuit of a frugal lifestyle, and waste and consumption reduction, to one emphasizing the economic domain of consumption, such as maximizing gains and searching for sales and bargains. These differences between our results and those obtained by Gatersleben et al. [21] might be due to the cultural differences between our population sample and those used by the authors, as well as the way the scale was adapted.

In the original study by Gatersleben et al. [21], the thrifty identity was described strictly in economic terms, relating to the perception of cost, value, and economic worth. In contrast, the frugal identity was described as a desire to avoid waste of any kind, such as money, resources, or food. We believe this distinction has a cultural basis, associated with consumption patterns, that might not be present in the Spanish context. In our study, it was not possible to establish frugality without emphasizing its economic dimension, which led us to combine the frugal and thrifty identities into a single consumer identity. Our results might also be related to the different economic conditions between Spain and the United Kingdom. However, any results due to cultural differences should be explicitly tested in future investigations exploring frugality as a social value in different social contexts.

In addition to the possible influence of culture on consumer identities, the difference in factor structure we observed could be due to slight differences in our measurement

approach, compared to the original study. Gatersleben et al. initially explored how people described themselves as consumers, recognizing 25 distinct identities. In a subsequent study, they managed to group these into four factors: moral, wasteful, frugal, and thrifty; and reduced the number of identities to 13. We took these 13 descriptors and the instructions given by the authors regarding each identity ("When it comes to being a consumer, I am . . . ") and wrote a series of statements, along the lines of "I am a buyer . . . ". It is possible that this modification may have also influenced our results. In any case, more research on the subject is needed in order to broaden our understanding of consumer identities in different cultural contexts.

The correlations between consumer identities found in Study 1 and Study 2 were different, but these results are consistent with the approach and evidence provided by Gatersleben et al. [21]. A strong negative correlation was observed between wasteful and frugal consumer identities in our first study. However, in our second study, a positive but low-sized correlation was obtained between these identities. The moral identity had moderate to small positive correlations with both frugal and thrifty identities, in study one and two. These identities were clearly distinct, but our results suggested that consumers can hold these potentially conflicting identities simultaneously, hinting at the influence consumer identities might have on behavior, depending on how contextually salient each identity might be.

We found that consumer identities were able to explain a moderate amount of the variance of environmental self-identity, defined by van der Werff et al. [18] as the extent to which one sees oneself as a type of person whose actions are environmentally friendly. The authors argued that environmental self-identity influences pro-environmental behavior by relying on obligation-based intrinsic motivation, anticipating feelings of guilt when not behaving in ways consistent with their self-identity. They stated that pro-environmental actions are promoted by both the enjoyment of these behaviors and the emphasis on a personal obligation to act in a pro-environmental manner. In line with this theoretical approach, our results showed a strong relation between the moral consumer identity and environmental self-identity (Hypothesis 3 is partially supported). A personal commitment to social issues occurs, regarding a positive assessment of consumption that brings benefits to the community. Despite this strong relationship between moral consumer identity and environmental self-identity, according to our results, it was the thrifty consumer identity that had the greatest influence on environmental self-identity (Hypothesis 3 is partially supported). Finally, as expected, the wasteful consumer identity had a negative relationship with environmental self-identity (Hypothesis 4 is supported). Individuals self-identifying as impulsive, trend-seeking buyers are less likely to see themselves as people whose actions are pro-environmental. A strong direct relationship was observed between environmental self-identity and frugal behavior (Hypothesis 5 is supported), highlighting the perception of consumption and waste reduction, such as actions with positive consequences for the environment. Once again, this link emphasizes the importance of promoting frugal practices.

The model as a whole, including the three consumer identities and environmental self-identity, was able to predict a high amount of the variance of frugal behavior (47.9%). When analyzing the influence of the three consumer identities, it was the thrifty identity that had the strongest influence on frugal behavior (Hypothesis 1 is partially supported), highlighting the economic nature of this type of behavior, in line with previous evidence [15]. As expected, wasteful consumer identity had a negative influence on frugal behavior (Hypothesis 2 is supported); the more an individual identifies as a wasteful consumer, the less likely they are to engage in frugal consumption practices. Lastly, the moral consumer identity did not seem to influence frugal behavior (Hypothesis 1 is partially rejected), contrary to what was expected in the existing literature [49]. While frugal behavior is defined as a deliberate decision to reduce consumption, not focused exclusively on economic motives, we found no association between moral identity and frugality. Rather, it was the thrifty consumer identity, focused entirely on maximizing profit while minimizing cost, that had the strongest influence.

Frugal behavior seems to rely more on economic dimensions as predictors of behavior. This reflects results obtained by Suárez et al. [15]. When analyzing consciousness for sustainable environmental, social, and economic consumption in relation to frugal behavior, they found that, despite the significant influence of these three types of consciousness, the economic dimension was capable of predicting a greater amount of frugal behavior. This type of behavior seems to be anchored on a concern for maintaining long-term economic and financial stability, somewhat disregarding moral, environmental, and social concerns as motivators of behavior. The relevance of the economic dimension could also be related to the influence of income level as a variable to be controlled, as shown in the results of Study 2. However, our results did not provide direct evidence regarding the effect of this variable, so this idea should be taken with some degree of caution.

When analyzing the effect of environmental self-identity, we found that it partially mediated the influence of wasteful and thrifty consumer identities on frugal behavior, while fully mediating the influence of moral consumer identity on frugal behavior (Hypothesis 6 is supported). Moral consumer identity did not seem to have a direct influence on frugal behavior; nonetheless, when environmental self-identity is present, it slightly increases frugal behavior. Wasteful consumer identity had a negative relation with frugal behavior; a highly wasteful consumer is not likely to partake in frugal practices. However, the mediating effect of environmental self-identity increases this negative relation and increases consumption. This is somewhat paradoxical, but it emphasizes the independence of consumer identities and how increased consumption and wastefulness may occur if the products consumed are believed to be green or environmentally friendly. A consumer or buyer identifying as pro-environmental does not necessarily equate to reduced levels of consumption. This could be explained by considering the materialistic view of green consumerism [57]. In the case of the thrifty identity, frugal behavior increases when environmental self-identity is present. This is consistent with previous evidence on the influence environmental self-identity has on recalling past pro-environmental behaviors and encouraging them to be repeated in the future [18,19,58].

Our study provides evidence of the relation between consumer self-identities and environmental self-identity, and how this connection influences frugal behavior. The thrifty consumer identity emerges as having greater importance than the other consumer self-identities in explaining frugal behavior. This influence increases when mediated by environmental self-identity. As a major source of the environmental burden of people's lifestyles is the result of the purchase, use, and disposal of consumer goods, it is essential to expand the study of variables centered on reducing consumption. So far, research on the environmental impact of human behavior has mainly focused on studying the importance of pro-environmental behaviors as a way of mitigating this impact, on reducing environmentally harmful actions, and on how these pro-environmental behaviors are related to attitudes, beliefs, value orientations, or identity profiles. A possible future line of research based on our results could be linked to recent evidence on the Values-Identity-Personal Norm model -VIP- [59,60], as well as the integration of the VIP model and the Theory of Planned Behavior [61]. Along these lines, and based on our results, it would be feasible to further investigate the link between environmental self-identity and consumer identities, and how these variables could contribute explanatory power in the VIP model when trying to predict frugal consumption behavior.

## 5. Limitations

Our research presented a series of limitations that highlight possible approaches for future research. To begin with, the structure of the consumer identities scale needs to be further refined; while we could identify the moral, wasteful, and thrifty consumer identities, the latter only had a moderately sized internal consistency (0.60). The relationship between the different consumer identities and how salient each of these might be needs to be explored in a more precise manner. Both our results and those of Gatersleben et al. [21] point to variability in the relation between the different consumer identities. It is necessary

to study whether there are indeed cultural differences that may affect the expression of consumer identities. It would also be useful to study the relationship between consumer identities and other consumption practices, not only frugal behavior, in order to verify that the effects found are maintained. The mediating effect of environmental self-identity between wasteful identity and frugal behavior needs further study. Our results were counterintuitive; the presence of environmental self-identity led to lower frugal behavior. This relationship was significant, but with a small effect size; further research is needed to determine if this effect is maintained over time or if it occurs with other population groups. Finally, given the importance of the economic dimension, it would be interesting to analyze in detail the influence that might be exerted by an individual's economic and income level. However, our results did not provide clear evidence on how economic vulnerability, particularly low income, directly influences frugal behavior.

## 6. Conclusions

This study shows that an individual's identity influences frugal consumption patterns, which, in turn, is a key aspect of sustainability. A combination of moral, wasteful, and thrifty consumer identities and environmental self-identity explained 47.9% of the variance in frugal behavior, stressing the importance of understanding how people view themselves, both as individuals and as consumers, in order to more effectively engage and maintain long-term sustainable frugal actions. With a view toward changing consumption patterns, our results reveal the possible limitations of focusing exclusively on the normative-moral aspects related to consumption. When promoting personal frugal consumption practices, it is also necessary to take into account the economic and cost-saving dimensions related to this type of consumption. Similarly, strategies promoting frugal consumption that target the activation of environmental self-identity may be more effective if also combined with the activation of the thrifty consumer identity.

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**Ethical Statement:** This research complied with the principles of the Helsinki Declaration for research with human beings. Informed consent was obtained from all participants and all data collected were processed with confidentiality, in accordance with Spanish data protection regulations.

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