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The Role of Value in Extending the Lifetime of Products: An Analysis of Perceived Value and Green Consumption Values on Pro-Circular Behaviors of Repair and Reuse

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Abstract: Promoting circular business models is a clear path to tackling current environmental and social issues. The success of these models depends not only on companies in charge of creating new products, processes, and models that include circular strategies but also on consumers and their choices. Thus, fully understanding consumers and the factors that influence accepting and adopting practices towards circularity is imperative. One of these factors is the relationship that consumers have with the products they purchase and their assessment of these products through the concept of perceived value. This research aimed to explore the relationship between the dimensions of perceived value (i.e., functional, emotional, and social) and pro-circular behaviors of repair and reuse, as well as the role of green consumption values in this relationship. A representative sample of 417 people was surveyed in Medellín (Colombia). Using an Ordinal Logit model, we tested the hypotheses proposed. Findings reveal that functional value is a primary starting point to encourage behaviors aiming to extend the lifetime of products. Moreover, the interaction between sources of value (perceived value and green consumption values) increases the probability of reusing and repairing. Based on these and other relevant results, managerial implications and opportunities for future research are proposed.

Keywords: perceived value; green consumption values; pro-circular behaviors; repair; reuse; circular economy

Citation: Arias, C.; Cadena Lozano, J.B.; Bello Bernal, M.A. The Role of Value in Extending the Lifetime of Products: An Analysis of Perceived Value and Green Consumption Values on Pro-Circular Behaviors of Repair and Reuse. *Sustainability* **2024**, *16*, 1567. https://doi.org/10.3390/su16041567

Academic Editor: Colin Michael Hall

Received: 27 December 2023
Revised: 25 January 2024
Accepted: 2 February 2024
Published: 13 February 2024

1. Introduction

Environmental issues demanded new perspectives from several actors to tackle them. One of these perspectives is to change from a linear economic model, "take-make-use-dispose", to a circular economy. This change requires all market participants' awareness, knowledge, and engagement [1]. Particularly, businesses and consumers are the two main actors involved in the causes and the solutions of environmental problems because of their production decisions and consumption choices. Thus, both companies and consumers may act together through circular business models. These models are defined as those that use innovation to create, deliver, and capture value to improve resource efficiency and continually reuse products and materials by extending the lifespan of products and by reducing waste, where possible, thereby achieving environmental, social, and economic benefits [2,3].

The success of these models depends not only on companies in charge of creating new products, services, processes, and models that include circular strategies but also on consumers and their choices (e.g., the number of products they buy, the openness to accept products with circular attributes and new business models, how they deal with used products, and adopt pro-circular behaviors) [1]. Thus, the consumer is a key player and an essential piece in achieving the goals of circular economy models [4]. Considering the perspectives of consumers, as those who acquire and use products, as well as understanding all the factors involved in their consumption decisions, is crucial to promoting

and implementing these circular business models [5–7]. One of these factors is consumers' relationship with the products they purchase based on the concept of perceived value.

The concept of consumer's perceived value, first proposed in marketing research, was defined as "consumer's overall assessment of the utility of a product (or service) based on perception of what is received and what is given" [8] (p.4). Value is the expression of fundamental desires and goals that consumers want to gain [9]. Hence, this concept is considered an essential constituent of relationship marketing and the primary basis for consumer behavior associated with purchasing [10]. Thus, the role of perceived value was oriented to understanding the acquisition phase in the consumption stages. Nevertheless, the new demands and needs for sustainable products and sustainable business models (e.g., circular business models) drive a more holistic perspective from marketing in which other behaviors beyond purchase ones must be analyzed to be promoted (e.g., pro-circular behaviors). The role of marketing in circular business models could be multifaceted and is crucial for the success and adoption of circular economy practices. To accomplish this, gaining a more comprehensive understanding of consumers and the variables that influence their relationship with this kind of behavior is imperative. This research aims to contribute to this goal by exploring the role of perceived value in adopting pro-circular behaviors. To the best of our knowledge, little research addressed this relationship.

From the initial but valuable literature on consumer and circular behaviors, previous research emphasized the relevance of performing analyses oriented to groups of similar behaviors or specific actions for specific products [5]. Among the different circular business models, those focused on practices that aim to extend the useful life of products were pointed out as crucial within a circular economy [11]. The previous literature mainly suggests reusing and repairing behaviors as desirable options because of their potential to reduce the environmental impact across the whole value chain [6,12]. In line with this perspective, the first objective of this research is to examine the role of perceived value in adopting reusing and repairing behaviors. It does this through the lens of two product categories: furniture and clothing. These categories are identified by their environmental impact and importance in everyday life [13].

As already mentioned, perceived value is the primary basis for consumer behavior associated with purchasing [10]. Nevertheless, the prior literature pointed out that there could be other sources of value in a consumption experience [14]. Because we explored behaviors that, by definition, avoid the acquisition and are essential in other stages of consumption (i.e., repairing and reusing), we involved green consumption values as another source of value, stating the second objective of our study: to analyze their role in the relationship between perceived value and pro-circular behaviors. By accomplishing this, we contribute to the current literature on marketing and sustainability by addressing a comprehensive analysis that establishes the influence of products' perception in adopting practices aiming at their circularity and the interaction between products' evaluation and environmental considerations in pro-circular behavior. This approach could be valuable in defining more effective strategies and initiatives, from marketing to promoting circular business models.

The remainder of this paper is structured as follows. Section 2 presents the theoretical framework and definition of the hypotheses. Section 3 shows the methodology used to collect and analyze data. Section 4 presents the main findings of the study, involving descriptive results and hypotheses testing. Section 5 discusses the theoretical implications of the study, including opportunities for future research. Finally, we provide concluding remarks with managerial implications and acknowledge the study's limitations.

2. Theoretical Framework

2.1. Perceived Value, Sustainability, and Circularity

Perceived value is a subjective assessment that a consumer makes about a product or service's worth or benefit [15]. This assessment derives from the trade-off between benefits and sacrifices where the customers interact with a particular good [16]. The benefits involve

extrinsic and intrinsic attributes of the product, and sacrifices are related to perceived costs, including monetary and non-monetary aspects [17–22].

Perceived value is conceptualized as a multidimensional construct [22–24]. Initially, Sheth et al. [23] proposed the Theory of Consumption Value including five dimensions (functional, emotional, social, epistemic, and conditional): functional value relates to the tangible benefits and utility a product or service provides; emotional value is associated with the feelings, emotions, and psychological benefits that a product or service can evoke, including actions against the product; social value refers to benefits derived from an association with reference groups (e.g., a person's social image, standing, relationships, or identity); epistemic value is about the novelty aspect of a product involving the knowledge and information the product or service imparts [21]; conditional value is tied to situational factors and consider how the context, timing, and circumstances affect the perceived worth of a product [21]. After that, Sweeney and Soutar [22] developed a perceived value measurement scale (PERVAL) based on functional value, emotional value, and social value. This scale is considered valid, parsimonious, reliable, and well-accepted [18,21,24]. The scale omits conditional and epistemic values as these are different values considered less critical to a general value measure [21]. Hence, several studies analyzed the product's perceived value under the three fundamental dimensions of functional, emotional, and social values [21,24,25]. This study agrees with this approach, considering these three dimensions to be a suitable framework for exploring the relationship between perceived value and pro-circular behaviors.

Numerous studies have explored the relationship between perceived value and sustainable considerations. For example, researchers investigated how consumers' perceptions of the value of environmental products influence their intentions and decisions to engage in pro-environmental behaviors (e.g., recycling, reducing energy consumption, choosing eco-friendly transportation options) [26–28]. Some studies examined how consumers perceive the value of eco-friendly products compared to conventional ones and the willingness to pay a premium for environmentally responsible products [29–32]. Another perspective analyzes the factors influencing consumers' valuation (e.g., attitudes, values, and environmental beliefs) [33]. Previous research also studies how the perceived value of environmentally friendly products can be affected by how consumers perceive the quality and performance of these products compared to non-sustainable alternatives [34].

Notably, the research on the relationship between perceived value and the circular economy explored how consumers perceive products designed for circularity, such as products made from recycled materials or items that are reused, refurbished, easily repairable, and recyclable [35–37]. This research venue often found consumers to be concerned with and possess low trust in these products [38]. Some research investigated how circular business models (e.g., product-as-a-service and take-back schemes) and products with circular attributes influence perceived value and consumer adoption of circular practices [39,40]. Finally, little research looks at whether the perceived value of contributing to a circular economy influences consumers' willingness to repair, recycle, share items with others, or resell products [41,42].

Although some research addressed the role of perceived value in the acceptance of circular business models [34,37,40] and the adoption of green products [26–28,34], most of this research focused on sustainable purchase intentions and behaviors. One possible reason is that the role of perceived value was oriented toward understanding the acquisition phase in the consumption stages. However, the new demands and needs for sustainable products and sustainable business models (e.g., circular business models) drive a more holistic perspective from marketing in which other behaviors beyond purchase must be analyzed to be promoted. To the best of our knowledge, little research analyzed how a construct primarily related to purchase, like perceived value, could impact the adoption of pro-circular behaviors. Moreover, the previous literature referred to the impact of circular attributes on perceived value [39]. However, the opposite direction has yet to be addressed: the effect of perceived value on circular behaviors.

2.2. Pro-Circular Behaviors, Perceived Value, and Green Consumption Values

Pro-circular behaviors can be defined as those consumer behaviors necessary in a circular economy [43]. These behaviors are framed in different Rs (e.g., reuse, recycle, reduce, recover, remanufacture, and redesign) [4]. From a sustainability perspective, pro-circular behaviors are linked to all consumption decisions (i.e., purchasing, product use, and final disposal) [43,44]. For instance, renting is a behavior that supports circular business models in the initial stage (i.e., purchase); meanwhile, repairing and reusing could be associated with the product-use stage. Resale and recycling, through return or devolution schemes, are most related to the end of the useful life that a product could have for a consumer (i.e., final disposal stage) [5].

Even though pro-circular behaviors in all stages of consumption are desirable, those practices focused on extending the lifespan of products were identified as crucial because of the potential positive environmental impact they could have on the whole value chain. Therefore, in this research, we consider pro-circular behaviors of repair and reuse and define these as follows: repair consists of putting back into operation a product that has ceased to serve its original purpose [11,45], and reuse consists of putting back into use a discarded product that is still in good condition and fulfills its original function [11,45].

We explore the role of perceived value on these pro-circular behaviors without modifying the functional, emotional, and social dimensions with environmental attributes. That is because we want to analyze how impact has a robust purchase-related construct, like perceived value on behaviors that, by definition, avoid the acquisition and consider extending the life cycle of a product. Nevertheless, previous research found the imperative role of environmental identity, concern, and attitude in adopting sustainable behaviors, including circular ones [21]. In fact, some authors pointed out that there could be other sources of value that consumers may obtain besides other types of value in a consumption experience [14]. Thus, we want to analyze the role of environmental values (a different source of value besides the product) as a moderator in the relationship between perceived value and pro-circular behaviors. We chose specific values focused on sustainable consumption, considering them closer to the purpose of this study. These values are defined under the construct of green consumption values.

The construct of green consumption values was introduced by Haws et al. [46], who defined it as "the tendency to express the value of environmental protection through one's purchases and consumption behaviors" (p. 2). Thus, consumption will be related to ethical choices that also consider the benefits for others (including the environment) besides the consumer's personal gains [47,48]. For example, consumers can avoid an early-end disposition (e.g., via reuse) or take disposal actions in their consumption focused on reducing waste and protecting natural resources (e.g., transferring the value of unused products to the next owners via resale) [42,46,49].

2.3. Hypotheses' Development

Previous research on perceived value highlighted the importance of the three dimensions (e.g., functional, emotional, and social) in purchase-related behaviors. For example, in the social commerce context, functional, emotional, and perceived social values significantly and positively affect purchase intention [50–57]. Also, all perceived value dimensions in luxury consumption were identified as critical in the consumer decision-making process [58,59]. Even in sustainability research, most of the studies suggested the importance of perceived value in green purchase intentions and behaviors [60–62].

Mainly, emotional value is a unique subjective emotion consumers feel in response to purchasing and using the product [10]. Therefore, previous research found that emotional value had positive effects directly on purchasing intentions or behavior [10,61] or indirectly on customer satisfaction [22,63], which increases the overall evaluation of the product/service [22] and, consequently, purchase and continuance intentions and behaviors [49,61,64,65]. Thus, feelings of joy and fun in consumption have a greater impact on consumers' choices [66]. Because of these findings, we reason that when people

experiment with positive feelings and emotions toward purchase behavior, they will not perform other behaviors that avoid shopping or the acquisition of products (e.g., repairing and reusing). Thus, we hypothesized that

H1. *The emotional perceived value of the product will have a negative relationship with pro-circular behaviors of reusing and repairing.*

The story is similar to perceived social value. Previous research pointed out how the more social value users obtain from using social commerce sites, purchasing a particular product (e.g., luxury items), or just acquiring branded goods, the more satisfaction and purchase intention they will develop [50,67,68]. Hence, we believe that when individuals appreciate the social consequences of purchase (e.g., individual's image, social status, recognition or approval from others), they do not want to lose those social benefits of acquiring products, so this perceived social value will have negative implications in practices that discourage purchasing, such as repairing or reusing items. Even consumers may worry that they cannot gain social approval because of certain features of circular products [10] (e.g., reused or repaired items), therefore obtaining low social value from these products. For instance, previous research on circular business models referred to the negative stigma attached to repair as a barrier to adopting this practice. Often, repaired products are associated with economic hardship and poverty, discouraging consumers from repairing and using repaired products (see Terzioğlu [7]). Hence, we propose the following hypothesis.

H2. *The perceived social value of the product will have a negative relationship with pro-circular behaviors of reusing and repairing.*

As mentioned, functional value positively affects purchase intentions and behaviors, even sustainable ones [60,61]. However, the scarce research on functional value and circular behaviors offers an additional perspective in which the product's utilitarian properties, features, and attributes could positively affect repairing and reusing behaviors. For instance, previous research on perceived value and repairing pointed out how functional value could motivate consumers to repair. The properties of products that fulfill the users' practical needs (i.e., functional attributes) are often important because some products are needed every day [7]. In addition, people could be discouraged from repairing products manufactured with low-quality materials or to last for a limited time; conversely, product endurance is considered a motivation to repair [7]. This idea fits with a great functional perceived value that covers good quality, endurance, good functional attributes, and an excellent cost–benefit relationship. So, we hypothesized that

H3. *The functional perceived value of the product will have a positive relationship with the pro-circular behavior of repairing.*

In addition, the previous literature mentioned that "if a product is functional, beautiful, and valuable, all at once, consumers will not want to throw it, but make optimal use of it" [69] (p. 4). Conversely, a barrier to reusing is the quality and durability of products and packaging [1]. Thus, some authors pointed out strategies such as increasing durability and improving care and maintenance as crucial for longer product lifetimes [70].

Under this reasoning, products' functional attributes could help used products retain value, motivating their reuse. So, we hypothesized that

H4. *The functional perceived value of the product will have a positive relationship with the pro-circular behavior of reusing.*

On the other hand, green consumption values are related to different constructs (e.g., environmental concerns). Previous research pointed out environmental concerns as a motivation to repair. It seems that the awareness of the damage that discarding a product

causes to the environment leads consumers to reduce such damage by repairing it [7] (p. 8). Thus, different studies found positive relationships between people's concerns about environmental issues and the frequency of repairing [41,71]. Based on these ideas, we proposed the following hypotheses:

H5. *The positive relationship between perceived functional value and repairing would be stronger (vs. weaker) for those consumers with high (vs. low) green consumption values.*

H6. *The negative relationship between perceived emotional/social values and repairing would be stronger (vs. weaker) for those consumers with low (vs. high) green consumption values.*

Similarly, the previous literature referred to consumers who reuse and choose reusable products as those influenced by environmental concerns about the consequences of waste [72], so their reusing behaviors are value-based [1]. Likewise, "previous studies have found that consumers with a high level of green consumption values are aware of their purchase practices that protect the environment through sustainable resale behavior" [42] (p. 4). These consumers take care of the products while using them, motivated to preserve the quality and then be able to resell those items, to be environmentally responsible consumers [73]. As reselling behavior aims to extend the lifetime of a product (like reusing behavior), we propose a similar effect of green consumption values on reusing behavior. In addition, some studies pointed out that consumers' environmental consciousness influenced reusing behaviors like donating clothing [74].

Thus, we hypothesized that

H7. *The positive relationship between perceived functional value and reusing would be stronger (vs. weaker) for those consumers with high (vs. low) green consumption values.*

H8. *The negative relationship between perceived emotional/social values and reusing would be stronger (vs. weaker) for those consumers with low (vs. high) green consumption values.*

3. Materials and Methods

3.1. Population and Sample

This research was developed in Medellín, Colombia. This city is recognized as the Latin American Capital of Electric Mobility [75,76], being an ecocity with intelligent urban equipment models, green spaces, and efficient waste management systems. There, we focused on the population of neighborhoods (Comunas) with a medium- to high-level quality of life (based on the Quality-of-Life Index (QLI)) [77]. These neighborhoods belong to the city's socioeconomic levels 3, 4, 5, and 6. The population in these neighborhoods was delimited by age (between 25 and 60 years old). A sample of this population was selected through stratified sampling according to the weight (percentage) of each neighborhood represented in the city population and applying the criteria and statistical developments determined by the literature [78].

Data were collected through a survey that covered several factors related to pro-circular consumption. This survey was programmed and distributed by a market research company to a sample of 417 people belonging proportionally to the neighborhoods previously defined. The panel of participants should have purchasing and consumption power over the products on which their behaviors would be evaluated (in this case, furniture and clothing). Of the sample, most respondents were female (59%), between 25 and 60 years of age (mean = 41 years). Most participants were single (37%), followed by married (34%), and 80.9% lived in socioeconomic strata 3 or 4. Likewise, most were employed (57%), followed by self-employed (30%), and 41% had a professional education level. Regarding their monthly income, 75% earned between COP 1,000,000 and COP 5,000,000; additionally, 53% lived in an apartment and 41% in a house. (See other sociodemographic details of the sample in the descriptive results for each behavior).

3.2. Variables and Measuring Instrument

3.2.1. Dependent Variables

As we mentioned before, we focused on two behaviors that aim to extend the useful life of products: repairing and reusing. These behaviors (our target variable) were measured using the scale proposed by Diddi and Yan [41]: this scale measures the frequency level with 5 points (1 never; 5 always). The specific items used to operationalize each behavior according to the products analyzed were "How often do you repair your furniture (e.g., chairs, tables, desks) instead of buying new ones?"; "How often do you repair your clothes instead of buying new ones; "How often do you reuse your furniture (e.g., chairs, tables, desks); How often do you reuse your clothing".

3.2.2. Independent Variables

As previously explained in the theoretical framework, we explored the role of perceived value and its three dimensions (functional, emotional, and social values) as explanatory variables. We measured perceived value using the scale proposed by Saura and Vivó [79], involving 10 items (5 for functional value, 3 for emotional value, and 2 for social value). A Likert scale with four points measuring the level of agreement (1. Strongly disagree, 2. Disagree, 3. Agree, 4. Strongly agree). As shown in Appendix A, these items were adapted to the products evaluated.

3.2.3. Moderator Variable

We explored the role of green consumption values in the relationship between perceived value and pro-circular behaviors. This variable was measured using the scale proposed by Haws et al. [46], involving six items and a Likert scale with four levels of agreement (1. Strongly disagree, 2. Disagree, 3. Agree, 4. Strongly agree) (See Appendix A).

3.2.4. Control Variables

As control variables, we involved two specific factors that previous research pointed out as positively associated with the pro-circular behaviors under study (i.e., repairing and reusing) [5]: Moral Norms and Specific Perceived Consumer Effectiveness. Moral norms refer to the commitment to act correctly, representing an obligation the individual feels to behave consistently in favor of the environment [80]. This variable was measured using the scale proposed by Vining and Ebreo [81], which measures the level of agreement (1. Strongly disagree, 2. Disagree, 3. Agree, 4. Strongly agree) against three items ("I feel a strong obligation to..."; "I would feel guilty if..."; "I am willing to go the extra mile for..."). We adapted these items to the behaviors evaluated. On the other hand, perceived consumer effectiveness is the degree to which consumers believe that their actions can make a difference [82,83], achieving an environmental objective or solving an environmental problem [84]. We measured specific PCE for each behavior evaluated by adapting the scale proposed by Ellen et al. [82]. Appendix A shows the details of the items used to operationalize these variables.

In addition, as control variables, we considered the sociodemographic factors that were previously used in studies on pro-environmental and pro-circular behaviors (e.g., gender, age, marital status, socioeconomic status, occupation, educational level, income level, and type of housing).

In constructing variables, careful consideration was given to Cronbach's Alpha, the most commonly used criterion to evaluate the internal consistency of the items of a construct [85]. Table A1 shows that the lower Cronbach's Alpha values were from 0.6 to 0.7. These figures align with the threshold of acceptability, especially when accompanied by a corrected item-total correlation exceeding 0.3, as suggested by Ursachi et al. [85] and Raharjanti et al. [86]. Thus, the Cronbach's alpha values obtained demonstrated the reliability and internal consistency of the scales used [86,87]. (See Appendix A to see the details of the variables, items, and scales used, as well as Cronbach's alpha for each variable)

3.3. Analysis Procedure

The Ordinal Logit model was implemented to address the relationship between predictor or independent variables and the ordinal scale of the response variable, recognized for its suitability in cases where the dependent variable has multiple ordered levels. The Ordinal Logit model is also known as the proportional odds model, and another popular option is known as the stereotype model. Ordered logit models were derived, starting with a binary logit model and generalizing it to allow for more than two outcomes [87].

Four models were specified to examine the relationship, with the dependent variable being repairing and reusing behaviors associated with furniture and clothing products. These variables are ordinal with five categories, where the lowest category represents "Never" and the highest "Always". Independent variables include perceived values for each product from a functional, emotional, and social perspective. The moderating variable is the Green Consumption Value Index, and control variables are associated with the norms index for each behavior and product, the Specific Perceived Consumer Effectiveness (SPCE) associated with each behavior, and sociodemographic variables such as age, gender, social stratum, income level, education level, occupation, marital status, and type of housing.

Additionally, quantitative variables (perceived values, values index, and norms index) were normalized to allow for comparison and interpretation, as their values are constrained between 0 and 1. The stepwise methodology followed by Nordberg [88] and Soroush et al. [89] was implemented to determine significant control variables in the model. This methodology considers the correlation between variables and helps select those that significantly contribute to explaining the dependent variable.

For the four behaviors analyzed, two models were estimated to deepen the understanding of the dynamics between independent variables associated with perceived values. In the first model, the Green Consumption Value Index is incorporated as a control variable to fine-tune or nullify its effects on the relationship between the independent variables of perceived values and the dependent variable of behaviors. This inclusion aims to mitigate any potential confounding influences arising from the Green Consumption Value Index, thereby refining the examination of how the perceived values of individuals correlate with their behavioral patterns. In the second model, the green consumption value index was included as a moderating variable and its interaction with perceived values, following the methodology proposed by Saunders [90], Sharma et al. [91], and Dawson [92]. This approach explored its role in the relationship between predictor variables and the ordinal response through a two-way interaction. This approach allowed a comprehensive and differentiated evaluation of the impact of the variables of interest on the studied phenomenon by calculating probabilities for the "Always" response category.

4. Results

4.1. Descriptive Statistics

We summarized the main descriptive and inferential findings associated with quantitative variables (e.g., Perceived Value Index, Green Consumption Value Index, and Moral Standards Index, which take values between 1 and 4 based on their response scale) and qualitative variables (e.g., Specific Perceived Consumer Effectiveness and some sociodemographic variables) for each behavior. These findings are based on calculating frequencies, column percentages, mean, and standard deviations for each behavior. The means are presented for quantitative variables, and their standard deviations are in parentheses; for qualitative variables, the frequency and column percentage are in parentheses.

The likelihood ratio test was used to analyze the association between qualitative independent variables and response variables associated with the behaviors of each product. The linear regression test was also employed to analyze the difference between the means of k samples for quantitative variables. The P-value of these tests is presented in the last column of the tables. The control variables that were not statistically significant from the univariate analysis will only be removed from the ordinal logistic regression model once the multivariate validation process by steps is completed.

All the behaviors analyzed present similar descriptive results. People repair and reuse occasionally and often; functional perceived value exhibits the highest mean, and green consumption values increase as people reuse and repair with more frequency (both categories), suggesting the importance of this variable to behave in a pro-circular way. Moreover, environmental values, the perception of the effectiveness of repairing and reusing behaviors to solve environmental issues, and the personal feeling of doing the right thing when repairing and reusing are essential variables affecting people's pro-circular behaviors that extend the lifespan of furniture and clothing products. We detailed the descriptive statistics for each behavior below.

4.1.1. Repair Furniture

We found that most people in the sample repair furniture occasionally (39.33%) and often (32.37%). Table 1 shows that the functional value has the highest average (3.16), and the social value has the lowest (2.19). Regarding the Green Consumption Value Index, it is observed that the average increases as one moves up the scale, going from 2.94 for the "never" option to 3.45 for the "always" option. This result suggests that consumers with more environmental values towards consumption repair with more frequency (see Table 1).

Table 1. Descriptive statistics (significant results for repairing behavior; furniture category).

	How Often Do You Repair Your Furniture (e.g., Chairs, Tables, Desks) Instead of Buying New Ones?						
	Never	**Rarely**	**Occasionally**	**Often**	**Always**	**Total**	**Test (*p*-Value)**
n	18.00 (4.32%)	51.00 (12.23%)	164.00 (39.33%)	135.00 (32.37%)	49.00 (11.75%)	417.00 (100.00%)	
Emotional Value	3.20 (0.69)	2.83 (0.53)	2.78 (0.54)	2.68 (0.62)	2.69 (0.78)	2.76 (0.61	**0.01**
Functional Value	2.99 (0.54)	3.06 (0.48)	3.09 (0.32)	3.19 (0.39)	3.49 (0.37)	3.16 (0.40)	**<0.00**
Social Value	2.03 (0.83)	2.23 (0.64)	2.18 (0.72)	2.18 (0.78)	2.28 (1.08)	2.19 (0.78)	0.82
Green Values	2.94 (0.64)	3.05 (0.47)	3.11 (0.50)	3.29 (0.50)	3.45 (0.50)	3.19 (0.52)	**<0.00**
Moral Norm	2.22 (0.63)	2.58 (0.62)	2.83 (0.43)	3.12 (0.44)	3.52 (0.47)	2.95 (0.56)	**<0.00**
SPCE							
I strongly disagree	2.00 (11.11%)	1.00 (1.96%)	3.00 (1.83%)	2.00 (1.48%)	1.00 (2.04%)	9.00 (2.16%)	**<0.00**
I disagree	7.00 (38.89%)	7.00 (13.73%)	19.00 (11.59%)	4.00 (2.96%)	2.00 (4.08%)	39.00 (9.35%)	
I agree	8.00 (44.44%)	36.00 (70.59%)	115.00 (70.12%)	94.00 (69.63%)	12.00 (24.49%)	265.00 (63.55%)	
I strongly agree	1.00 (5.56%)	7.00 (13.73%)	27.00 (16.46%)	35.00 (25.93%)	34.00 (69.39%)	104.00 (24.94%)	
Marital Status							
Single	6.00 (33.33%)	26.00 (50.98%)	59.00 (35.98%)	46.00 (34.07%)	19.00 (38.78%)	156.00 (37.41%)	**0.06**
Married	7.00 (38.89%)	11.00 (21.57%)	56.00 (34.15%)	49.00 (36.30%)	20.00 (40.82%)	143.00 (34.29%)	
Free union	4.00 (22.22%)	12.00 (23.53%)	34.00 (20.73%)	26.00 (19.26%)	10.00 (20.41%)	86.00 (20.62%)	
Widowed	1.00 (5.56%)	0.00 (0.00%)	2.00 (1.22%)	0.00 (0.00%)	0.00 (0.00%)	3.00 (0.72%)	
Other	0.00 (0.00%)	2.00 (3.92%)	13.00 (7.93%)	14.00 (10.37%)	0.00 (0.00%)	29.00 (6.95%)	
Level of studies							
Primary	0.00 (0.00%)	0.00 (0.00%)	1.00 (0.61%)	0.00 (0.00%)	0.00 (0.00%)	1.00 (0.24%)	**0.06**
Secondary	1.00 (5.56%)	2.00 (3.92%)	5.00 (3.05%)	7.00 (5.19%)	3.00 (6.12%)	18.00 (4.32%	
Technical	0.00 (0.00%)	2.00 (3.92%)	24.00 (14.63%)	13.00 (9.63%)	5.00 (10.20%)	44.00 (10.55%)	
Technological	4.00 (22.22%)	7.00 (13.73%)	30.00 (18.29%)	19.00 (14.07%)	5.00 (10.20%)	65.00 (15.59%)	
Professional	4.00 (22.22%)	26.00 (50.98%)	70.00 (42.68%)	50.00 (37.04%)	20.00 (40.82%)	170.00 (40.77%)	
Specialization	8.00 (44.44%)	9.00 (17.65%)	26.00 (15.85%)	33.00 (24.44%)	16.00 (32.65%)	92.00 (22.06%)	
Master's Degree	1.00 (5.56%)	5.00 (9.80%)	6.00 (3.66%)	10.00 (7.41%)	0.00 (0.00%)	22.00 (5.28%)	
PhD	0.00 (0.00%)	0.00 (0.00%)	2.00 (1.22%)	3.00 (2.22%)	0.00 (0.00%)	5.00 (1.20%)	
Type of housing							
House	5.00 (27.78%)	20.00 (39.22%)	69.00 (42.07%)	49.00 (36.30%)	29.00 (59.18%)	172.00 (41.25%)	**0.05**
Housing complex	1.00 (5.56%)	0.00 (0.00%)	6.00 (3.66%)	6.00 (4.44%)	2.00 (4.08%)	15.00 (3.60%)	
Apartment-complex	12.00 (66.67%)	31.00 (60.78%)	88.00 (53.66%)	75.00 (55.56%)	18.00 (36.73%)	224.00 (53.72%)	
Rural housing	0.00 (0.00%)	0.00 (0.00%)	1.00 (0.61%)	5.00 (3.70%)	0.00 (0.00%)	6.00 (1.44%)	

Note: **SPCE: Specific Perceived Consumer Effectiveness:** *By repairing my furniture (e.g., tables, chairs, desks), I can contribute to solving environmental problems.* Significant *p*-values in **bold.** Linear regression test performed for quantitative variables. Likelihood ratio test for qualitative variables.

From the likelihood ratio test, we observe that the covariables Specific Perceived Consumer Effectiveness—SPCE, marital status, education level, and type of housing showed

a significant association. As for the linear regression analysis, we observe that Perceived Emotional Value and Perceived Functional Value and the control variables of Green Consumption Values and Moral Norms (feeling of moral obligation to repair furniture) showed a significant mean difference. This indicates that they are essential variables affecting people's behavior when repairing furniture.

4.1.2. Repair Clothing

As Table 2 shows, most people repair clothing occasionally (33.09%) and often (29.98%). Like furniture repairing behavior, the functional value has the highest average (3.16), and the social value has the lowest (2.42). Regarding the Green Consumption Value Index, it is observed that the average increases as one moves up the scale, going from 2.84 for the "never" option to 3.61 for the "always" option. Thus, the more individuals exhibit environmental values towards consumption, the more they frequently repair their clothes (see Table 2).

Table 2. Descriptive statistics (significant results for repairing behavior; clothing category).

	How Often Do You Repair Your Clothes Instead of Buying New Ones?						
	Never	**Rarely**	**Occasionally**	**Often**	**Always**	**Total**	**Test (*p*-Value)**
n	33.00 (7.91%)	63.00 (15.11%)	138.00 (33.09%)	125.00 (29.98%)	58.00 (13.91%)	417.00 (100.00%)	
Emotional Value	3.38 (0.51)	3.18 (0.47)	3.05 (0.46)	2.88 (0.56)	2.83 (0.73)	3.02 (0.56)	**<0.00**
Functional Value	3.22 (0.46)	3.08 (0.33)	3.11 (0.35)	3.12 (0.38)	3.46 (0.43)	3.16 (0.40)	**<0.00**
Social Value	2.68 (0.91)	2.44 (0.72)	2.43 (0.81)	2.38 (0.79)	2.33 (1.08)	2.42 (0.84)	0.38
Green Values	2.84 (0.64)	3.08 (0.44)	3.09 (0.53)	3.26 (0.42)	3.61 (0.39)	3.19 (0.52)	**<0.00**
Moral Norm	2.04 (0.68)	2.44 (0.58)	2.71 (0.44)	3.07 (0.45)	3.51 (0.45)	2.84 (0.63)	**<0.00**
SPCE							
I strongly disagree	8.00 (24.24%)	2.00 (3.17%)	2.00 (1.45%)	1.00 (0.80%)	1.00 (1.72%)	14.00 (3.36%)	**<0.00**
I disagree	14.00 (42.42%)	21.00 (33.33%)	24.00 (17.39%)	6.00 (4.80%)	2.00 (3.45%)	67.00 (16.07%)	
I agree	9.00 (27.27%)	33.00 (52.38%)	92.00 (66.67%)	86.00 (68.80%)	18.00 (31.03%)	238.00 (57.07%)	
I strongly agree	2.00 (6.06%)	7.00 (11.11%)	20.00 (14.49%)	32.00 (25.60%)	37.00 (63.79%)	98.00 (23.50%)	
Gender							
Female	21.00 (63.64%)	42.00 (66.67%)	65.00 (47.10%)	83.00 (66.40%)	35.00 (60.34%)	246.00 (58.99%)	**0.01**
Male	12.00 (36.36%)	21.00 (33.33%)	73.00 (52.90%)	42.00 (33.60%)	23.00 (39.66%)	171.00 (41.01%)	

Note: **SPCE: Specific Perceived Consumer Effectiveness:** *By repairing my clothes instead of buying new ones, I can contribute to solving environmental problems.* Significant *p*-values in **bold.** Linear regression test performed for quantitative variables. Likelihood ratio test for qualitative variables.

In this case, we observe that Specific Perceived Consumer Effectiveness—SPCE and gender showed a significant association with clothing repairing behavior. Based on the linear regression analysis, we also observe that Perceived Emotional Value and Perceived Functional Value, as explanatory variables, and Green Consumption Values and Moral Norms, as control variables, showed a significant mean difference (see Table 2). This finding suggests that these variables significantly affect people's behavior when repairing clothes.

4.1.3. Reuse Furniture

Our results show that most people in the sample reuse their furniture often (38.61%) and occasionally (32.37%). As Table 3 shows, the functional value has the highest average (3.16), followed by the emotional value (2.76), and the social value with the lowest average (2.19). The average of the Green Consumption Values Index increases as one moves up the scale, going from 2.67 for the "never" option to 3.41 for the "always" option. In the same way as repairing, this finding suggests that consumers with more environmental values towards consumption are those who reuse their furniture more frequently (see Table 3).

Table 3. Descriptive statistics (significant results for reusing behavior; furniture category).

	How Often Do You Reuse Your Furniture (e.g., Chairs, Tables, Desks)?						
	Never	**Rarely**	**Occasionally**	**Often**	**Always**	**Total**	**Test (*p*-Value)**
n	13.00 (3.12%)	40.00 (9.59%)	135.00 (32.37%)	161.00 (38.61%)	68.00 (16.31%)	417.00 (100.00%)	
Emotional Value	3.13 (0.74)	2.84 (0.49)	2.83 (0.55)	2.65 (0.55)	2.77 (0.83)	2.76 (0.61)	**0.01**
Functional Value	2.98 (0.51)	3.04 (0.44)	3.08 (0.35)	3.13 (0.37)	3.48 (0.38)	3.16 (0.40)	**<0.00**
Social Value	2.15 (0.85)	2.21 (0.61)	2.19 (0.76)	2.19 (0.75)	2.18 (0.97)	2.19 (0.78)	1.00
Green Values	2.67 (0.57)	3.03 (0.41)	3.13 (0.51)	3.24 (0.49)	3.41 (0.53)	3.19 (0.52)	**<0.00**
Moral Norm	2.21 (0.67)	2.60 (0.43)	2.97 (0.34)	3.19 (0.44)	3.65 (0.39)	3.11 (0.52)	**<0.00**
SPCE							
I strongly disagree	2.00 (15.38%)	1.00 (2.50%)	0.00 (0.00%)	1.00 (0.62%)	1.00 (1.47%)	5.00 (1.20%)	**<0.00**
I disagree	1.00 (7.69%)	4.00 (10.00%)	10.00 (7.41%)	6.00 (3.73%)	1.00 (1.47%)	22.00 (5.28%)	
I agree	8.00 (61.54%)	28.00 (70.00%)	91.00 (67.41%)	82.00 (50.93%)	23.00 (33.82%)	232.00 (55.64%)	
I strongly agree	2.00 (15.38%)	7.00 (17.50%)	34.00 (25.19%)	72.00 (44.72%)	43.00 (63.24%)	158.00 (37.89%)	
Marital Status							
Single	4.00 (30.77%)	20.00 (50.00%)	57.00 (42.22%)	55.00 (34.16%)	20.00 (29.41%)	156.00 (37.41%)	**0.05**
Married	4.00 (30.77%)	6.00 (15.00%)	48.00 (35.56%)	55.00 (34.16%)	30.00 (44.12%)	143.00 (34.29%)	
Free union	3.00 (23.08%)	12.00 (30.00%)	20.00 (14.81%)	39.00 (24.22%)	12.00 (17.65%)	86.00 (20.62%)	
Widowed	1.00 (7.69%)	1.00 (2.50%)	1.00 (0.74%)	0.00 (0.00%)	0.00 (0.00%)	3.00 (0.72%)	
Other	1.00 (7.69%)	1.00 (2.50%)	9.00 (6.67%)	12.00 (7.45%)	6.00 (8.82%)	29.00 (6.95%)	

Note: **SPCE: Specific Perceived Consumer Effectiveness:** *By reusing my furniture (e.g., tables, chairs, desks), I can contribute to solving environmental problems.* Significant *p*-values in **bold.** Linear regression test performed for quantitative variables. Likelihood ratio test for qualitative variables.

Table 3 also shows that, from the likelihood ratio test, we observe that the covariables Specific Perceived Consumer Effectiveness—SPCE and marital status showed a significant association. As for the linear regression analysis, we observe that Perceived Emotional Value and Perceived Functional Value, as well as the control variables of Green Consumption Values and Moral Norms (feeling of moral obligation to reuse furniture), showed a significant mean difference. This finding indicates that they are essential variables affecting people's behavior when reusing furniture.

4.1.4. Reuse Clothing

We found that most people in the sample reuse clothing often (35.01%) and occasionally (28.06%). The functional value has the highest average (3.16), followed by the emotional value (3.02) and the social value (2.42) (see Table 4). Regarding the Green Consumption Value Index, it is observed that the average increases as one moves up the scale, going from 2.97 for the "never" option to 3.42 for the "always" option (see Table 4). Hence, the more consumers exhibit environmental values towards consumption, the more they frequently reuse their clothes.

Just as with repairing behavior, we observe that Specific Perceived Consumer Effectiveness—SPCE and gender showed a significant association with clothing-reusing behavior. We also observe that Perceived Emotional Value and Perceived Functional Value, as well as the control variables of Green Consumption Values and Moral Norms, showed a significant mean difference (see Table 4), indicating that they are essential variables affecting people's behavior when reusing clothing.

4.2. Hypotheses Testing

As explained in the methodology section, we implemented an Ordinal Logit model to test our hypotheses. We specified four models to examine the relationship between the three dimensions of perceived value (independent variables) and the repairing and reusing behaviors associated with furniture and clothing products (dependent variables). For the four behaviors, we estimated two models: In the first model, the Green Consumption Value Index was incorporated as a control variable to nullify its effects on the relationship between the independent variables of perceived values and the dependent variable of behaviors. In the second model, the Green Consumption Value index was included as a

moderating variable. This model tests the interaction between this variable and perceived values.

Table 4. Descriptive statistics (significant results for reusing behavior; clothing category).

	How Often Do You Repair Your Clothes Instead of Buying New Ones?						
	Never	**Rarely**	**Occasionally**	**Often**	**Always**	**Total**	**Test (*p*-Value)**
n	32.00 (7.67%)	47.00 (11.27%)	117.00 (28.06%)	146.00 (35.01%)	75.00 (17.99%)	417.00 (100.00%)	
Emotional Value	3.32 (0.54)	3.12 (0.50)	2.98 (0.49)	2.97 (0.55)	2.95 (0.67)	3.02 (0.56)	**0.01**
Functional Value	3.14 (0.46)	3.09 (0.43)	3.15 (0.32)	3.09 (0.37)	3.38 (0.43)	3.16 (0.40)	**<0.00**
Social Value	2.58 (0.91)	2.45 (0.69)	2.38 (0.80)	2.41 (0.82)	2.44 (1.01)	2.42 (0.84)	0.82
Green Values	2.97 (0.58)	3.07 (0.42)	3.10 (0.50)	3.24 (0.55)	3.42 (0.42)	3.19 (0.52)	**<0.00**
Moral Norm	2.20 (0.66)	2.65 (0.46)	2.86 (0.47)	3.21 (0.45)	3.56 (0.39)	3.04 (0.60)	**<0.00**
SPCE							
I strongly disagree	6.00 (18.75%)	0.00 (0.00%)	4.00 (3.42%)	1.00 (0.68%)	1.00 (1.33%)	12.00 (2.88%)	**<0.00**
I disagree	10.00 (31.25%)	13.00 (27.66%)	16.00 (13.68%)	11.00 (7.53%)	2.00 (2.67%)	52.00 (12.47%)	
I agree	16.00 (50.00%)	32.00 (68.09%)	83.00 (70.94%)	89.00 (60.96%)	24.00 (32.00%)	244.00 (58.51%)	
I strongly agree	0.00 (0.00%)	2.00 (4.26%)	14.00 (11.97%)	45.00 (30.82%)	48.00 (64.00%)	109.00 (26.14%)	
Gender							
Female	19.00 (59.38%)	28.00 (59.57%)	58.00 (49.57%)	86.00 (58.90%)	55.00 (73.33%)	246.00 (58.99%)	**0.03**
Male	13.00 (40.62%)	19.00 (40.43%)	59.00 (50.43%)	60.00 (41.10%)	20.00 (26.67%)	171.00 (41.01%)	

Note: **SPCE: Specific Perceived Consumer Effectiveness:** *By reusing my clothes, I can contribute to solving environmental problems.* Significant *p*-values in **bold.** Linear regression test performed for quantitative variables. Likelihood ratio test for qualitative variables.

Our first hypothesis was that the emotional perceived value of the product would have a negative relationship with reusing and repairing behaviors. The results support this hypothesis just for clothing repairing behavior. As Table 5 shows in Model 1, there is a negative and significant relationship between emotional value and clothing repairing behavior (Coef = −1.59; $p < 0.01$). Thus, as the perceived emotional value of the product increases, keeping the other variables constant, the probability of it being repaired decreases. We also stated a negative relationship between social value and repairing/reusing behaviors. However, this second hypothesis was not supported for any of the behaviors.

We found a positive relationship between functional value and repairing behaviors (Clothing: Coeff = 2.15; $p < 0.01$; Furniture: Coef = 3.08; $p < 0.01$) (See Tables 5 and 6). This supports H3. Hence, as the perceived functional value of the products (furniture and clothing) increases, keeping the other variables constant, the probability of them being repaired is higher. Functional value also has a positive effect on reusing (H4), but just for the furniture category (Coef = 1.74; $p < 0.05$), as Table 7 shows.

Regarding the moderator role of green consumption values, we found the following:

The interaction between functional perceived value and green consumption values was positive and significant for clothing repairing behavior (Coef = 9.09; $p < 0.05$), supporting the H5 for the clothing category (See Table 5, Model 2). As Table 5 shows, when green consumption values are taken as a moderating variable, the effect between perceived functional value and clothing repair behavior intensifies, especially for those with a high perceived functional value for their product (see Probability Outcomes for Functional Value). Thus, as the perceived functional value increases, the probability of always repairing also increases, even more so when green consumption values are present. The same occurs for reusing behavior for both categories. As we can see in Models 2 of Tables 7 and 8, the interaction between functional value and green consumption values was positive and significant for reusing behavior (Furniture: Coef = 7.40; $p < 0.1$; Clothing: Coef = 7.86; $p < 0.05$). This supports H7. Hence, when green consumption values are used as a moderating variable, the effect between perceived functional value and the reusing furniture/clothing behavior intensifies, especially for those with a high perceived functional value for their product (see Probability Outcomes in Tables 7 and 8, respectively). Thus, as

the perceived functional value increases, the probability of always reusing also increases, even more so when green consumption values are present.

Table 5. Hypotheses testing for repairing behavior: clothing category.

		Model 1			Model 2		
Variables	**Categories**	**Estimate**	**S.E**	**OR**	**Estimate**	**S.E**	**OR**
Perceived Emotional Value Index		−1.59 ***	0.60	0.20	1.73	2.19	5.63
Perceived Functional Value Index		2.15 ***	0.79	8.55	−4.09	2.86	0.02
Perceived Social Value Index		0.14	0.37	1.16	−3.67 **	1.48	0.03
Moral Norm Index		5.90 ***	0.66	364.25	5.89 ***	0.66	361.14
Specific Perceived Consumer Effectiveness	I disagree	0.62	0.66	1.86	0.87	0.67	2.39
	I agree	1.24 *	0.66	3.45	1.52 **	0.66	4.57
	I strongly agree	1.60 **	0.69	4.94	1.89 ***	0.71	6.64
Green Consumption Value Index		1.81 ***	0.59	6.11	−4.40	3.26	0.01
Emotional Value *Green Consump Values					−4.56	2.89	0.01
Functional Value *Green Consump Values					9.09 **	3.96	8828.08
Social Value *Green Consump Value					5.35 ***	1.99	210.85
	Observations	417			417		
	LR chi2	257.51			267.99		
	Prob > chi2	0			0		
	McFadden's r2	0.21			0.22		
Green Consumption Values Moderation details:							
Scenario		**Model 1**			**Model 2**		
Probability Outcomes of the "Always" response (Functional Value*Green Consumption Values)							
					Green Consumption Values Index = 1		
Perceived Functional Value Index = 0		0.042 *			0.009		
Perceived Functional Value Index = 0.25		0.065 ***			0.028		
Perceived Functional Value Index = 0.5		0.098 ***			0.079 ***		
Perceived Functional Value Index = 0.75		0.141 ***			0.189 ***		
Perceived Functional Value Index = 1		0.198 ***			0.365 ***		
Probability Outcomes of the "Always" response (Social Value*Green Consumption Values)							
					Green Consumption Values Index = 1		
Perceived Social Value Index = 0		0.135 ***			0.114 ***		
Perceived Social Value Index = 0.25		0.138 ***			0.147 ***		
Perceived Social Value Index = 0.5		0.141 ***			0.187 ***		
Perceived Social Value Index = 0.75		0.144 ***			0.234 ***		
Perceived Social Value Index = 1		0.147 ***			0.288 ***		
					Green Consumption Values Index = 0		
Perceived Social Value Index = 0		0.135 ***			0.168 *		
Perceived Social Value Index = 0.25		0.138 ***			0.088 **		
Perceived Social Value Index = 0.5		0.141 ***			0.042 **		
Perceived Social Value Index = 0.75		0.144 ***			0.019 *		

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

We found a significant interaction between perceived social value and green consumption values for repairing behavior, at least regarding the clothing category (Coef = 5.35; $p < 0.01$) (See Model 2 in Table 5). Here, the role of green consumption values is relevant. As Table 5 shows, when green consumption values are present, the effect between perceived social value and the behavior of repairing becomes significant and intensifies. Thus, as the perceived social value increases, the probability of always repairing also increases, even more so when green consumption values are present. For those who do not have green consumption values, the probability of always repairing decreases considerably as the perceived social value of the product increases (see Probability Outcomes for Social Value in Table 5). Because we did not find evidence for repairing in the furniture category, nor for emotional value in any category, these results partially support H6. Finally, there were no significant interactions between emotional/social values and reusing behavior, so H8 was unsupported.

Table 6. Hypotheses testing for repairing behavior: furniture category.

		Model 1			Model 2		
Variables	**Categories**	**Estimate**	**S.E**	**OR**	**Estimate**	**S.E**	**OR**
Perceived Emotional Value Index		−0.65	0.52	0.52	1.10	2.20	3.02
Perceived Functional Value Index		3.08 ***	0.83	21.73	−1.22	3.16	0.30
Perceived Social Value Index		0.63	0.41	1.87	0.98	1.53	2.66
Moral Norm Index		5.96 ***	0.65	386.34	5.91 ***	0.66	369.70
Socioeconomic status	4	0.05	0.21	1.05	0.02	0.21	1.02
	5	−0.31	0.28	0.73	−0.33	0.28	0.72
	6	1.17 ***	0.45	3.24	1.15 **	0.45	3.17
Green Consumption Value Index		0.92	0.58	2.52	−1.58	3.28	0.21
Emotional Value * Green Consump Values					−2.25	2.88	0.10
Functional Value * Green Consump Values					5.70	4.16	297.98
Social Value * Green Consump Values					−0.44	2.05	0.65
	Observations	417			417		
	LR chi2	174.47			177.13		
	Prob > chi2	0			0		
	McFadden's r2	0.15			0.15		

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 7. Hypotheses testing for reusing behavior: furniture category.

		Model 1			Model 2		
Variables	**Categories**	**Estimate**	**S.E**	**OR**	**Estimate**	**S.E**	**OR**
Perceived Emotional Value Index		−0.42	0.52	0.66	1.05	2.26	2.85
Perceived Functional Value Index		1.74 **	0.83	5.72	−3.78	3.25	0.02
Perceived Social Value Index		0.11	0.41	1.11	0.37	1.57	1.45
Moral Norm Index		8.25 ***	0.78	3830.28	8.19 ***	0.78	3603.84
Marital Status	Married	0.31	0.22	1.36	0.33	0.23	1.40
	Free union	0.26	0.26	1.30	0.27	0.26	1.32
	Widowed	−1.94 *	1.07	0.14	−1.86 *	1.06	0.16
	Other	0.68 *	0.38	1.98	0.65 *	0.38	1.92
Green Consumption Value Index		0.50	0.59	1.64	−3.54	3.40	0.03
Emotional Value * Green Consump Values					−1.87	2.98	0.15
Functional Value * Green Consump Values					7.40 *	4.27	1632.13
Social Value * Green Consump Values					−0.29	2.09	0.74
	Observations	417			417		
	LR chi2	215.13			218.73		
	Prob > chi2	0			0		
	McFadden's r2	0.19			0.19		
Green Consumption Values Moderation details:							
Scenario		**Model 1**			**Model 2**		
Probability Outcomes of the "Always" response (Functional Value*Green Consumption Values)							
					Green Consumption Value Index = 1		
Perceived Functional Value Index = 0		0.062 **			0.020		
Perceived Functional Value Index = 0.25		0.087 ***			0.046		
Perceived Functional Value Index = 0.5		0.121 ***			0.095 ***		
Perceived Functional Value Index = 0.75		0.162 ***			0.179 ***		
Perceived Functional Value Index = 1		0.212 ***			0.299 ***		

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 8. Hypotheses testing for reusing behavior: clothing category.

		Model 1			Model 2		
Variables	**Categories**	**Estimate**	**S.E**	**OR**	**Estimate**	**S.E**	**OR**
Perceived Emotional Value Index		−0.86	0.58	0.42	−1.09	2.21	0.34
Perceived Functional Value Index		0.75	0.79	2.11	−4.69 *	2.74	0.01
Perceived Social Value Index		0.11	0.38	1.12	−1.63	1.53	0.20
Moral Norm Index		6.19 ***	0.69	487.91	6.27 ***	0.70	529.34
Gender	Male	−0.29	0.19	0.75	−0.26	0.19	0.77
Specific Perceived Consumer Effectiveness	I disagree	0.86	0.70	2.35	0.85	0.70	2.35

Table 8. *Cont.*

		Model 1			Model 2		
Variables	**Categories**	**Estimate**	**S.E**	**OR**	**Estimate**	**S.E**	**OR**
	I agree	0.86	0.67	2.36	0.89	0.67	2.43
	I strongly agree	1.79 **	0.70	5.99	1.80 **	0.70	6.07
Green Consumption Value Index		0.57	0.58	1.77	−6.61 **	3.10	0.00
Emotional Value Index * Green Consump Values					0.37	2.87	1.45
Functional Value Index * Green Consump Values					7.86 **	3.72	2581.70
Social Value Index * Green Consump Values					2.47	2.04	11.86
	Observations	417			417		
	LR chi2	227.21			232.89		
	Prob > chi2	0			0		
	McFadden´s r2	0.18			0.19		

Green Consumption Values Moderation details:		
Scenario	**Model 1**	**Model 2**
Probability Outcomes of the "Always" response (Functional Value * Green Consumption Values)		
		Green Consumption Value Index = 1
Perceived Functional Value Index = 0	0.125 **	0.033
Perceived Functional Value Index = 0.25	0.142 ***	0.065 **
Perceived Functional Value Index = 0.5	0.160 ***	0.118 ***
Perceived Functional Value Index = 0.75	0.179 ***	0.197 ***
Perceived Functional Value Index = 1	0.200 ***	0.301 ***

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5. Discussion

This research aimed to explore the relationship between the three dimensions of perceived value (e.g., functional, emotional, and social) and pro-circular behaviors of repairing and reusing, as well as the role of green consumption values in this relationship. We operationalized repairing and reusing behaviors in two product categories: clothing and furniture. Most marketing and circular economy studies focused on analyzing perceived value's role in the acquisition or purchase phase. Thus, this study contributes to a more holistic perspective by proposing an analysis oriented to understanding how perceived value could influence the adoption of other behaviors focused on the products' life-span extension, such as repair and reuse. This approach is worth it, not only to add to the few studies focused on the consumer as an essential actor in the circular economy but also to guide future research and marketing strategies toward promoting circular business models as one of the clear paths to tackle environmental and social issues. Ordinal logit models were implemented to test our hypotheses.

We proposed that emotional and perceived social values were negatively related to pro-circular behaviors of repairing and reusing. The hypothesis on emotional value was supported for the clothing category in repairing behavior. Thus, the emotional value of buying clothes affected consumers' clothing repairing behaviors negatively. Previous studies indicate that the likelihood of repairing clothes increases when people have a personal connection with such clothes [93,94]. In addition, the consumers' experiential relationship with clothing during its use phase determines how clothing is cared for, maintained, and repaired [41]. Hence, the attachment and love to clothes as a way of emotional value could encourage repairing behaviors [71,93]. These findings indicate that such emotional value should be oriented to highlight positive feelings during the use phase. Otherwise, as our results suggest, focusing on the emotional value of buying clothes will be in contrast to clothing repairing behaviors. We did not find support regarding emotional value and clothing reusing behavior. It seems that positive feelings involved in buying clothes (e.g., joy, liking) have nothing to do with wanting to extend the life span of this kind of product via reusing. Some studies find consumers enjoying shopping experiences related to pro-circular behaviors like buying secondhand clothing [95]; more research on

these practices will be needed to understand the relationship between emotional perceived value and reusing behaviors.

Results about furniture were different, and the corresponding hypotheses were not supported. Little research on furniture pointed out that life stages (e.g., marriage, parenthood, home purchase, career advancement) trigger furniture purchases [13], so people were expected to enjoy furniture shopping and prefer this behavior instead of repairing or reusing those items. Nevertheless, it seems that the emotional value of buying furniture has nothing to do with wanting to extend the life span of these products via repairing and reusing. Probably, because our sample had a median age of around 40, and "household furniture consumption involves a much longer time horizon than many other consumer goods" [13] (p. 26), they have not had the opportunity to see aging their furniture, so reusing/repairing decisions were not needed until now. However, as we suggested for clothing, emotional value focused on positive feelings and emotions during the use phase could also be enhanced for the furniture category. As research pointed out, furniture purchases could be driven by consumers' emotional needs [13]. Furniture pieces are valued by the memories of people, occasions, and relationships those items aroused [96], even becoming an extension of the self [97]; fostering this emotional perceived value during the use of furniture could be helpful to promote business models oriented to repairing and reusing behaviors.

Regarding the social value, our findings do not support the hypotheses proposed. The current environmental and social issues changed the mindset of several people concerned about these problems. The image people want to show to others may be more pro-social and eco-friendly. So, even though social approval is important for consumers, this approval may change to another kind of behavior (e.g., green purchase and donating behaviors [98]). In fact, social norms are one of the main factors to act pro-environmentally [99,100]. However, it seems that the social benefits of purchase are not related yet to pro-circular behaviors. As our results show, social image is not related to repairing and reusing practices. Because most studies on perceived value and sustainable behaviors were focused on the initial consumption stage (i.e., purchase), little information can support what happens to sustainable behaviors during use and disposal. Our study gives an initial idea that perceived social value has nothing to do with repairing and reusing behaviors. More research is needed to understand how social benefits (e.g., image, status, recognition) could be related to pro-circular behaviors in different consumption stages and how these benefits could be used to develop circular business models.

We also stated that functional perceived value would positively influence repairing and reusing behaviors. Our findings supported these hypotheses for repairing practices in both categories (i.e., clothing and furniture) and reusing furniture. The reasoning here is that the functionality of products is needed to encourage repairing to extend the lifetime of products in their original status. For example, other studies on sustainable post-consumption clothing behaviors suggest that people are motivated to mend clothes when they intend to reuse them or give them to family, relatives, and friends [41]. This kind of reusing requires having clothing with proper features.

Regarding furniture, several purchases are driven by basic functional and utilitarian needs (e.g., comfort, design, quality, fair/reasonable price) [13,101,102]. Thus, when people perceive good functionality in their products, they could be encouraged to keep it by repairing them. Conversely, we found no significant relationship between functional value and reusing behavior in the clothing category. This is somewhat contradictory with previous studies that suggest people repair or reuse clothing by giving it to others [41]. A possible explanation is that there are several ways to practice reusing. For instance, people may reuse clothing through other behaviors like shopping for secondhand clothing [95] instead of reusing their own clothing. Because people find shopping fun and relaxing even in secondhand markets [95], they will not reuse their clothing even though such clothes have functional value.

Future research could particularly address reusing behavior, exploring different ways to reuse (e.g., donation, secondhand market, repurposing own products) and the role of functional value in all of them.

We found relevant evidence on the role of green consumption values in the relationship between perceived value and pro-circular behaviors. Notably, for the clothing category, the positive relationship between functional value and repairing was intensified for individuals with green consumption values, mainly for those consumers with a high perceived value. In addition, the relationship between social value and repairing became significant in the presence of green consumption values. Although we hypothesized that social value would have a negative relationship with repairing behavior, it seems that when people are concerned about the environment and reflect this concern with their consumption choices, the perceived social value of their products is transferred to pro-circular behavior, increasing the probability of repairing their clothes. These findings agree with previous studies that suggested that functional, social, and environmental values positively influence consumers' sustainable purchase behaviors [103]. Although there are few studies on pro-circular behaviors, some of these studies about mending also found a positive relationship between individuals' environmental concerns and the frequency of repairing [41,71]. Although previous research did not find support for the role of ethical concern as a mediating factor in the relationship between social value and green purchase intention [21], our findings suggest a possible new role for environmental concern in terms of green consumption values as a moderator or condition in the relationship between social value and sustainable behaviors; in this case, such behaviors are in favor of circularity like repairing. Nevertheless, the interaction among perceived social value, environmental values, and pro-circular behaviors deserves more attention. More research could be focused on these interrelationships.

Green consumption values were also important to intensify the effect of functional value on reusing behavior for clothing and furniture products. Consumers who have a high perception of the functionality of their products and additionally exhibit consumption values towards sustainability have a greater probability of reusing them always. Even though no previous studies explored the specific relationship that we analyzed, the relevance of green consumption values identified in our study is in line with previous research that highlights how green consumption values significantly and positively influence other pro-circular behaviors like reselling and reusing via donations [42,98]. Moreover, the findings suggest that consumers with green consumption values and high perceived functional value increase not only reusing behavior but also clothing repair behavior. In addition, the likelihood of clothing repair increases significantly for those consumers with high perceived social value because they translate their environmental concerns into their consumption decisions. Hence, our research adds to the previous literature by analyzing the role of green consumption values as a moderator between perceived value and pro-circular behaviors. We encourage future research to deepen this role to fully understand several relationships that help promote different circular business models.

Finally, we studied repairing and reusing as two behaviors with a similar purpose, like extending product lifespan. We analyzed these behaviors as separate practices. However, some studies mentioned that repairing could help individuals engage in other sustainable clothing consumption behaviors [104]. Some consumers repair some products to reuse them [41]. Previous research highlighted the spillovers between pro-environmental behaviors, some oriented to circularity [105]. Thus, future research could deeply study behavioral spillovers between pro-circular behaviors and analyze the role of perceived value and green consumption values in such relationships.

6. Conclusions

6.1. Managerial Implications

With circular economy principles in the strategic agendas of several brands, promoting circular business models, including repair and reuse services, may no longer be an option

but a requirement as a part of a brand's extended product responsibility (EPR) [106]. Additionally, it could be an opportunity for companies and consumers to act together, facing environmental issues by building a long-term relationship beyond the purchase stage. To foster these circular business models, companies can undertake several strategies from marketing, like promoting circular products and services, educating consumers, encouraging their active participation in circular behaviors, communicating circular values, and building a brand narrative that aligns with sustainable and circular practices. These strategies require understanding consumers, their current behaviors, values, and their relationship with the products they buy and use. This research aimed to examine all these factors by addressing a comprehensive analysis that explores the role of perceived value in adopting reusing and repairing behaviors and the interaction between products' valoration and environmental considerations in pro-circular behavior. The findings suggest valuable insights, allowing us to propose some managerial implications to promote circular business models, as we detail below:

Functional value is an essential starting point to encourage behaviors aiming to extend the lifetime of products. Our results suggest that when people perceive good functionality, durability, and quality in the products they buy, the probability of them repairing and reusing increases. In addition, current initiatives on repairing and reusing (e.g., Worn Wear from Patagonia; Decathlon Second Life) are supported in products designed and made to last. Hence, future strategies to promote circular business models based on extending the life cycle of products should be leveraged on joint work between marketing, design, and innovation teams to ensure proper product materials and features that ensure the properties needed to foster successful repairing and reusing models.

Enhancing emotional value once the product is purchased could be a great strategy to foster pro-circular behaviors of reusing and repairing. People could exhibit emotional attachment to products for several reasons (e.g., due to a special meaning, the service they provide, or the information they contain, in addition to some products being used for a long time) [7,107]. Because of this emotional connection, people may repair their damaged products [7] and mend to save loved garments [41]. Thus, brands oriented to circular business models could divert attention from perceived emotional value related to shopping towards emotional value focused on the phase of use, driving consumers to extend the lifespan of products.

Highlighting green consumption values could empower consumers and lead them towards circular business models. Our research showed that the interaction between sources of value increases the probability of reusing and repairing. Thus, whether brands focus their strategies on making the functional value of their products evident and reinforce the importance of consumer choices in tackling environmental issues, the acceptance of new business models such as reusing and repairing services could be higher.

There is a call to make sustainability a transversal area that works with all the functional areas in organizations. Marketing is one of the areas with a relevant role in sustainability issues, for example, through the promotion of new business models. The current study has a valuable impact by reinforcing this idea of a more systemic and comprehensive view by analyzing behaviors in stages beyond the purchase. Hence, our results and insights open new opportunities for marketing and sustainability working together. It implies the involvement of marketing from a strategic approach in which all marketing decisions (i.e., segmentation, targeting, positioning, and the whole marketing mix) have a more holistic perspective considering all the stages of consumption (i.e., acquisition, use, final disposal) and promoting pro-circular behaviors, hopefully using, and seizing the interaction between different sources of value, as our research suggests. By doing so, circular business models could help businesses differentiate themselves in the market and contribute to the broader goal of fostering a circular economy as a mandatory path to tackle social and environmental demands.

6.2. Limitations

This research was focused on two critical practices that aim to extend the useful life of products (i.e., reusing and repairing). Although the previous literature suggests these pro-circular behaviors are desirable options because of their potential environmental benefits across the whole value chain, other circular practices (e.g., resale, rent, recycling) deserve attention to fully understand which factors could be involved in promoting circular business models. Likewise, we used two product categories to operationalize pro-circular behaviors (i.e., furniture and clothing). Our purpose was not to analyze or compare the role of products in the studied behaviors. However, other product categories could be involved in future studies. Circularity is desirable in several industries, so more research, including more products, is needed.

This study based the analysis on seven neighborhoods in the city of Medellín, Colombia. Although this city is a reference point to study pro-circular behaviors, thanks to its initiatives and management in terms of environmental sustainability, the findings can only be inferred for this population. Further studies should be developed to expand the scope of these results, at least at the national level and hopefully globally.

Author Contributions: Conceptualization, C.A.; methodology, C.A., J.B.C.L. and M.A.B.B.; software, J.B.C.L. and M.A.B.B.; formal analysis, C.A., J.B.C.L. and M.A.B.B.; investigation, C.A.; data curation, J.B.C.L. and M.A.B.B.; writing—original draft preparation, C.A., J.B.C.L. and M.A.B.B.; writing—review and editing, C.A.; supervision, C.A.; project administration, C.A.; funding acquisition, C.A. All authors have read and agreed to the published version of the manuscript.

Funding: CESA School of Business funded the fieldwork of this research.

Institutional Review Board Statement: The study was approved by the Ethics Committee of CESA. (protocol code 004; 21 September 2021).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors on request.

Conflicts of Interest: The authors declare no conflicts of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

Appendix A

Table A1. Operationalization of variables.

Variable	Authors	Items	Scale	Cronbach α
Dependent Variables: Pro-circular Behaviors				
Repair	Scale adapted from Diddi and Yan [41]	How often do you: - Repair your furniture (e.g., chairs, tables, desks) instead of buying new ones. - Repair your clothes instead of buying new ones.	1. Never 2. Rarely 3. Occasionally 4. Often 5. Always	
Reuse	Scale adapted from Diddi and Yan [41]	How often do you: - Reuse your furniture (e.g., chairs, tables, desks). - Reuse your clothing.	1. Never 2. Rarely 3. Occasionally 4. Often 5. Always	

Table A1. *Cont.*

Variable	Authors	Items	Scale	Cronbach α
Independent Variables: Perceived Value				
Functional Value	Scale adapted from Saura and Vivó [79]	Indicate your level of agreement with the following statements: Furniture The furniture I have (sofas, beds, chairs, desks, among others) is of an acceptable quality. - The furniture I have (sofas, beds, chairs, desks, among others) is of an average level (functional but not sophisticated). - The furniture I have (sofas, beds, chairs, desks, among others) will not last long. - I feel that my furniture (sofas, beds, chairs, desks, among others) is good value for money. - The furniture (sofas, beds, chairs, desks, among others) that I have will fulfill its functions properly.	1. I strongly disagree 2. I disagree 3. I agree 4. I strongly agree	0.65
		Clothing - The clothes I have are of an acceptable quality. - The clothes I have are of an average level (functional but not sophisticated). - The clothes I have will not last long. - I feel that my clothes are good value for money. - The clothes I have will fulfill their functions properly		0.65
Emotional Value	Scale adapted from Saura and Vivó [79]	Furniture - I would feel good if I had new furniture (sofas, beds, chairs, desks, among others) at home. - I would enjoy buying new furniture (sofas, beds, chairs, desks, among others). - Buying new furniture (sofas, beds, chairs, desks, among others) would be to my liking.		0.73
		Clothing - I would feel good if I had new clothes at home. - I would enjoy buying new clothes. - Buying new clothes would be to my liking.		0.75
Social Value	Scale adapted from Saura and Vivó [79]	Furniture - Having new furniture (sofas, beds, chairs, desks, among others) would influence the image that others have of me. - Buying new furniture (sofas, beds, chairs, desks, among others) would give a good impression of me to others.		0.89
		Clothing - Having new clothes would influence the image that others have of me. - Buying new clothes would give a good impression of me to others.		0.94

Table A1. *Cont.*

Variable	Authors	Items	Scale	Cronbach α
Moderator Variable:				
Green Consumption Values	Haws et al. [46]	Indicate your level of agreement with the following statements: - It is important to me that the products I use do not harm the environment. - I consider the potential environmental impact of my actions when making many of my decisions. - My buying habits are affected by my concern for our environment. - I am concerned about the waste of resources on our planet. - I would describe myself as environmentally responsible. - I am willing to make myself uncomfortable to take actions that are more environmentally friendly.	1. I strongly disagree 2. I disagree 3. I agree 4. I strongly agree	0.87
Control Variables:				
Moral norms	Scale adapted from Vining and Ebreo [81]	Indicate your level of agreement with the following statements: Furniture - I feel a strong personal obligation to repair my furniture instead of buying new ones. - I would feel guilty if instead of repairing my furniture I bought new ones. - I am willing to go the extra mile to repair my furniture instead of buying new ones.	1. I strongly disagree 2. I disagree 3. I agree 4. I strongly agree	0.64
		- I feel a strong personal obligation to repurpose my furniture (e.g., tables, chairs, desks) before discarding them. - I would feel guilty if I did not repurpose my furniture (e.g., tables, chairs, desks) before discarding them. - I am willing to go the extra mile to repurpose my furniture (e.g., tables, chairs, desks) before discarding them.		0.68
		Clothing - I feel a strong personal obligation to repurpose my clothes instead of discarding them. - I would feel guilty if I did not repurpose my clothes before discarding them. - I am willing to go the extra mile to repurpose my clothes instead of discarding them.		0.72
		- I feel a strong personal obligation to repair my clothes instead of buying new ones. - I would feel guilty if instead of repairing my clothes I bought new ones. - I am willing to go the extra mile to repair my clothes instead of buying new ones.		0.70

Table A1. *Cont.*

Variable	Authors	Items	Scale	Cronbach α
Specific perceived effectiveness	Scale adapted from Vining and Ebreo [81]	Indicate your level of agreement with the following statements: Furniture - By reusing my furniture (e.g., tables, chairs, desks), I can contribute to solving environmental problems. - By repairing my furniture (e.g., tables, chairs, desks), I can contribute to solving environmental problems. Clothing - By reusing my clothing, I can contribute to solving environmental problems. - By repairing my clothing, I can contribute to solving environmental problems.	1. I strongly disagree 2. I disagree 3. I agree 4. I strongly agree	
Sociodemographics		Gender Age Marital status SES (Socio Economic Status) Occupation Level of studies Level of income Type of housing		

Source: Own elaboration.

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