Article

Save Myself or Others? The Influence of Attitude toward FMCG Products from Recycled Material on the Intention to Buy Them: Hidden Motives and the Role of Income

Viktorija Grigaliūnaitė * [ID]**, Aušra Pažėraitė and Mantautas Račkauskas**

Faculty of Economics and Management, Vytautas Magnus University, 44244 Kaunas, Lithuania;
ausra.pazeraite@vdu.lt (A.P.); mantautas.rackauskas@vdu.lt (M.R.)
* Correspondence: viktorija.grigaliunaite@vdu.lt

Abstract: Buying products made from recycled materials is an important way to support sustainability, especially in the FMCG (fast-moving consumer goods) context. Because these are the products that make up a very large part of consumer spending, it is very important to encourage consumers to buy them when they are made from recycled materials. Therefore, this research aimed to determine the relationship between income, egoistic and altruistic motives, attitude toward FMCG products from recycled material, and intention to buy them. To reach the research aim, questionnaire research was applied and structural equation modeling was carried out to analyze the research results. Based on the analysis of research results, income negatively influenced egoistic motives regarding buying recycled FMCG. Moreover, egoistic motives influenced attitude but did not directly or indirectly influence intention. Altruistic motives were not influenced by income but directly influenced attitude and intention to buy FMCG from recycled materials. When communicating about the benefits of recycled FMCG, altruistic motives should be highlighted, including rationalization of these aspects with specific calculations supporting these statements. Based on research results, such communication could facilitate the highest possibility of developing a sustainable FMCG market from recycled materials.

Keywords: products from recycled materials; altruistic motivation; egoistic motivation; income; intention; attitude toward products from recycled materials; FMCG

1. Introduction

The maxim "the greatest threat to our planet is the belief that someone else will save it" highlights the importance of everyone actively participating in sustainability efforts. Sustainability and buying products made from recycled materials are two closely related phenomena. Buying products made from recycled materials is an important way to support sustainability by conserving resources, reducing waste, minimizing energy consumption, lowering carbon emissions, and promoting a circular economy. As a result, the United Nations Environment Programme [1] emphasizes the importance of buying products made from recycled materials as a key strategy for achieving sustainable consumption and production and the WWF [2] acknowledges the role of recycled materials in reducing environmental impacts and conserving resources.

Businesses embracing recycled materials and promoting sustainable consumption align with societal expectations, reduce environmental impacts, enhance brand reputation, and open up new business opportunities [3,4]. By prioritizing sustainability, businesses can achieve long-term success while contributing to a more sustainable future. Accordingly, understanding the factors that determine consumer intentions to buy products from recycled materials can help businesses and policymakers develop strategies to promote the adoption of recycled products. By appealing to correct factors and highlighting what is important for consumers, efforts can be made to encourage individuals to choose products made from recycled materials.

It is known [5] that consumer behavior is heavily influenced by motivation and, if one does not understand a customer's motivations, it will be hard to encourage specific behavior. It is important to note that motivation can be influenced by various factors, including individual values, beliefs, knowledge, social influence, environmental awareness, marketing efforts, economic and demographic factors, etc. [6–9]. It is essential to reach a deeper understanding of motivation itself and to leverage the factors that affect motivation in order to cultivate and strengthen consumer motivation to buy products from recycled materials. Addressing consumer motivations and providing the necessary efforts can encourage a shift towards more sustainable consumption behaviors.

Ref. [10] revealed that both altruistic motivation and egoistic motivation played a major role in determining youth green purchasing intentions, but consumers favored egoistic motivation over altruistic motivation when buying green goods. Similarly, Ref. [6] revealed that, compared with altruistic motives, egoistic motives had a stronger impact on the consumer's intention of buying organic foods. Contrarily, Ref. [11] analyzed whether altruistic and egoistic values influenced consumers' attitudes and purchase intentions toward eco-friendly packaged products, referring to values as motives as they are very closely related (values motivate to demonstrate behavior) and are essential for shaping consumer behavior. They revealed that altruistic motives were more significant than egoistic motives for influencing the attitude of young customers in favor of eco-friendly packaged products. Ref. [12] also concluded that egoistic values had no significant direct negative effect on green apparel consumption behavior, whereas the significant positive direct effect of the biospheric values was greater than that of altruistic values. Ref. [13] highlighted that altruistic values should be prioritized in practical interventions that support sustainable behavior regarding the adoption of a minimalist lifestyle. Ref. [14] revealed that altruistic and biospheric motivations were positively associated with the adoption of green housing features. The author also speculated that respondents' income and political biases explained the lack of statistical significance of egoistic motivations on the adoption prediction. Ref. [15] revealed that altruistic concern was associated with sex, age, political orientation, and Machiavellianism, whereas egoistic concern was not associated with any of these predictors except sex.

Hence, it could be seen that the analysis of motivation to buy products from recycled materials and the factors determining that it is very sensitive to the specific contexts of culture, the product being analyzed, respondents' characteristics, and many other factors have led to the results of different research being controversial. Moreover, the impact of income is often discussed as implicit, but research directly analyzing the impact of income on motivation is scarce. Consequently, it could be stated that this remains an open problem in the area.

This problem becomes very relevant in the fast-moving consumer goods (further FMCG) context, as these are the goods that are intended for consumers' everyday private consumption. FMCG products have a useful life shorter than a year and are bought relatively frequently with recurring expenditures, such as food and beverages, personal care, cleaning products, apparel and footwear, etc. [16]. As FMCG are products that are consumed quickly and often in large quantities, this high turnover rate leads to a significant environmental impact, resulting in 60% of greenhouse gas emissions, 80% of water usage, and 66% of tropical forest loss [17]. By choosing FMCG made from recycled materials, society can have a more immediate and tangible effect in reducing waste and promoting sustainable practices. FMCG contribute to a significant amount of waste, especially through packaging and single-use products. The clothing industry alone could lead to a 77% increase in CO_2 emissions if consumer spending retains the upward trend [18]. By buying FMCG made from recycled materials, consumers actively support the reduction of waste generation. This helps divert materials from landfills, reducing environmental pollution and the strain on waste management systems. Moreover, by purchasing FMCG made from recycled materials, consumers support the transition to a circular economy, as such products emphasize the recycling and reuse of materials, extending their life cycle and

reducing the need for resources. According to the European Parliament, less than half of used clothes are collected for reuse or recycling [19] while the rest adds to the constantly growing amount of waste. Hence, these are the products that make up a very large part of consumer everyday spending. Therefore, it is extremely important whenever possible to buy FMCG made from recycled materials to achieve sustainability. Consequently, to our knowledge, no study has considered the direct relationships between income, motivation, attitude, and intention in the context of FMCG products from recycled material.

To address this gap in the scientific literature, we formulated the following research **aim:** to determine the relationship between income, egoistic and altruistic motives, attitude toward FMCG products from recycled material, and intention to buy them.

The objectives raised to reach the aim of the research:

1. To theoretically determine the relationship between income, egoistic and altruistic motives, attitude toward products from recycled material, and intention to buy them;
2. Based on the empirical research results, to determine the relationship between income, egoistic and altruistic motives, attitude toward products from recycled material, and intention to buy them in the context of the FMCG product category;
3. To provide conclusions and theoretical and practical implications for encouraging the intention to buy products made from recycled materials.

This research contributes to the general body of the academic literature by revealing how income, motives, attitude, and intention relate to the context of FMCG from recycled materials. This will help understand consumer behavior and tailor marketing strategies and communication efforts to promote recycled FMCG. Moreover, governments and organizations can leverage insights from the analysis of these factors to design effective policies and interventions that promote the purchase of FMCG from recycled materials. Hence, theoretical and practical implications based on the results of this research may help facilitate the development of a sustainable market for FMCG from recycled materials.

2. Conceptual Framework

Consumer behavior is a dynamic and complex process with many interacting elements [20]; undoubtedly, one of those elements influencing consumer behavior is motivation [5]. According to Ref. [10], individuals with altruistic motivation can behave for the good of others and the environment [11] without gaining personal gain, while egoistic motivation causes individuals to perform according to their own greatest advantage (self-centered motives) [21].

Many theoretical models that analyze motivation in the context of consumer behavior, especially within the sustainability framework, contain these main variables [10,11]:

- Altruistic motivation;
- Egoistic motivation;
- Attitude;
- Intention.

Despite this, motivation is influenced by many factors, including demographics, available resources, personality, family, culture, social class, information processing, values, and other factors [22]. Hence, among other factors, income is the one that may affect motivation. Ref. [23] admits that only a small amount of research has been done to determine triggers, especially on consumers' characteristics, for recycled product purchase intention. When relating income, motivation, attitude, and intention based on the literature review, it could be stated that the relations are as follows:

1. Income influences motivation and attitude.

Ref. [24] states that high-income (low-income) individuals may display less (more) effort on environmental behavior. Ref. [25] substantiates this statement by revealing that income influences domestic solar water heater acceptance. This was also proven by [26], revealing that income can affect the willingness to pay of an individual with a green lifestyle. Ref. [27] reveals that, theoretically, income shapes the motivation and attitudes of

consumers, but empirically analyzes only the effect of income on the purchase intention of organically grown products. Moreover, the impact of income on motivation is often discussed as implicit (e.g., [14]), the effect of income is analyzed on green purchase attitude and intention, excluding motivation [28], or the object of the analysis is the moderating effect of income on the influence of hedonic/utilitarian motivation on green purchase intention [29]. However, research directly empirically analyzing the impact of income on motivation regarding products from recycled materials is limited and this signals the need for additional studies to understand more about the influence of income on motivation regarding products made from recycled material. Consequently, the assumption could be made that income may influence egoistic and altruistic motivation and attitude toward FMCG made from recycled materials. Therefore, we hypothesize that:

H1. *Income directly influences egoistic motives for buying products made from recycled materials;*

H2. *Income directly influences altruistic motives for buying products made from recycled materials;*

H3. *Income directly influences attitude toward products made from recycled materials.*

2.　　Motivation (egoistic and altruistic) influences attitude and intention to buy.

Refs. [30,31] reveal that motivation influences attitude regarding online fashion and green cosmetics, respectively. Refs. [10,11,32] state that motivation influences the intention to buy. Nevertheless, different research (e.g., [6,10] vs. [11,13]) reveal different results regarding which motives, egoistic or altruistic, have an impact on attitude and/or intention to buy specific goods. Thus, although studies have been conducted by many authors, this problem is still insufficiently explored. Moreover, as far as we know, no previous research has investigated this problem in the context of FMCG from recycled materials. Therefore, we hypothesize that:

H4. *Egoistic motives directly influence attitude toward products made from recycled materials;*

H5. *Egoistic motives directly influence the intention to buy products made from recycled materials;*

H6. *Altruistic motives directly influence attitude toward products made from recycled materials;*

H7. *Altruistic motives directly influence the intention to buy products made from recycled materials.*

3.　　Attitude influences intention to buy.

Based on the theory of planned behavior, attitude influences the intention to behave (buy); this has been proven by many authors [33–38]. Hence, this relation stands as a basis and must be verified in the context of FMCG from recycled materials; moreover, this should allow seeing the big picture of relations between income, motives, attitude, and intention. Therefore, we hypothesize that:

H8. *Attitude toward products from recycled materials directly influence intention to buy products made from recycled materials.*

Based on this, the conceptual research model is elaborated and provided in Figure 1. As can be seen, it is hypothesized that income directly influences egoistic and altruistic motives, as well as an attitude toward products made from recycled materials; egoistic and altruistic motives influence attitude toward the products made from recycled materials and intention to buy products made from recycled materials; attitude toward the products made from recycled materials influence intention to buy products from the recycled materials in the specific product category. Thus, the model represents the provided research hypotheses.

Applying the research model in the context of FMCG allows a deeper understanding of specific factors and communication tactics that must be tackled to strengthen consumer motivation to buy those everyday products from recycled materials.
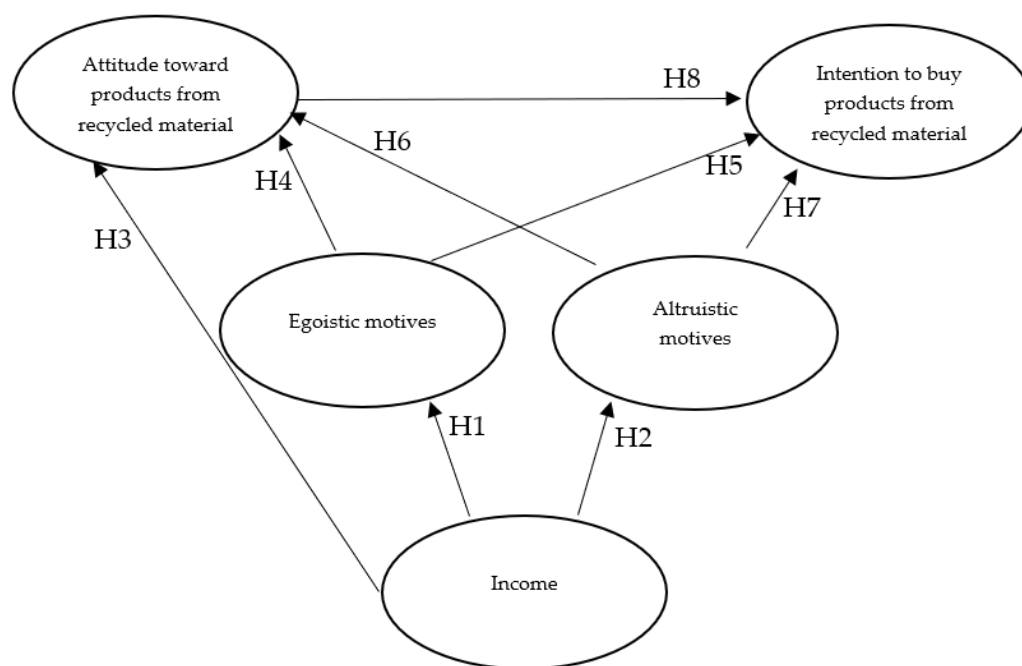
Figure 1. Conceptual research model.

3. Research Methodology

To reach the aim of the research, questionnaire research was applied. At the beginning of the questionnaire, fast-moving consumer goods were defined for the respondents as short-lived, used (or valid) for less than a year, relatively inexpensive, and frequently purchased products, which included food and beverages, personal hygiene, household and daily home maintenance, clothing and footwear, and other products sold usually in supermarkets [16].

First, the questionnaire was delivered to four marketing experts and was reconsidered according to their comments to ensure content validity. Then, a pilot study was conducted with 12 respondents. After the pilot study, final corrections were made and the questionnaire was verified. The first question in the questionnaire was related to the respondent's age and consent to fill out the questionnaire. All respondents agreed that they were not younger than 18 years old and that they voluntarily agreed to fill out the questionnaire. The questionnaire was anonymous, respondents' privacy was guaranteed, and the primary data were maintained confidential. The composition of the final questionnaire is provided in Table 1 below. The original questionnaire was provided in the Lithuanian language for the respondents from Lithuania.

As the research model contained 4 latent variables, namely altruistic motives, egoistic motives, attitude, and intention, manifest variables that measured these latent variables were adapted from the literature [10,11,37,39,40] considering the context of the FMCG made from recycled materials. For example, egoistic motivation was related to health concerns by [10,11,37], but, in this research, not only food or food packaging were taken into account, which were easily related to health concerns, but all fast-moving consumer goods; thus, for respondents it was harder to relate toilet paper, clothes, etc., to health concerns. Hence, when adapting the statements, health concerns was changed to personal needs, which included health concerns and other needs. Other variables, including income, were general nominal variables. Two open questions were provided to determine whether the respondents currently knew that they bought FMCG from recycled materials. This was important because, if respondents would not know at least a few products made from recycled materials, the evaluation of the intention to buy such products would be questionable.

Table 1. Composition of the questionnaire.

Latent Variable	Manifest Variable	Coding	Measurement	Source (Adapted from)
Altruistic motives	I make an effort to buy products made from recycled materials.	Altruistic1	7-point Likert scale	[11]
	When I need to choose between two equal products, I buy the one which is less harmful to other people and the environment.	Altruistic2		[11]
	To survive, humans must establish a healthy relationship with nature.	Altruistic3		[10]
	Buying products from recycled materials is in line with my ethical values because it is less harmful to the environment.	Altruistic4		[10]
	When I shop for things, I look for some that are made from recycled materials.	Altruistic5		[10]
	I would agree to pay more for the FMCG product that is made from recycled material.	Altruistic6		[37]
Egoistic motives	I find that products made from recycled materials meet my needs better.	Egoistic1	7-point Likert scale	[11]
	When I decide to buy products made from recycled materials, I think about the benefits they bring to me.	Egoistic2		[10]
Attitude	Products made from recycled materials are the necessity.	Attitude1	7-point Likert scale	[39]
	If possible, in my opinion, everyone should always use products made from recycled materials.	Attitude2		[37]
	I believe that FMCG from recycled materials should replace FMCG made from non-recycled materials as much as possible.	Attitude3		[39]
	Products made from recycled materials are highly overrated (r).	Attitude4		[40]
Intention	I intend to buy FMCG made from recycled materials.	Intention1	7-point Likert scale	[39]
	When choosing FMCG, I intend to consistently choose those made from recycled materials.	Intention2		[10]
Income (EUR per month per person)		Less than 400 400–800 801–1200 1201–1600 1601–2000 2001–2400 2401 and over		
Gender		Women Men Do not want to reveal		

Table 1. *Cont.*

Latent Variable	Manifest Variable	Coding	Measurement	Source (Adapted from)
Age		18–25 26–33 34–41 42–49 50–57 58–65 66 and over		
Having children under 18		Yes No		
Buying products made from recycled materials		Yes, always Yes, often Yes, sometimes No, never Other		
What brands and products do you know that are made from recycled materials?		Open question		
What brands and products do you buy that are made from recycled materials?		Open question		

The questionnaire research was conducted in Lithuania from 18 April 2023 to 29 May 2023. The respondents filled out the survey on the online survey platform Google Forms. Random sampling was applied. Respondents were selected randomly in the streets and supermarkets in the biggest cities of Lithuania and, if a person was an adult and voluntarily agreed to participate in the survey, a tablet was provided for the respondent to fill in the survey questions. Furthermore, the link to the questionnaire was shared with various groups and communities on social networks to correspond as close as possible to the Lithuanian census.

According to Ref. [41], for the PLS-SEM analysis, the minimum sample size should be equal to the larger of ten times the largest number of structural paths directed at a particular latent construct in the structural model. In this case, the sample size for this research would be N = 3 × 10 = 30. Based on the minimum sample size requirements necessary to detect minimum R^2 [42] when the maximum number of arrows pointing at a specific construct is 3, statistical power is 80%, the significance level is 5%, and minimum R^2 is 25%, the minimum sample size should be 59. Based on [43], we created an a priori sample size calculator for structural equation models based on power analysis, which took into account the number of observed and latent variables in the model, the anticipated effect size, and the desired probability and statistical power levels; the sample size for the research should be 116 (when the anticipated effect size is 0.5; the desired statistical power level is 0.8; the number of latent variables is 4 and number of observed variables is 15 (as income is observed variable), and the probability level is 0.05). Hence, the obtained sample size of 123 respondents who correctly filled out the questionnaire was considered sufficient (100% of respondents filled out the questionnaire correctly, with no unfinished answers or missing data). Nevertheless, for future research, sample size should be greater to reveal even small effect sizes.

Respondents' characteristics are provided in Table 2. As can be seen, based on all criteria, respondents were dispersed quite similarly with a few exceptions.

MS EXCEL, IBM SPSS Statistics V.20, and SmartPLS v.4 [44] software products were used for the statistical analysis of the questionnaire research results. Structural equation modeling was applied for the analysis of the research results.

Table 2. Respondents' characteristics (N = 123).

Criteria	Variations	Results (%)
Gender	Men	41.5
	Women	58.5
	Do not want to disclose	0
Age	18–25	10.6
	26–33	14.6
	34–41	25.2
	42–49	22
	50–57	10.6
	58–65	13
	66 and over	4.1
Having children under 18	Yes	42.3
	No	57.7
Income (EUR per month)	Less than 400	2.4
	400–800	4.9
	801–1200	22.8
	1201–1600	17.1
	1601–2000	13.8
	2001–2400	14.6
	2401 and over	24.4

4. Research Results

A total of 81.3% of the respondents revealed that they buy FMCG from recycled materials often or sometimes. The brands and/or the products made from recycled materials that they knew and/or bought the most were:

- Bags;
- Clothes (H&M, Zara, Puma, Nike, Reserved, Tommy Hilfiger, Lindex, or clothes from recycled wool);
- Straws;
- Bottles;
- Disposable dishes;
- Packaging;
- Water;
- Toilet paper;
- Cosmetics;
- Some food brands (e.g., "Vilkyškių");
- Gardening tools ("Gardena", "Fiskars");
- Some Ikea products;
- Representative goods;
- Patagonia products;
- Toothbrushes.

Despite this, there were a few comments that concerned the lack of information about the benefits arising from the products that were made from recycled materials. For example: "*There is not enough information to demonstrate the benefits and drawbacks of using recycled materials. Therefore, the first positive step would be to specify all the advantages and disadvantages as far as possible in specific numbers and predict how they will manifest themselves in time and distribute this information, because currently there is a lack of emphasis on which products have the greatest impact on benefits, perhaps the choice of at least a few products made from recycled materials would already have a significant impact. In other words, much more information is needed. With such structured information, I as a consumer could make a conscious choice between benefit/disadvantage and price*". And there were a few comments stating that the respondent believed that products from recycled materials were only "*greenwashing*" or a marketing trick for the company to seem more sustainable than it was.

Consequently, most of the respondents knew and bought FMCG from recycled materials at least sometimes. Nevertheless, more structured information about the benefits of these products should be provided to society to enhance the level of buying recycled FMCG.

For the statistical analysis, after reversing the answers for *attitude4* (as this was the reversed question), further analysis of the research results included the evaluation of the reflective measurement model and the structural model, which allowed testing of the research hypotheses.

The evaluation of the reflective measurement model started with the elimination of the manifest variables; *altruistic3* and *attitude4* had outer loadings lower than 0.7 (0.699 and 0.504, respectively), thus were eliminated from the analysis. Furthermore, *egoistic1* and *intention2* were also eliminated from further analysis, as discriminant validity was not established based on the heterotrait–monotrait ratio (HTMT$^{0.90}$) [45].

After the elimination of the latter four manifest variables, the rest of the outer loadings were above 0.8 and statistically significant ($p < 0.05$), revealing indicator reliability. For the latent variables that were measured with more than one manifest variable, Cronbach's alpha (threshold value 0.7), composite reliability (values should be between 0.7 and 0.95), and average variance extracted (threshold value 0.5) values were all above the threshold value (see Table 3); hence, it could be stated that there was no lack of internal consistency reliability and the degree of convergent validity was sufficient.

Table 3. Cronbach's alpha, composite reliability, and average variance extracted values.

Variable	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Altruistic motives	0.909	0.912	0.735
Attitude	0.909	0.911	0.847

To ensure discriminant validity in the measurement model, three criteria were used. Two of them, the heterotrait–monotrait$^{0.90}$ ratio and the Fornell–Larcker criterion, are provided in Table 4 below. As can be seen, the values of the HTMT criterion verified that discriminant validity was established in the measurement model (threshold value 0.90). The Fornell–Larcker criterion revealed the same conclusion, as each construct's squared root value of AVE was higher than its correlations with other latent constructs. Finally, cross-loading criteria revealed that all of the indicators' outer loadings with their corresponding latent constructs were greater than their outer loadings with all the remaining constructs. Consequently, the measurement model was assessed as reliable and valid (after the elimination of four manifest variables).

Table 4. Heterotrait–monotrait$^{0.90}$ ratio and Fornell–Larcker criterion.

Heterotrait–Monotrait$^{0.90}$ Ratio					
Variable	**Altruistic Motives**	**Attitude**	**Egoistic Motives**	**Income**	**Intention**
Altruistic motives					
Attitude	0.791				
Egoistic motives	0.701	0.632			
Income	0.132	0.105	0.259		
Intention	0.868	0.765	0.606	0.116	
Fornell–Larcker Criterion					
Variable	**Altruistic Motives**	**Attitude**	**Egoistic Motives**	**Income**	**Intention**
Altruistic motives	0.857				
Attitude	0.721	0.920			
Egoistic motives	0.670	0.603	1.000		
Income	−0.117	−0.102	−0.259	1.000	
Intention	0.829	0.729	0.606	−0.116	1.000

When evaluating the structural model, first of all, it should be stated that the model did not exhibit multicollinearity problems, as all of the variance inflation factor (VIF) values were below the threshold value of 5 (for both measurement and structural model variables). The R^2 value for the variable *intention* was 72.4%; for the variable *attitude*, it was 54.7%. Thus, the amount of explained variance of the latter variables was substantial and moderate, respectively. Nevertheless, the R^2 values for the variables *egoistic* and *altruistic motives* were 6.7% and 1.4%, respectively. These were enormously weak results. Nevertheless, as was revealed in the first and second chapters, egoistic and altruistic motives were influenced by many factors, including demographics, available resources, personality, family, culture, social class, information processing, values, and other factors that were not analyzed in this research (considering the aim of the research), thus it would not be fair to expect that only income could explain the variance in human motives. Moreover, R^2 results of about 0.20 are considered very high in disciplines such as consumer behavior [30]. As follows, the explained variance of the variables *egoistic* and *altruistic motives* was believed to be low but satisfactory in this research, as only one predictor of motives was being analyzed (considering the aim of the research). When analyzing Cohen's f^2 effect sizes, it could be seen that altruistic motives had a substantial effect size on attitude (0.396) and intention (0.541); attitude had a moderate effect size on intention (0.115); egoistic motives had a moderate effect size on attitude (0.058); income had a moderate effect size on egoistic

motives (0.072); egoistic motives had a small effect size on intention (0.002); income had a small effect size on altruistic motives (0.014) and attitude (0.001).

When analyzing path coefficients (see Table 5), it can be seen that altruistic motives had a positive direct statistically significant influence on attitude toward products made from recycled materials and intention to buy these products. Attitude toward products made from recycled materials had a positive direct statistically significant influence on intention to buy them. Egoistic motives had a positive direct statistically significant influence on attitude toward FMCG from recycled materials. Finally, income had a negative direct statistically significant influence on egoistic motives. The direct influence of income on altruistic motives and attitude toward products made from recycled materials was statistically non-significant. Moreover, the direct influence of egoistic motives on the intention to buy recycled FMCG was also statistically non-significant.

Table 5. Path coefficients and their statistical significance.

Relationship	Path Coefficient	Standard Deviation	T Statistics	*p*-Value
Altruistic motives → Attitude	0.573	0.083	6.893	0.000
Altruistic motives → Intention	0.616	0.103	5.966	0.000
Attitude → Intention	0.264	0.104	2.542	0.011
Egoistic motives → Attitude	0.226	0.093	2.436	0.015
Egoistic motives → Intention	0.034	0.082	0.415	0.678
Income → Altruistic motives	−0.117	0.096	1.215	0.225
Income → Attitude	0.024	0.071	0.332	0.740
Income → Egoistic motives	−0.259	0.092	2.822	0.005

When analyzing the total effects (Table 6), it could be seen that altruistic motives had a higher total effect on intention when compared with the path coefficient. Other influences were the same if statistically significant. Statistically non-significant influences remained between the same variables, just adding one more statistically non-significant total effect of income on intention.

Based on these results, the research hypotheses were tested. The results of hypotheses testing are provided in Table 7. Out of eight hypotheses, five were supported. Income directly negatively influenced egoistic motives for buying products made from recycled materials; egoistic motives directly positively influenced attitude toward products made from recycled materials; altruistic motives directly positively influenced attitude toward products made from recycled materials; altruistic motives directly positively influenced the intention to buy products made from recycled materials; attitude toward products from recycled materials directly positively influenced intention to buy products made from recycled materials. Nevertheless, income did not influence altruistic motives for buying products made from recycled materials and attitude toward products made from recycled materials and egoistic motives did not influence the intention to buy products made from recycled materials.

Table 6. Total effects and their statistical significance.

Relationship	Total Effect	Standard Deviation	T Statistics	*p*-Value
Altruistic motives → Attitude	0.573	0.083	6.893	0.000
Altruistic motives → Intention	0.767	0.064	11.908	0.000
Attitude → Intention	0.264	0.104	2.542	0.011
Egoistic motives → Attitude	0.226	0.093	2.436	0.015
Egoistic motives → Intention	0.094	0.076	1.233	0.217
Income → Altruistic motives	−0.117	0.096	1.215	0.225
Income → Attitude	−0.102	0.094	1.078	0.281
Income → Egoistic motives	−0.259	0.092	2.822	0.005
Income → Intention	−0.107	0.080	1.342	0.180

Table 7. Hypotheses testing results.

Hypothesis	Result	Comment
H1. *income directly influences egoistic motives for buying products made from recycled materials.*	Supported	The influence was negative
H2. *income directly influences altruistic motives for buying products made from recycled materials.*	Rejected	Non-significant
H3. *income directly influences attitude toward products made from recycled materials.*	Rejected	Non-significant
H4. *egoistic motives directly influence attitude toward products made from recycled materials.*	Supported	The influence was positive
H5. *egoistic motives directly influence the intention to buy products made from recycled materials.*	Rejected	Non-significant
H6. *altruistic motives directly influence attitude toward products made from recycled materials.*	Supported	The influence was positive
H7. *altruistic motives directly influence the intention to buy products made from recycled materials.*	Supported	The influence was positive
H8. *attitude toward products from recycled materials directly influence intention to buy products made from recycled materials.*	Supported	The influence was positive

When non-significant relations were deleted to reveal final path coefficients (see Table 8), it could be seen that R^2 values did not change but some f^2 effect sizes improved. Altruistic motives had a higher effect size on attitude (0.403) and intention (0.695) and attitude had a little higher effect size on intention (0.128).

As can be seen from the final model representing the relationship between income, egoistic and altruistic motives, attitude toward FMCG from recycled material, and intention to buy them (see Figure 2), the higher the income the lower the egoistic motives regarding buying recycled FMCG. Hence, lower income stimulated egoistic motives, as individuals may have had to plan their purchases more carefully and, possibly with less disposable income, personal needs were more important when compared with caring for others and the environment, which came after satisfying one's own needs. Moreover, egoistic motives influenced attitude but did not influence intention either directly or indirectly, thus the assumption could be made that, based on egoistic motives, attitude does not turn into planned action.

Table 8. Final path coefficients and their statistical significance.

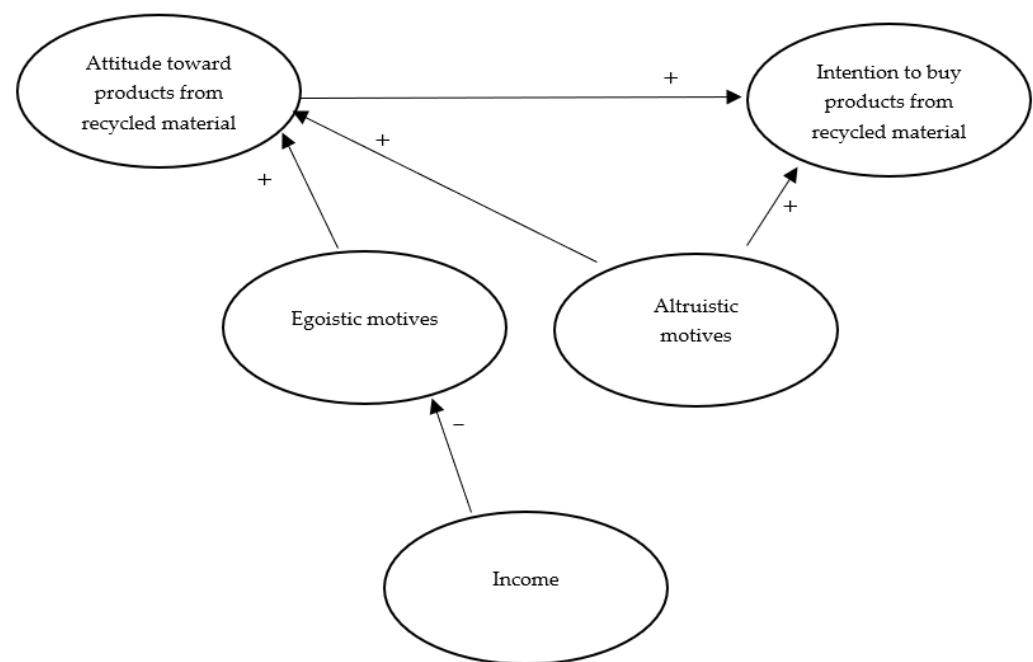| Relationship	Path Coefficient	Standard Deviation	T Statistics	*p*-Value
Altruistic motives → Attitude	0.576	0.083	6.970	0.000
Altruistic motives → Intention	0.633	0.095	6.666	0.000
Attitude → Intention	0.272	0.101	2.692	0.007
Egoistic motives → Attitude	0.217	0.085	2.568	0.010
Income → Egoistic motives	−0.259	0.092	2.822	0.005

Figure 2. Visualized relationship between income, egoistic and altruistic motives, attitude toward FMCG products from recycled material, and intention to buy them ("−" indicates negative influence, "+" indicates positive influence).

Altruistic motives were not influenced by income and directly influenced attitude and intention; moreover, attitude directly influenced intention. Hence, the assumption could be made that altruistic motives encourage forming a positive attitude toward recycled FMCG and stimulate the intention to buy them; moreover, the possibility exists that an attitude influenced by altruistic motives may turn into planned action to behave.

5. Discussion and Implications

The analysis of the research results revealed that many consumers knew and at least sometimes bought FMCG from recycled materials. However, not all consumers understood what the specific benefits were of buying products from recycled materials. There were even those consumers who did not believe in any benefits of buying such products as they perceived it as greenwashing. Therefore, more structured information about the benefits of these products should be provided to society to enhance the level of buying recycled FMCG.

Based on the research results, altruistic motives did not depend on income and influence attitude or intention to buy recycled FMCG; moreover, the influence of altruistic motives on attitude was higher when compared with the influence of egoistic motives on attitude (furthermore, egoistic motives did not influence intention to buy). Therefore, when communicating about the benefits of recycled FMCG, the specific rational information and altruistic motives should be highlighted, i.e., that FMCG from recycled materials is less harmful to other people and the environment, that it helps to establish a healthy relationship with nature, that it is ethical, and other altruistic aspects, including rationalization of these aspects with specific calculations supporting these statements. Based on research results, such communication could facilitate the best development of a sustainable market for FMCG from recycled materials.

Egoistic motives influenced attitude toward FMCG from recycled materials (this influence was lower when compared with the one that altruistic motives made), but they did not influence the intention to buy either directly or indirectly. Not surprisingly, attitude influenced the intention to buy recycled FMCG; thus, there is a possibility that highlighting egoistic motives (the benefits that products from recycled materials bring to the person) would result in a better attitude toward these products, which in turn would result in higher

purchase intentions. But egoistic motives depend on income (the influence is negative); thus, such a scenario may be effective if targeted consumers have a lower-than-average monthly income. Otherwise, the assumption could be made that higher income lowers the importance of egoistic motives, which results in a weak effect on attitude and, accordingly, on intention.

These basic findings of this research are consistent with research showing that altruistic motives are more important than egoistic motives for attitude formation and supporting sustainable behavior [11,13]. Also, the findings of this research are consistent with those stating that egoistic values have no direct effect on behavior (intention to behave) [12]. Contrary to Ref. [46], demonstrating that attitude does not influence intention, the results of this research are in alignment with those revealing that attitude influences the intention to buy [33–38], which is also grounded by the theory of planned behavior. The assumption could be made that analyzing the context of waste separation behavior [46] is the reason for the difference in the results.

The results of this research are in alignment with results revealing that motivation (egoistic and altruistic) influences attitude [30,31]. The findings of this research are consistent with [14], revealing that wealthier consumers may care less for economic savings, which explains why egoistic motives do not encourage sustainable behavior.

Contrary to the findings of [6,10], in this research, it was not found that egoistic motives have a stronger influence on the consumer's intention of buying products. The assumption could be made that analyzed motives for buying organic foods in the context of food and health concerns may be more relevant than in the general FMCG context [6], including many other goods not only food. Ref. [10] analyzed Indian youths' context; thus, differences in findings may be influenced by different cultures and respondents' age, as these are the factors that impact motivation as well.

The findings of the current research add to the existing literature by enlightening the empirical association between income, motives, attitude, and intention. To our knowledge, there is no research so far directly empirically analyzing income as a predictor for motives and attitude in the case of products from recycled materials.

Actual purchasing behavior is not analyzed in this research. Nevertheless, Refs. [47–49] revealed that intention facilitates purchase behaviors. Hence, this research reveals which arguments (egoistic or altruistic) should be highlighted when communicating about the benefits of recycled FMCG and whether they should be changed following the income level of the target market when seeking to influence purchase intention, which, based on theory, leads to the actual purchase.

The revelation of the relation between income, motives, attitude, and intention in the context of FMCG from recycled materials helps to understand consumer behavior and to tailor communication efforts targeted at promoting recycled FMCG. Additionally, governments and organizations can use the insights from the research to design effective policies and interventions that promote the purchase of FMCG from recycled materials. It can be assumed that these findings can be generalized across the Baltic region, given the regional similarities. Moreover, insights on how to increase the use of recycled materials in the FMCG industry, even in one country, have a positive impact on sustainability development and climate change in general.

6. Conclusions, Limitations, and Future Research Opportunities

Understanding consumer motivation and the factors that affect it is crucial to be able to provide the necessary efforts that can encourage a shift towards more sustainable consumption behaviors; income is one of those factors affecting motivation.

Based on the theoretical analysis, the conclusion could be made that the standard sequence of the relation between income, motivation, attitude, and intention to buy is as follows: income directly influences egoistic and altruistic motives as well as an attitude toward products; egoistic and altruistic motives influence attitude toward the products and

intention to buy products; attitude toward the products influence intention to buy products in the specific product category.

As regular consumers spend a very large part of their income on fast-moving consumer goods, it is extremely important to encourage buying them made from recycled materials to achieve a greater level of sustainability in the FMCG from recycled materials market.

The empirical research allows concluding that, in the case of recycled FMCG, the standard sequence of the relation between income, motivation, attitude, and intention to buy does not apply. Based on the research results, the conclusion can be made that income has a direct negative influence on egoistic motives. Furthermore, egoistic motives influence attitude but do not directly or indirectly influence intention. Altruistic motives are not influenced by income and directly influence attitude and intention; moreover, attitude directly influences intention. Therefore, the assumption could be made that altruistic motives encourage forming a positive attitude toward recycled FMCG and stimulate the intention to buy them. Hence, the communication that could result in the highest possibility to develop a sustainable market for FMCG from recycled materials is the one emphasizing altruistic aspects, including rationalization of these aspects with specific calculations supporting these statements. The evidence-based insights drawn in this study could be used by companies both producing and trading FMCG made from recycled materials. Moreover, the results could be valuable even for governing bodies seeking greater sustainability and circular economy scope.

The main limitation of this research was the relatively small sample size. Moreover, all respondents for the research were from Lithuania; thus, different cultures, economic conditions, and environmental awareness apparent in different countries were not directly considered in this research. Given the regional similarities, it can be assumed that the insights gained can be shared across the Baltic region. Hence, future research may consider bigger sample sizes and analyses of the results by other socio-demographic factors or other factors that influence consumer motivation (e.g., gender, family, culture, social class, etc.). In addition, when analyzing additional factors that influence consumer motivation, the synergy effect of the variables may produce different effect sizes, hence this may also be considered for future research.

Additionally, in different countries, different possible efforts to promote the use of products from recycled materials may be applied, in which case the results of the research are also likely to be different. Furthermore, future research may consider dividing FMCG into smaller product categories and adapting the model to the other product categories.

Another limitation of the research was the analysis of the purchase intention instead of the actual purchasing behavior. Hence, future research could consider the analysis of the influence of determined factors on consumer purchase behavior.

Moreover, the model represents the current situation; thus, in time, if efforts to promote the use of products from recycled materials and/or the economic situation of the country and/or other factors change, the model may also change. In such a case, the research should be repeated.

Data Availability Statement: Data are available upon request from researchers who meet the eligibility criteria. Kindly contact the first author privately through e-mail.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. UN. Environment Programme. Available online: https://www.unep.org/ (accessed on 15 May 2023).
2. WWF. Available online: https://www.worldwildlife.org/pages/no-plastic-in-nature?s_subsrc=homepage (accessed on 15 May 2023).
3. U.S. Chamber of Commerce Foundation. Available online: https://www.uschamberfoundation.org/reports/beyond-34-case-study-report (accessed on 16 May 2023).
4. Sustainable Brands. Available online: https://sustainablebrands.com/ (accessed on 16 May 2023).
5. Durmaz, Y.; Diyarbakırlıoğlu, I. A Theoritical Approach to the Strength of Motivation in Customer Behavior. *Glob. J. Hum. Soc. Sci.* **2011**, *11*, 37–42.
6. Wei, S.; Liu, F.; She, S.; Wu, R. Values, Motives, and Organic Food Consumption in China: A Moderating Role of Perceived Uncertainty. *Front. Psychol.* **2022**, *13*, 736168. [CrossRef] [PubMed]
7. Kler, J.; Prasad, S.; Prasad, A.B.; Goswami, R.; Mitra, G.S. Factors affecting consumer buying motivations: An empirical study in the behavioral economics perspectives. *J. Posit. Sch. Psychol.* **2022**, *6*, 711–717.
8. Abu Auf, M.A.; Meddour, H.; Saoula, O.; Majid, A.H.A. Consumer buying behaviour: The roles of price, motivation, perceived culture importance, and religious orientation. *J. Bus. Retail Manag. Res.* **2018**, *12*, 177–186.
9. Hansen, T.; Sørensen, M.I.; Eriksen, M.-L.R. How the interplay between consumer motivations and values influences organic food identity and behavior. *Food Policy* **2018**, *74*, 39–52. [CrossRef]
10. Kumar, A.; Pandey, M. Social Media and Impact of Altruistic Motivation, Egoistic Motivation, Subjective Norms, and EWOM toward Green Consumption Behavior: An Empirical Investigation. *Sustainability* **2023**, *15*, 4222. [CrossRef]
11. Prakash, G.; Choudhary, S.; Kumar, A.; Garza-Reyes, J.A.; Khan, S.A.R.; Panda, T.K. Do altruistic and egoistic values influence consumers' attitudes and purchase intentions towards eco-friendly packaged products? An empirical investigation. *J. Retail. Consum. Serv.* **2019**, *50*, 163–169. [CrossRef]
12. Liang, J.; Li, J.; Lei, Q. Exploring the Influence of Environmental Values on Green Consumption Behavior of Apparel: A Chain Multiple Mediation Model among Chinese Generation Z. *Sustainability* **2022**, *14*, 12850. [CrossRef]
13. Druică, E.; Ianole-Călin, R.; Puiu, A.-I. When Less Is More: Understanding the Adoption of a Minimalist Lifestyle Using the Theory of Planned Behavior. *Mathematics* **2023**, *11*, 696. [CrossRef]
14. Murarolli, M.S. Exploring the Relative Impacts of Altruistic, Biospheric, and Egoistic Motivations to Adopt Green Housing Features. Ph.D. Thesis, University of Missouri, Columbia, MO, USA, 2014.
15. Swami, V.; Chamorro-Premuzic, T.; Snelgar, R.; Furnham, A. Egoistic, altruistic, and biospheric environmental concerns: A pathanalytic investigation of their determinants. *Scand. J. Psychol.* **2010**, *51*, 139–145. [CrossRef]
16. Statista. Available online: https://www.statista.com/markets/415/consumer-goods-fmcg/ (accessed on 17 May 2023).
17. The Consumer Goods Forum. Available online: https://www.theconsumergoodsforum.com/blog/2022/06/20/the-future-of-ethical-commerce-and-sustainability-in-fast-moving-consumer-goods-companies-fmcg/ (accessed on 15 July 2023).
18. McKinsey Sustainability. Available online: https://www.mckinsey.com/capabilities/sustainability/our-insights/mapping-the-benefits-of-a-circular-economy (accessed on 15 July 2023).
19. European Parliament. Available online: https://www.europarl.europa.eu/news/en/headlines/society/20201208STO93327/the-impact-of-textile-production-and-waste-on-the-environment-infographics (accessed on 15 July 2023).
20. Sharma, S.; Lal, K. Changing consumer behaviour—A challenge for sustainable business growth. *Int. J. Mark. Financ. Serv. Manag. Res.* **2012**, *1*, 149–158.
21. Sivapalan, A.; von der Heidt, T.; Scherrer, P.; Sorwar, G. A consumer values-based approach to enhancing green consumption. *Sustain. Prod. Consum.* **2021**, *28*, 699–715. [CrossRef]
22. Vazquez-Martínez, U.J.; Morales-Mediano, J.; Leal-Rodríguez, A.L. The impact of the COVID-19 crisis on consumer purchasing motivation and behavior. *Eur. Res. Manag. Bus. Econ.* **2021**, *27*, 10016. [CrossRef]
23. Hein, N. Factors Influencing the Purchase Intention for Recycled Products: Integrating Perceived Risk into Value-Belief-Norm Theory. *Sustainability* **2022**, *14*, 3877. [CrossRef]
24. Huhtala, A. Income effects and the inconvenience of private provision of public goods for bads: The case of recycling in Finland. *Ecol. Econ.* **2010**, *69*, 1675–1681. [CrossRef]
25. Alipour, M.; Zare, S.G.; Taghikhah, F.; Hafezi, R. Sociodemographic and individual predictors of residential solar water heater adoption behaviour. *Energy Res. Soc. Sci.* **2023**, *101*, 103155. [CrossRef]
26. Geng, J.; Yang, N.; Zhang, W.; Yang, L. Public Willingness to Pay for Green Lifestyle in China: A Contingent Valuation Method Based on Integrated Model. *Int. J. Environ. Res. Public Health* **2023**, *20*, 2185. [CrossRef]
27. Wekeza, S.V.; Sibanda, M. Factors Influencing Consumer Purchase Intentions of Organically Grown Products in Shelly Centre, Port Shepstone, South Africa. *Int. J. Environ. Res. Public Health* **2019**, *16*, 956. [CrossRef]

28. Wang, L.; Wong, P.P.; Narayanan, E.A. The demographic impact of consumer green purchase intention toward Green Hotel Selection in China. *Tour. Hosp. Res.* **2020**, *20*, 210–222. [CrossRef]
29. Kumar, S.; Yadav, R. The impact of shopping motivation on sustainable consumption: A study in the context of green apparel. *J. Clean. Prod.* **2021**, *295*, 126239. [CrossRef]
30. Won, J.; Kim, B.-Y. The Effect of Consumer Motivations on Purchase Intention of Online Fashion—Sharing Platform. *J. Asian Financ. Econ. Bus.* **2020**, *7*, 197–207. [CrossRef]
31. Pop, R.-A.; Săplăcan, Z.; Alt, M.-A. Social Media Goes Green—The Impact of Social Media on Green Cosmetics Purchase Motivation and Intention. *Information* **2020**, *11*, 447. [CrossRef]
32. Hasbullah, N.N.; Sulaiman, Z.; Mas'od, A.; Ahmad Sugiran, H.S. Drivers of Sustainable Apparel Purchase Intention: An Empirical Study of Malaysian Millennial Consumers. *Sustainability* **2022**, *14*, 1945. [CrossRef]
33. Ferreira, S.; Pereira, O. Antecedents of Consumers' Intention and Behavior to Purchase Organic Food in the Portuguese Context. *Sustainability* **2023**, *15*, 9670. [CrossRef]
34. Kumar, R.; Kumar, K.; Singh, R.; Sá, J.C.; Carvalho, S.; Santos, G. Modeling Environmentally Conscious Purchase Behavior: Examining the Role of Ethical Obligation and Green Self-Identity. *Sustainability* **2023**, *15*, 6426. [CrossRef]
35. Kim, Y. A Study of the Integrated Model with Norm Activation Model and Theory of Planned Behavior: Applying the Green Hotel's Corporate Social Responsibilities. *Sustainability* **2023**, *15*, 4680. [CrossRef]
36. Ruangkanjanases, A.; You, J.-J.; Chien, S.-W.; Ma, Y.; Chen, S.-C.; Chao, L.-C. Elucidating the Effect of Antecedents on Consumers' Green Purchase Intention: An Extension of the Theory of Planned Behavior. *Front. Psychol.* **2020**, *11*, 1433. [CrossRef]
37. Harjadi, D.; Gunardi, A. Factors affecting eco-friendly purchase intention: Subjective norms and ecological consciousness as moderators. *Cogent Bus. Manag.* **2022**, *9*, 2148334. [CrossRef]
38. Wong, S.-L.; Hsu, C.-C.; Chen, H.-S. To Buy or Not to Buy? Consumer Attitudes and Purchase Intentions for Suboptimal Food. *Int. J. Environ. Res. Public Health* **2018**, *15*, 1431. [CrossRef]
39. Onel, N.; Mukherjee, A. Why do consumers recycle? A holistic perspective encompassing moral considerations, affective responses, and self-interest motives. *Psychol. Mark.* **2017**, *34*, 956–971. [CrossRef]
40. Ioannou, T.; Zampetakis, L.A.; Lasaridi, K. Psychological determinants of household recycling intention in the context of the theory of planned behaviour. *Fresenius Environ. Bull.* **2013**, *22*, 2035–2041.
41. Hair, J.F.; Ringle, C.M.; Sarstedt, M. PLS-SEM: Indeed a Silver Bullet. *J. Mark. Theory Pract.* **2011**, *19*, 139–152. [CrossRef]
42. Hair, J.F., Jr.; Hult, G.T.M.; Ringle, C.M.; Sarstedt, M. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*; Sage Publications: Thousand Oaks, CA, USA, 2014; p. 307. ISBN 978-1-4522-1744-4.
43. Soper, D.S. A-Priori Sample Size Calculator for Structural Equation Models [Software]. 2023. Available online: https://www.analyticscalculators.com/calculator.aspx?id=89 (accessed on 15 April 2023).
44. Ringle, C.M.; Wende, S.; Becker, J.-M. SmartPLS 4. Oststeinbek: SmartPLS GmbH. 2022. Available online: http://www.smartpls.com (accessed on 15 April 2023).
45. Henseler, J.; Ringle, C.M.; Sarstedt, M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J. Acad. Mark. Sci.* **2015**, *43*, 115–135. [CrossRef]
46. Xu, L.; Ling, M.; Lu, Y.; Shen, M. Understanding Household Waste Separation Behaviour: Testing the Roles of Moral, Past Experience, and Perceived Policy Effectiveness within the Theory of Planned Behaviour. *Sustainability* **2017**, *9*, 625. [CrossRef]
47. Rosenthal, S. Procedural Information and Behavioral Control: Longitudinal Analysis of the Intention-Behavior Gap in the Context of Recycling. *Recycling* **2018**, *3*, 5. [CrossRef]
48. Fan, B.; Yang, W.; Shen, X. A comparison study of 'motivation–intention–behavior' model on household solid waste sorting in China and Singapore. *J. Clean. Prod.* **2019**, *211*, 442–454. [CrossRef]
49. Jain, V.K.; Gupta, A.; Tyagi, V.; Verma, H. Social media and green consumption behavior of millennials. *J. Content Community Commun.* **2020**, *11*, 221–230. [CrossRef]