The Intention to Purchase Recycled Products: Towards an Integrative Theoretical Framework

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The Intention to Purchase Recycled Products: Towards an Integrative Theoretical Framework

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Abstract: The growing interest of the scientific literature regarding purchase behavior, circular economy and new business models has generated the need, as well as the opportunity, for a comprehensive review and categorization of the state of the existing research carried out so far. The present study aims at reconciling the wide but fragmented literature dealing with the purchase intention of recycled products. An integrative theoretical framework, able to combine several constructs, perspectives, and theories discussed to date on the topic, is proposed. Such framework represents a further step toward a comprehensive understanding of behavioral theories and constructs, which need to be understood to design effective business models for the circular economy. This effort could be highly valuable both for scholars interested in the topic—as the integrative framework could assist them in theorizing additional effects—and for firms' managers—who can understand, more in depth, the drivers of the consumers' purchasing process and act accordingly.

Keywords: recycled products; intention to purchase; circular economy; behavioral theories

1. Introduction

The issues related to the environment and sustainability, such as the production and recycling of waste, the scarcity of natural resources and sustaining economic benefits, have attracted the attention of several researchers (e.g., [1–11]). In this context, the Circular Economy (CE) model has acquired considerable importance in recent years [12–18]. The CE is a new business model that should lead to a more sustainable development with the aim of increasing resource efficiency by promoting product reconstruction (e.g., [19–25]). Referring to the perspective of sustainable development, the CE can be defined as: "a regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops" [26] (p. 759).

In recent times, the attentions of the scientific literature and practitioners have focused on recycled products due to their significant potential economic and ecological benefits. Used products can be recycled and remanufactured into products with "like new" conditions. These products, after their first use, maintain a residual value that can be recovered by subjecting them to a new process. Thus, the recovered products can be reintroduced to the market for trade [27–29]. However, to start this process, it is necessary to obtain the used products from consumers.

Products can be rebuilt using remanufacturing, refurbishing or recycling processes [30]. The remanufacturing process involves restoring obsolete components of the original product or adding updated ones, thus elevating used products to the quality standard of new ones. To carry out the remanufacturing process, the consumption of energy and materials is reduced. The new product will therefore be offered to the market at a lower cost with respect to the original one [31]. Instead, the refurbishment process involves rebuilding or replacing major components of the original product, in order to obtain a new product with a lower performance specification and a more limited warranty.

Finally, the recycling process involves disassembling individual parts of used products and reusing them to manufacture new products [32]. Even though we are aware of the differences which characterize each process, in this paper we consider them as having a similar meaning from the consumers' viewpoint. Therefore, in what follows, the terms remanufacturing, refurbishing and recycling will be used interchangeably.

Understanding whether such reverse cycles can be translated into profitable and sustainable businesses can be seen as a matter of business models that are successfully based on CE principles under certain market conditions [33,34]. Business models can be considered profit-making plans that define how the business creates economic value for a company by creating value for its customers, also describing the systems of value creation adopted [34,35].

According to several scholars (e.g., [36,37]), it is necessary to distinguish with regard to value creation: (a) value propositions (i.e., the benefits offered to customers based on products), (b) how value propositions are delivered to customers by engaging actors and value delivery processes, (c) how value is created (i.e., the actors and activities involved in value-creating processes), and (d) value appropriation/capture (i.e., how focal companies capture part of the created value, how they earn money).

The concept of value appropriation/capture, which depends on the purchase (or not) by consumers of a certain product, is important to determine the value creation system of a company and to maintain its ability to develop and offer value propositions [38].

Therefore, in the context of the CE, investigating consumers' intention to purchase remanufactured or recycled products is of paramount importance for reasons of appropriation/capture of value, as confirmed by the huge number of studies on the subject (e.g., [39,40]). This remarkable interest refers to the fact that product reconstruction is a profitable option for firms, although on the consumers' side this process is in some cases perceived negatively (e.g., [30,41].

The adversity that consumers may have regarding reconstructed products depends on several reasons. Recycled products are often perceived as second-hand products, thus some consumers believe that their use may involve a risk [42], their quality is lower than the original product [43], and the benefits of using them are lower [44]. Moreover, in some cases consumers assume a personal negative attitude [41] and of low confidence towards these products [40].

These different perceptions and the need to develop interdisciplinary research linking different areas of knowledge, such as industrial ecology and psychology, motivate our interest in studying the conditions that influence consumers' intention to purchase a recycled/remanufactured product. Understanding the process of purchasing a recycled product involves considerations deriving from multiple disciplines and theories, which make the investigation of the problem stimulating.

In this regard, we have observed that the scientific literature analyzes in a fragmented way the intention to purchase remanufactured or recycled products by consumers at different levels of analysis, investigating different constructs, based on different theoretical models, with different approaches.

There is, therefore, no in-depth study on consumers' intention to purchase towards this particular type of product. Recent research (e.g., [34,45]) has highlighted the need to consider the role played by marketing policies to better understand these behavioral patterns.

In our view, there is a need to have an overview of the extensive but fragmented literature that deals with the subject by developing a comprehensive framework based on different perspectives and

theories, which have never been combined together. To this end, we performed a systematic literature review of studies that examined consumer propensity to purchase recycled products.

A further clarification is needed before continuing. When doing a systematic review, you need to define the boundary of what is being investigated. The intention to purchase recycled products is essential to understanding the phase of appropriation/acquisition of value, which in turn is part of a specific business model for companies.

The literature dealing with purchase intention and product remanufacturing/recycling includes the study of different value acquisition activities that belong to different business models. For example, the purchase of a recycled non-food product (such as an auto-part), the payment of a fee for sidewalk recycling (for the recycling of plastic), or the purchase of fresh food irrigated with recycled water.

Conscious that each of these diverse aspects involves different variables and value capture activities and stimulates different mental process for the consumer—thus referring to different research streams of the literature—we decided to focus our research on the purchase of recycled non-food products, thus ignoring other options.

The goal of our research is to contribute to the existing literature by developing a comprehensive new framework that combines multiple constructs and theories in order to examine the intention to purchase a recycled product. We believe this effort could be highly valuable both for scholars interested in the topic—as the integrative framework could assist them in theorizing additional effects—and for firms' managers—who can understand more in depth the drivers of the consumers' purchasing process and act accordingly.

The paper is structured as follows: Section 2 describes in detail the methodology used for literature mining and significant features of the studies selected for the review; Section 3 shows the constructs emerged from the analysis of the literature and proposes the integrative theoretical framework; Section 4 highlights the main implications of the study.

2. Methodology

2.1. Objective and Methodology

This study consists of a systematic review of the literature dealing with articles that investigate the intention to purchase recycled products combined with a theoretical analysis aimed at developing an integrated theoretical framework. The objective is to define a framework which combines different constructs, perspectives and theories discussed on the topic so far.

More in detail, the progress of research on this subject has been systematized by focusing on the identification of the constructs and the relationships existing between them, considering different theories and perspectives. We chose to conduct a systematic review primarily because the application of the principles of systematic review helps to provide more reliable results, upon which conclusions are drawn. Secondly, this type of review is preferable to a narrative one since the latter has been widely criticized for its lack of relevance due to the use of a personal, and usually subjective, methodology [46–48].

Following the guidelines of Tranfield et al. [47], we carried out an accurate scientific review process, which required us to plan and implement a review strategy. Specifically, in starting the review process, two fundamental elements were required: a clear definition of inclusion criteria and a precise strategy for the identification and selection of the studies to be examined [49].

2.2. Data Sources and Study Selection

Table 1 schematically represents the systematic review process adopted, together with the systematic review flow diagram, depicted in Figure 1. Specifically, we carried out an extensive review of the literature by adopting a five-phased methodology. First, we selected the ABI/INFORM, JSTOR, JCR, SCOPUS, EMERALD, EBSCO databases (Phase 1). Then (Phase 2), before performing the search queries, we formally outlined the boundaries of the research (e.g., [47,48]). This requires us to

preliminarily define concepts and manuscripts of interest for the subsequent review. In our context, this means to clarify the meaning of the "purchase intention" concept.

Table 1. Overview of the systematic review process adopted.

Phase 1. Selecting the Databases
• ABI/INFORM, JSTOR, JCR, SCOPUS, EMERALD, EBSCO (academic search elite and business source elite).
Phase 2. Definition of the Inclusion Criteria
• Manuscripts investigating the intention to purchase recycled products • Manuscripts investigating food products, curbside issues, etc., are not considered • Manuscripts published on peer-reviewed journals
Phase 3. Search Words Used
• Refurbish*, recycle*, remanufacture*, renew*, recondition*, purchas*, intention to pay, willingness to pay, willingness to buy, intention to buy
Phase 4. Articles Filtered
• Articles filtered based on their title, abstract and content
Phase 5. Data Synthesis and Integrative Framework Development
• Summarizing data in a Microsoft Word table • Framework development through the implementation of three rounds of analysis and discussions

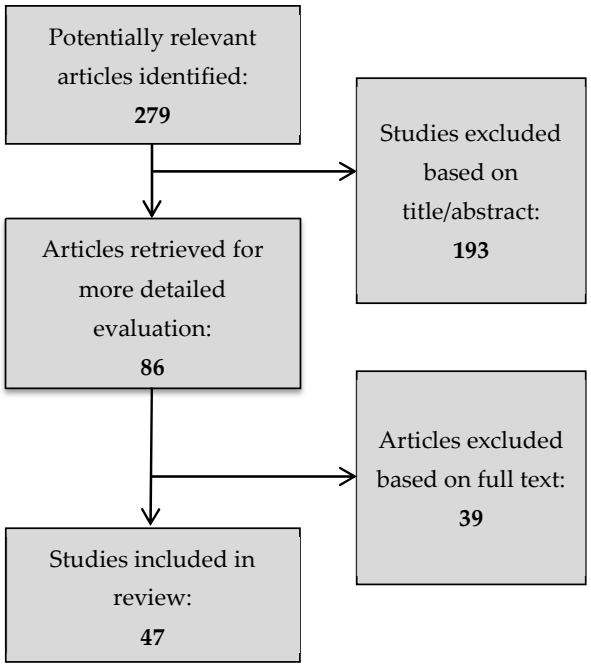

Figure 1. Systematic review flow diagram.

2.2.1. Purchase Intention in the Current Research

With the term "purchase intention", we refer to a decision to act or a psychological state that represents the consumer's perception about engaging in a purchase behavior (e.g., [44,50–52]). Some authors refer to purchase intention by using other labels, such as willingness to buy or intention to buy. In these cases, the meaning is the same.

Conversely, there is another concept that is frequently used as alternative to purchase intention, with a similar but slightly different meaning—willingness to pay. Willingness to pay is defined as the maximum price a buyer is willing to pay (e.g., [53,54]). While the willingness to pay expresses the intention to purchase a given product by eliciting the maximum price a consumer would pay for it [55], the purchase intention refers to a situation in which the price of the product is already known to the consumer [56]. However, both concepts underlie the consumer's intention to buy the product, thus representing the same behavioral intention. Eventually, for the purpose of the present study, we considered manuscripts dealing with purchase intention, its different above-mentioned labels and willingness to pay.

2.2.2. Further Inclusion Criteria

In addition, we defined the following additional criteria, which derive from the objective of the review:

- Manuscripts investigating food products, curbside issues, etc., were not considered, as they belong to different literatures that are not of interest for the purpose of the present study;
- Be an article published on a peer-reviewed journal. This choice was made to consider more authoritative contributions, following Podsakoff et al. [57].

Then (Phase 3), we used combinations of the following keywords to create search queries: refurbish*, recycle*, remanufactur*, renew*, recondition*, purchas*, intention to pay, willingness to pay, willingness to buy, intention to buy. By doing that, we identified 279 manuscripts to be considered for further steps (search was performed on May 2019). They were then subjected to a double screening. A first sorting of the articles' title and abstract allowed us to exclude 193 papers which did not meet the inclusion criteria. This left us with 86 potential articles for thorough analysis.

The second screening went beyond the title and abstract into the main text of the articles, thus we read each one of these 86 articles in detail in order to make sure that they suited the requirements of the research (Phase 4). At the end of this stage, we were able to exclude 39 articles, which did not fit the research aim. This left a total of 47 studies that matched the inclusion criteria and could be further analyzed (see Appendix A, Table A1 for the complete list of studies included).

2.3. Data Synthesis and Integrative Framework Development

In this stage (Phase 5) each article has been summarized in a Microsoft Word table in order to make the comprehension and the comparison with the other articles in the sample more straightforward. Specifically, each row of the table corresponds to an article while the columns contain the following information about each article: author(s), title, publication journal, year of publication, author's keywords, abstract, methodology and investigated constructs. All the articles included in the review have been read and analyzed by all the authors, each of whom compiled their own version of the table by entering the required information. At the end of this first operation, the authors compared the tables and resolved the differences of opinion through discussion. This summary of the data has been of fundamental importance to lay the foundation for the subsequent analysis and its outcome has been a list of the constructs identified in the considered articles. To carry out this first part of the analysis, we have been inspired by the work of Parida et al. [18] in which a series of iterations has been conducted in order to detect the main themes and constructs then used to construct the proposed framework.

Since our work starts from the identification of a research gap in the existing literature—i.e., not all the relationships among constructs have been addressed, there are many contrasting arguments, several theories have been considered and there is not a model including all constructs—we searched for theoretical argumentations that could explain relationships among constructs. To do this, we searched for additional (with respect to those included in the systematic review) studies that have attempted to integrate such constructs following different theoretical approaches.

To develop the final version of the integrative framework, three rounds of analysis and discussions were performed. In each round, all the authors have carried out thorough research and consensus has been reached through a well-structured debate. Specifically, each author, after having read independently each contribution, having grouped the constructs in a meaningful way and having identified the relationships between them, proposed his own version of the framework. In this preliminary version, each author has justified every relationship with theoretical explanations and, finally, has produced a report in order to easily share with other authors what has been achieved.

Subsequently, all reports were compared and discussed. The second round of discussion took place after four weeks. During this timeframe, the authors refined the framework in light of the comparison with those proposed by the others. During the second meeting, contrasting positions were debated and authors tried to reach consensus, sketching a potential integrative framework that considers all constructs and relationships. In the third and last round, which took place a week after the second meeting, the authors reached consensus converging on the final version of the proposed integrative framework.

3. The Integrative Theoretical Framework

3.1. Three Main Blocks

In the first phase of the analysis, a great variety of constructs that have an impact on the purchase intention has been found (Table 2). A thorough analysis of them showed that they refer to different perspectives rooted in the management, industrial ecology, marketing, sociology and psychology literatures. For this reason, we decided to follow an approach similar to the one proposed by Bloch and Richins [58] in their product importance framework, considered by the authors the best method to classify the resulted constructs. Following this approach, we grouped the constructs into three main blocks: the individual related, the product related and the context related. The first one includes the constructs that explain those values, beliefs, norms and attitudes that lead an individual behavior towards a given intention to act. The second block contains constructs that can be traced back to the object of the purchase evaluation, i.e., the product. The third block contains the factors that can influence the perception of a product, namely, the context.

Table 2. Constructs emerged from the analysis of the literature.

Block	Construct	Definition	Source
Individual-related	Altruistic values	Values defined as being concerned about the welfare for other humans.	[59]
	Biospheric values	Values defined as being concerned about nature and the biosphere itself.	[59]
	Environmental consciousness (Environmental concern)	The extent to which consumers are worried about threats to the environment.	[39,41,44,51,52,60–66]
	Awareness of consequences	The tendency to become aware of the consequences of one's behavior for others.	[59,67]
	Ascription of responsibility	The individual tendency to accept rationales for denying responsibility for the consequences of one's behavior.	[59]
	Subjective norms	The perceived social pressure to perform or not to perform a given behavior.	[60,63,68–71]
	Personal norms	Self-expectations for specific action in particular situations that are constructed by the individual.	[63]
	Perceived behavioral control	Perceived ease (or difficulty) of performing the behavior and is susceptible to individuals' psychological state.	[60,63,69,71]

Table 2. *Cont.*

Block	Construct	Definition	Source
Individual-related	Ambiguity tolerance	The way individuals evaluate and respond to ambiguous situations and information characterized by an array of complex, unfamiliar, or inconsistent clues.	[70,72]
	Attitude	The degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question.	[52,60,68–71,73,74]
	Perceived value	The consumer's perception of the trade-off between perceived benefit and perceived sacrifice.	[40,42,44,51,67,74–76]
	Perceived risk	The consumer's perception of the uncertainty and concomitant adverse consequences of buying a product or service.	[40,42,44,51,52,60,63, 64,67,74,76–83]
Product-related	Warranty and certification	Certifications guarantee the customer that the product is compliant with pre-set standards, while warranties are written assurances issued by the remanufacturers promising to repair or replace the recycled product, if necessary, within a determined period of time.	[39,61,68,84–88]
	Brand equity	The value determined by consumer perception of and experiences with the brand.	[65,66,68,79,85]
	Price	An evaluation made by consumers when comparing the selling and reference prices.	[40,43,44,61,65,66,68, 73,85,89–92]
	Quality and functionalities	It refers to the understanding of the fact that significant resource and energy savings as well as solid waste reductions are available through the recovery of used components and their subsequent remanufacturing.	[30,40,42,44,61,66–68, 81,87,93–95]
	Green characteristics	It is the subjective qualitative belief a potential consumer has regarding the seller.	[84,93,96]
Context-related	Seller reputation	It refers to the information and beliefs that buyers have about a seller's skills and behavior.	[61,68,85]
	Promotion	It refers to the marketing communication used to make the offer known to potential customers and persuade them to investigate it further.	[68]
	Distribution	It refers to direct or indirect channels to market, geographical distribution, territorial coverage, retail outlet, market location, inventory, logistics and order fulfilment.	[68]

Moreover, different theoretical models rooted in psychology, sociology, and marketing were adopted by scholars to investigate relationships among constructs, which lead to a fragmented literature. Consequently, with the aim to reduce the theoretical complexity, we integrate several theories into a framework (Figure 2) that explain how constructs are related across different models.

3.2. Individual Related Constructs and Theories

Considering the first block of the model, including constructs ascribable to values, beliefs, attitudes, and norms that drive an individual toward a given intention to act, the present systematic review firstly confirmed what has been highlighted in previous reviews grounded in environmental psychology (e.g., [60,97,98]): the Theory of Planned Behavior (TPB) [99], the Norm Activation theory (NAT) [100], and the Value-Belief-Norm theory (VBN) [101] are the most commonly used theories in the environmental psychological domain.

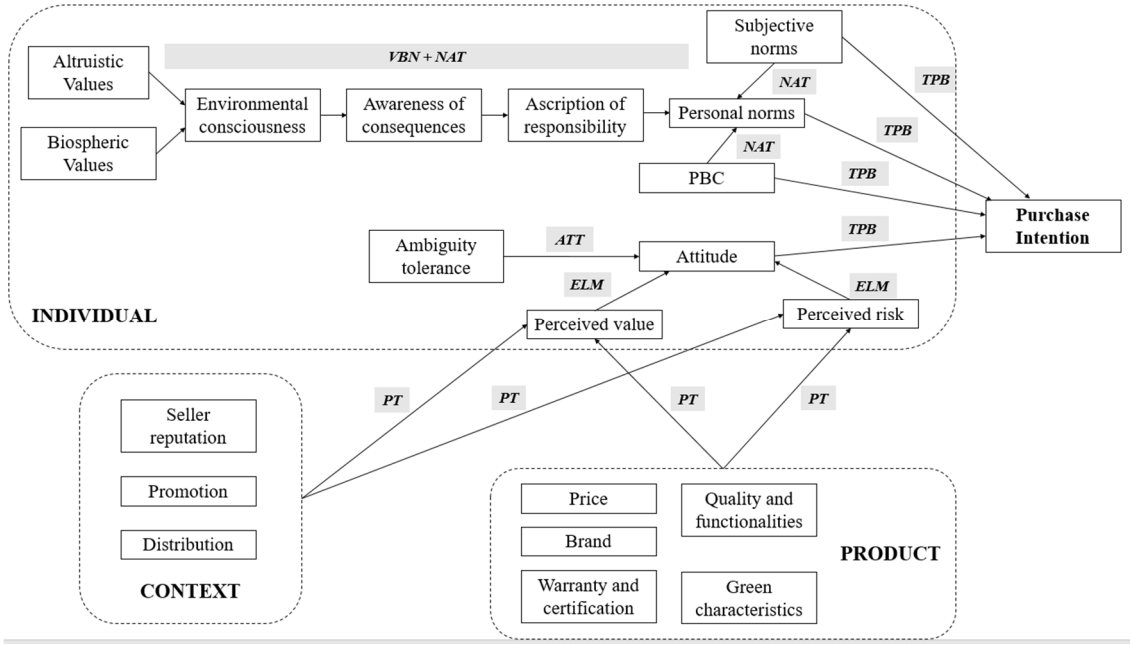

Figure 2. The theoretical integrative framework (Legend: VBN = Value-Belief-Norm theory, NAT = Norm Activation theory, TPB = Theory of Planned Behavior, ATT = Ambiguity Tolerance theory, ELM = Elaboration-Likelihood model, PT = Prospect theory).

3.2.1. Theory of Planned Behavior (TPB)

The TPB has been widely used in the literature to study consumers' perception of recycled products (e.g., [44,68,102]). This theory is gathered in a model that explains how the intention to perform a precise behavior, for example, the intention to buy a recycled product, derives from the interaction of three subjective constructs: the attitude, the subjective norms and the perceived behavioral control [99].

The attitude towards behavior concerns the appraisal, both favorable and unfavorable, that an individual makes of such behavior [99]. Generally speaking, it can be defined as the individual's psychological tendency that is shown when he has to express a certain degree of favor or disfavor with regard to a behavior [98]. In our integrative framework, the behavior is the purchase of a recycled product, therefore the attitude towards the purchase results in an overall positive or negative assessment by the individual regarding the purchase of a recycled product (e.g., [71,74]) and as such it is a direct antecedent to the purchase intention.

Among the antecedents of attitude, ambiguity tolerance has received attention in the recycled products literature (according to the theory of ambiguity tolerance, ATT). Ambiguity tolerance is a trait of the individual's personality and it assesses how he or she responds to situations or information characterized by uncertainty and unpredictability [70]. An individual with a high ambiguity tolerance is more likely to accept uncertain situations, whereas a low tolerance to ambiguity is typical of an individual who has difficulty in dealing with ambiguous situations and unpredictable outcomes. In the context of recycled products, the ambiguity tolerance focuses on the recycled production processes and the quality of recycled products.

Subjective norms are related to the belief that people, understood as the society or as a group of influential people, approve a certain behavior. Accordingly, subjective norms refer to the social pressure that the individual feels and that forces him to behave in a way that conforms to the opinions of such people [99]. For the purpose of this study, an individual's view towards the purchase of a recycled product may be influenced by the opinions of others, such as family, friends or the community [69]. By definition, this view directly affects the individual's purchase intention.

Lastly, perceived behavioral control (PBC) depends on the individual's psychological state and refers to the individual's perception of his ability to perform a certain behavior [70]. Following TPB, the confidence of a consumer in the decision to purchase a recycled product depends on past experiences and any obstacles faced [69]. In our framework, as well as in the structures mentioned above, it directly influences the purchase intention.

3.2.2. Norm Activation Theory (NAT) and Value-Belief-Norm Theory (VBN)

Many scholars (e.g., [103–105]) have integrated the Theory of Planned Behavior [99] with the Norm Activation theory [100] in order to explain environmentally friendly behavior, such as the intention to purchase recycled products.

According to NAT [100], the behavior, that in our integrative framework is represented by the purchase intention, is preceded by three antecedents: personal norms, the awareness of consequences and the ascription of responsibility.

Schwartz [100] argues that personal norms are self-expectations of a specific action in a particular situation; therefore, they are linked to the experience of a moral obligation to perform a specific behavior. Since in the NAT the personal norms construct is directly linked to the behavioral intention, in accordance with Park and Lin [63] in our integrative framework it has a direct impact on the intention to purchase recycled products. The awareness of consequences refers to an individual's understanding of the consequences that his behavior may have on others, while the ascription of responsibility refers to an individual's sense of responsibility for the negative consequences caused by his own behavior [100].

In our framework, to explain the relationships among personal norms, ascription of responsibility and awareness of consequences, the Value-Belief-Norm model [101] has been chosen. In fact, following Stern's reasoning (2000) [101], we believe that awareness of consequences is an antecedent of the ascription of responsibility. Moreover, the VBN model traces back the roots of personal norms, i.e., values and beliefs, which are widely investigated constructs in the recycled products literature [98].

According to the VBN model, awareness of consequences is influenced by the environmental consciousness construct [59,98], conceptualized as the extent to which consumers are worried about threats to the environment [63]. In other words, it is the level of importance given to factors that impact the healthiness and sustainability of the ecosystem we live in [52,59]. Finally, the environmental consciousness construct is concurrently influenced by two values: altruistic and biospheric. Altruistic values refer to an individual's concern towards other humans' welfare, while biospheric values deal with an individual's concern about ecosystems or the biosphere [59,98].

3.3. Product and Context Related Constructs and Theories

The Expected Utility theory [106] has been considered a milestone in the literature concerning the analysis of decision making under risky conditions. In fact, it has been considered as a normative model of rational choice and economic behavior [107]. It states that an individual faced with risky outcomes resulting from different choices will behave in a way that maximizes the expected value of the function of the potential outcomes. However, some scholars (e.g., [44,72]) argue that this theory may not best represent consumers' reactions to recycled products because of the value and risk factors that should be considered.

3.3.1. Prospect Theory (PT)

In this context, a useful lens through which considering elements that might be more useful in deterministic contexts is Prospect theory [107]. The theory aims to explain the changes in decision-making processes when individuals have to face situations that are considered risky. It assumes that rational individuals underestimate the outcomes that are simply probable when compared with outcomes obtained with certainty.

Thus, perceived value is assigned to both gains and losses rather than only to final assets and people evaluate these losses and gains using heuristics rather than optimal decisions.

Moreover, according to Wang and Hazen [42] the Prospect theory helps to better understand the propensity of consumers to make a choice that involves a certain degree of risk, such as the purchase of recycled products, believing that both the perceived risk and the perceived value are two fundamental parameters that consumers take into account. Specifically, perceived value is defined as the overall assessment made by the consumer regarding the utility of a product or service, and it is based on the perceived trade-off between perceived benefit and perceived sacrifice [108].

On the contrary, the perceived risk depends on the uncertainty of the final outcome and the possibility of potential losses associated with the purchase [109]. Due to its general definition, the concept of perceived risk includes different types of risk, among these are financial, performance, social and physical risks [42]. Both perceived value and risk significantly and systemically influence decision outcomes [110].

According to Prospect theory, the choice process consists of two consequent phases: an early phase of "editing" and a subsequent one of "evaluation" [42,107].

The former consists of a first analysis of the different prospects proposed in order to simplify the problem, while in the latter the individual places a value to each prospect and chooses the one with the highest value.

Prospect Theory: Editing Stage

The purpose of the first phase, the editing stage, is to transform the outcomes and probabilities associated with the offered prospects through the application of different operations [107]. According to the felt involvement perspective [111], the level of an individual's felt involvement is a function of situational and intrinsic factors. Situational sources of personal relevance (SSPR) are a plethora of specific contextual stimuli and contingencies in the consumer's surrounding that are perceived as personally relevant in the context of that particular situation [111]. Our systematic review highlights promotion, seller reputation, and distribution as relevant contextual stimuli and contingencies.

Jiménez-Parra et al. [68] stated that promotion, and more in general marketing strategies, may represent a SSPR for consumers. In fact, effective advertising can create contingencies in consumer decision-making process, giving rise to personally relevant objectives such as the tendency to save money or the propensity to be thrifty with the resources available [111]. For this reason, promotion can increase perceived value and lower perceived risk [112].

As far as the seller reputation is concerned, Akerlof [113] and Subramanian and Subramanyam [84] agree that reputable sellers can greatly influence an individual's perception of a product. In fact, if the potential consumer has doubts about the quality of a product or service, the presence of a reputable seller has an impact on both perceived value and risk through to the credible communication of quality.

Even the distribution variable, intended as the availability of a product or the distribution coverage, is able to influence the consumer's perception of a given product. In fact, it can be seen by the consumer as a signal of good quality and prestige of the product (e.g., [68,114,115]), and therefore it enhances the perceived value and lowers the perceived risk associated with its purchase.

In contrast, intrinsic sources of personal relevance (ISPR) derive from past experience and are stored in long-term memory [111], representing enduring structures of personally relevant knowledge related to the object of the evaluation (i.e., the recycled product). Such intrinsic knowledge represents perceived associations between objects and/or actions and crucial self-relevant consequences. As a result, if a product is considered personally relevant, consumers will feel involved with it in several situations [111]. Therefore, ISPRs are relative to the product as such and concern the degree of satisfaction experienced by a consumer during its usage rather than contextual factors [58].

Our systematic review points out several product-related constructs, namely, price, quality and functionalities, warranty and certification, brand, and green characteristics. The impact of price on perceived value and risk has been widely investigated (e.g., [40,73]). A perceived high price for a recycled product yields to an increased perceived value but also to a higher perceived risk and the opposite also works (e.g., [42,116]). Quality and functionalities, defined as individuals' subjective

judgment of the degree of conformance to requirements, are recognized as crucial by scholars (e.g., [66]). Recently, Abbey et al. [82] and Hazen et al. [30] stated that perceived quality—in the form of perceived functionality, lifespan, features, performance and cosmetic characteristics—significantly affects the consumer's assessment of the recycled product.

Recycled products are often considered to be of lower quality than the corresponding new ones (e.g., [66,69]). If in the process of purchasing a new product the consumer does not pay particular attention to warranties or certifications in support of its quality, they are very important when he deals with a recycled product's purchase (e.g., [39,84]). Eco-certificates guarantee that the purchased product has a lower environmental impact [39,87], while warranty is considered as a signal of product reliability [84].

Brand equity is able to mitigate the degree of uncertainty associated with a product, leading the consumer to consider it more reliable. Since brand equity can be defined as the perception of a brand's relative value in terms of quality and reliability, it has an influence on the perceived value [66,69].

To conclude, green characteristics refer to the awareness that through a recovery process of used components and its subsequent remanufacturing it is possible to generate significant savings of energy and resources as well as significant reductions in solid waste (e.g., [67,87]). This understanding will affect the consumer's assessment of the product [87].

Prospect Theory: Evaluation Stage

The study of the editing stage showed that individuals tend to perceive the results in terms of gains or losses rather than as final states of wealth. This information can help to frame the prospect to be evaluated.

In the evaluation stage, such gains and losses are not univocally defined but are determined in relation to a reference point, which generally corresponds to the individual's current asset position [107]. The reference point for evaluating recycled products is often represented by the equivalent new product [82]. The higher the similarity between new product and equivalent recycled product, the higher should be the value associated with the purchase of the latter [42].

Considering the perspective offered by the Congruity theory [112], it can be seen that consumers in evaluating something try to put together a lot of different information trying to make sense of it. Thus, when judging a recycled product, he/she simultaneously examines the effects of context-related (i.e., promotion, seller reputation and distribution)—previously labelled as SSPR—and product-related (i.e., price, quality and functionalities, warranty and certification, brand, and green characteristics)—previously labelled as ISPR—constructs. For example, a consumer would perceive an incongruence if he found a Rolex watch on sale on the shelves of a discount store: in this case the brand image of the watch would decrease while the one of the discount store would be enhanced. Therefore, the most important implication that derives from this model is that in the product evaluation phase a whole range of factors that impact the consumer's perception of risk and value is considered simultaneously. In our integrative framework, this implies that perceived value and risk are determined by concurrently considering product- and context-related constructs.

In addition, also the Elaboration Likelihood model (ELM) of persuasion developed by Cacioppo and Petty [117] is consistent with what has been theorized following Congruity theory. According to this model, there are two main routes to process stimuli and their impact on attitude change, namely, the central and the peripheral route. In the central route, the focus is on the content of the message that the individual receives and processes. In fact, in this phase the individual understands the meaning of the information received and elaborates it in a deep way. We posit that, in our integrative framework, this route is similar to the impact that product-related constructs have on perceived value and risk.

The peripheral route, on the other hand, is characterized by a lower level of content processing by the individual, who is instead more concerned with the superficial aspects of the message, such as the credibility of information sources or the effectiveness of advertising. In our integrative framework,

we claim that this route is analogous to the impact that context-related constructs have on perceived value and risk.

Finally, despite many scholars stated that perceived value and perceived risk constructs have a direct influence on the purchase intention, we posit that these relationships are mediated by the previously defined (individual) attitude construct. This intuition derives from the ELM of persuasion, which is a Process theory describing the influence of information processing on attitudes change [117]. A consumer's cognitive responses while he processes information are affected simultaneously by both routes, leading to a reasoned attitude towards the intention to purchase a recycled product. In our integrative framework, this explains the relationships among perceived value and risk, attitude, and purchase intention.

4. Conclusions and Future Research Directions

The growing interest in the literature on purchasing behavior, the circular economy and related business models has generated the need and opportunity for a comprehensive review and categorization of the state of the art of the existing research. Our contribution aims to merge the large but fragmented literature dealing with the intention of consumers to purchase recycled products. An integrative theoretical framework is proposed, able to combine different constructs, perspectives and theories discussed to date on the subject. This integrative framework represents a step towards a comprehensive understanding of behavioral theories and constructs, which is necessary in order to design efficient business models for the circular economy.

The first contribution of the study is the identification of three different perspectives that need to be considered in order to group the various constructs discussed to date. Namely, the constructs related to the individual, the product and the context. Among these perspectives, it clearly appears that the constructs related to the individual are the most investigated, as evidenced by the considerable number of studies dealing with this topic.

Nevertheless, while confirming the centrality of individual constructs in the behavioral process (it is always the individual who makes a purchase decision), our study also recognizes and underlines the importance of other two perspectives: product and context. These issues have emerged as crucial in the marketing literature but have largely been overlooked when discussing the intention to purchase recycled products.

Our framework highlights the need for a holistic view of the problem, presenting three different perspectives which, taken together, highlight the consumers' intention to buy recycled products.

The second issue to highlight is the ability of the proposed framework to combine insights deriving from multiple theories in order to explain the relationships existing between the numerous constructs identified. This result represents the second and main contribution of our research.

Academic researchers have taken several theoretical approaches to understand green consumer behavior, especially when investigating the individual related constructs. However, we noted a lack of commitment to the theoretical reasoning of the product and context constructs. While the individual perspective is adequately supported on well-established theoretical arguments (e.g., TPB, NAT, VBN), the theoretical foundation of the product and the context perspectives are not exhaustively covered by the literature dealing with the intention to purchase recycled products.

Our integrative framework highlights the need to include additional theories (i.e., prospect theory, congruity theory, and ELM) in the discussion to better explain the relationships between product and context related constructs and the intention to purchase. Our result suggests that product and context related constructs influence the perception of the value and risk of a purchase which in turn impact the attitude towards purchasing a recycled product. What has been highlighted suggests the need for a theoretical re-evaluation of the problem through the proposed systemic view.

Furthermore, our research also has insights for managers interested in approaching green customers. The framework can be useful for managers and decision makers when developing strategies for targeting consumers at various stages of the decision-making process related to recycled

products. Managers can identify specific steps in the recycled product purchasing process for certain customer segments and develop strategies to move them to the next step. Marketing consultants and decision makers may also find the developed framework useful for filling gaps in theory and practice; entrepreneurs may be able to create competitive advantages by expanding these insights.

As far as possible future research is concerned, the first one is related to the theory of planned behavior (TPB), which has still a dominating position, but non-(pre-)planned (or improvisational) behavior and spontaneous purchases deserve attention. In addition, this paper highlights how the constructs of the context and product perspectives have not received much attention in the literature in relation to the purchase intention of recycled products. Our paper proposes a theoretical framework in which each relationship is justified by a precise theory, but it would be appropriate to examine in depth and test the effect of the importance that contextual marketing stimuli have on the consumer's intention to purchase recycled products.

Finally, in our theoretical framework we did not take into account constructs concerning cultural factors of the consumer and his affiliation to a specific country. It would be interesting to evaluate the effect that the country of origin and the culture of a consumer may have on his perception of recycled products and on his intention to purchase them.

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Appendix A

Table A1. List of studies included in the systematic review.

Title	Authors	Journal	Year
Perceived quality of remanufactured products: construct and measure development	[30]	Journal of Cleaner Production	2017
Willingness to pay for eco—certified refurbished products: The effects of environmental attitudes and knowledge	[39]	Journal of Industrial Ecology	2016
Consumer value considerations and adoption of remanufactured products in closed-loop supply chains	[40]	Industrial Management & Data Systems	2018
Drivers of consumer purchase intentions for remanufactured products: A study of Indian consumers relocated to the USA	[41]	Qualitative Market Research: An International Journal	2015
Consumer product knowledge and intention to purchase remanufactured products	[42]	International Journal of Production Economics	2016
The potential for cannibalization of new products sales by remanufactured products	[43]	Decision Sciences	2010
Understanding the purchase intention towards remanufactured product in closed-loop supply chains: An empirical study in China	[44]	International Journal of Physical Distribution & Logistics Management	2013
Paving the way for sustainable remanufacturing in Southeast Asia: An analysis of auto parts markets	[51]	Journal of Cleaner Production	2018
Impact of environmental knowledge and product quality on student attitude toward products with recycled/remanufactured content: Implications for environmental education and green manufacturing	[52]	Business Strategy and the Environment	2018
Altruism and market-like behavior: An analysis of willingness to pay for recycled paper products	[59]	Population and Environment	2001

Table A1. *Cont.*

Title	Authors	Journal	Year
Factors influencing the purchase intention of consumers towards remanufactured products: a systematic review and meta-analysis	[60]	International Journal of Production Research	2019
Promoting remanufactured heavy-truck engine purchase in China: influencing factors and their effects	[61]	Journal of Cleaner Production	2018
Product design in the circular economy: Users' perception of end-of-life scenarios for electrical and electronic appliances	[62]	Journal of Cleaner Production	2017
Exploring attitude–behavior gap in sustainable consumption: comparison of recycled and upcycled fashion products	[63]	Journal of Business Research	2018
Turning ocean garbage into products–Consumers' evaluations of products made of recycled ocean plastic	[64]	Journal of Cleaner Production	2019
Selling remanufactured products: Does consumer environmental consciousness matter?	[65]	Journal of Cleaner Production	2018
Remanufactured products in closed—loop supply chains for consumer goods	[66]	Production and Operations Management	2015
How to sell refurbished smartphones? An investigation of different customer groups and appropriate incentives	[67]	Journal of Cleaner Production	2017
Key drivers in the behavior of potential consumers of remanufactured products: a study on laptops in Spain	[68]	Journal of Cleaner Production	2014
Remanufactured products purchase intentions and behavior: Evidence from Malaysia	[69]	International Journal of Production Research	2017
Consumer familiarity, ambiguity tolerance, and purchase behavior toward remanufactured products: The implications for remanufacturers	[70]	Business Strategy and the Environment	2018a
Towards building circular economy: a cross-cultural study of consumers' purchase intentions for reconstructed products	[71]	Management Decision	2019
The role of ambiguity tolerance in consumer perception of remanufactured products	[72]	International Journal of Production Economics	2012
Remanufacturing for the circular economy: An examination of consumer switching behavior	[73]	Business Strategy and the Environment	2017
Factors affecting purchase intention of remanufactured short life-cycle products	[74]	International Journal of Business & Society	2018
The impact of atmospherics on WOM about short life-cycle products: The case of motion pictures	[75]	Journal of Product & Brand Management	2018
Comparison of US and Japanese consumers' perceptions of remanufactured auto parts	[76]	Journal of Industrial Ecology	2017
New or recycled products: how much are consumers willing to pay?	[77]	Journal of Consumer Marketing	2010
Combining purchase probabilities and willingness to pay measures: a case on recycled products	[78]	European Journal of Social Sciences	2011
Offering branded remanufactured/recycled products: at what price?	[79]	Journal of Remanufacturing	2014
Paving the way towards circular consumption: exploring consumer acceptance of refurbished mobile phones in the Dutch market	[80]	Journal of Cleaner Production	2016
Combined analyses of costs, market value and eco-costs in circular business models: eco-efficient value creation in remanufacturing	[81]	Journal of Remanufacturing	2017

Table A1. *Cont.*

Title	Authors	Journal	Year
The role of perceived quality risk in pricing remanufactured products	[82]	Production and Operations Management	2017
Remanufactured auto parts market in Japan: Historical review and factors affecting green purchasing behavior	[83]	Journal of Cleaner Production	2018
Key factors in the market for remanufactured products	[84]	Manufacturing & Service Operations Management	2012
Prediction of Consumer Behavior Regarding Purchasing Remanufactured Products: A Logistics Regression Model	[85]	International Journal of Business and Social Research	2016
Consumer attitude towards the repair and the second-hand purchase of small household electrical and electronic equipment. A Spanish case study	[86]	Journal of Cleaner Production	2017
Green information, green certification and consumer perceptions of remanufactured automobile parts	[87]	Resources, Conservation and Recycling	2018
Incorporation of circular aspects into product design and labelling: Consumer preferences	[88]	Sustainability	2018
Consumers' willingness to pay for recycled content in plastic kitchen garbage bags: a hedonic price approach	[89]	Applied Economics Letters	2000
Price and quality of remanufactured products related to consumer behavior	[90]	International Journal of Trade and Global Markets	2015
Extended revenue forecasting within a service industry	[91]	International Journal of Production Economics	2013
The price-volume relationship for new and remanufactured smartphones	[92]	International Journal of Production Economics	2018
Green consumer behavior: an experimental analysis of willingness to pay for remanufactured products	[93]	Business Strategy and the Environment	2011
Selecting a remanufacturing quality strategy based on consumer preferences	[94]	Journal of Cleaner Production	2017
A decision-making model for remanufacturers: Considering both consumers' environmental preference and the government subsidy policy	[95]	Resources, Conservation and Recycling	2018
The influence of e-services on customer online purchasing behavior toward remanufactured products	[96]	International Journal of Production Economics	2017

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