



Theory of planned behaviour and elements of
green packaging: Impact on purchasing and
disposal behavior from a consumer perspective

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Abstract

Title: Theory of planned behaviour and elements of green packaging: Impact on purchasing and disposal behaviour from a consumer perspective

Introduction: Since the environmental movement is gaining importance, people are more aware of the over-generation of waste and waste disposal issues. This might change their behavioural intentions towards packaging, by preferring green packaging or packaging that can be disposed in an environmentally friendly way. In addition, their disposal behaviour may be affected as well.

Purpose: The aim of this study is to further investigate the relationship between green packaging, buying and disposal behaviour. The theory of planned behaviour will be used to understand whether preservation attitudes toward the environment, green subjective norms and green perceived behavioural control influence the aforementioned relationship.

Methodology: A quantitative research will be conducted through a self-administered online questionnaire. The target group selected for this study is adult respondents, since they are the ones who benefit from their own disposable income and shop for themselves or other people. The data collected will be analysed through a multiple regression analysis.

Keywords: disposal behavioural intentions, buying behavioural intentions, elements of green packaging, preservation attitudes, green subjective norms, green perceived behavioural control.

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List of Abbreviations

e.g.	Exempli gratia
ETPL	Environmental theory of planned behaviour
EU	European Union
GSN	Green subjective norms
GPBC	Green perceived behavioural control
PA	Preservation attitudes
PBC	Perceived behavioural control
SN	Subjective norms
TPB	Theory of planned behaviour
TRA	Theory of reasoned action

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1.Introduction

Packaging has always been considered one of the building blocks of the marketing mix. One of the reasons is that packaging has multidimensional functions: physical and barrier protection, containment and agglomeration, convenience in handling and transportation, information transmission and marketing (Deliya & Parmar, 2012; Raheem, Vishnu & Ahmed, 2014). In addition, it is proved that packaging influences consumers when it comes to their buying behaviour and its importance is recognized (Deliya & Parmar, 2012; Kuvykaite, Dovaliene & Navickiene, 2009; Raheem et al., 2014).

However, in the last decades consumers have become more aware about environmental issues. It is continuously reiterated that the actual consumptions levels are unsustainable. As Hoornweg and Bhada-Tata, (2012) claim on their *Global Review of Solid Waste Management*, “Current global Municipal Solid Waste generation levels are approximately 1.3 billion tonnes per year, and are expected to increase to approximately 2.2 billion tonnes per year by 2025” (p.8). It is clear that “the deterioration of the environment caused by discarded manmade materials has reached critical levels, with proven negative impacts on ecosystems and now also potentially human health” (Lacy & Spindler, 2019, Moving forward: the value of sustainable packaging, para.1). For this reason, people are asked to put more attention on their disposal behaviour, or they are even forced to do it by governmental measures and trash collection systems.

In this framework, it is possible to assume that people might be changing their buying habits and preferences, by prioritizing green packaging. In addition, they might dispose products in an environmentally friendly way.

Both Deliya and Parmar (2012) and Raheem et al. (2014) have already found out that innovative packaging “may actually add value to the product if it meets a consumer need such as recyclability, tamper-proofing, [...]” (p.56; p.127). More specifically, Rokka and Uusitalo (2008) demonstrated that the impact of environment-friendly or ethical product aspects on choices is positive. In fact, in their study “the environmental packaging was a strongly preferred product attribute when consumers choose among functional drink products (the average relative importance being 34%)” (p.522). Also van Birgelen, Semeijn and Keicher (2009) confirm that green packaging is preferred to normal packaging when buying the product; in addition, they also recognize the fact that people who prefer green packaging in general will also dispose it in an environmentally friendly way.

2.Problem Statement, Research Question & Purpose of the Research

Solomon (2006) defines consumer behaviour as “the study of the processes involved when individuals or groups select, purchase, use or dispose of products, services, ideas or experiences to satisfy needs and desires” (p.6). However, literature analyses mainly the impact of the packaging elements on buying behaviour. Little research has been done on the possibility that disposal behaviour is also influenced and has a role in the decision-making process (van Birgelen et al., 2009; Wever, van Onselen, Silvester, & Boks, 2010). Mancha and Yoder (2015) have created and tested a model that allows to measure the green behavioural intention; in particular, they can be forecasted by green subjective norms, preservation attitudes and green perceived behavioural control.

In this context, it is possible to assume that due to the increasing importance of the waste creation and management issue, consumers put more attention on their buying and disposal behaviour by preferring green options. As a consequence, the following questions arise:

RQ1: Do elements of green packaging influence consumers buying and disposal behaviour?

RQ2: Do ecologically concerned consumers buy packaging with green elements and dispose packaging in an environmentally friendly way?

RQ3: Does disposal behaviour take part in the decision-making process?

3.Theoretical Framework & Hypothesis

This section aims to define and explain the main concepts and theories that represent the main focus of this study. First, a definition of packaging and green packaging will be given; secondly, the relationship between buying and disposal behaviour will be analysed and an overview on disposal behaviour theory will be done. Last, the theory of planned behaviour (TPB) will contribute to the explanation of consumers' intention to purchase green packaging and dispose it in an environmentally friendly way.

While analysing the topics, the hypothesis of the study will be defined.

3.1.Packaging

Packaging has always been considered one of the building blocks of the marketing mix. One of the reasons is that even if its main role is to “preserve product integrity from climatic, bacteriological and transit hazard” (Stewart, 1995, p.5), packaging has multidimensional functions (Deliya & Parmar, 2012; Raheem et al., 2014): physical and barrier protection, containment and agglomeration, convenience in handling and transportation, information transmission and marketing. In marketing literature, researchers focus their attention on its role of influencing the consumer. Back to 1957, Pilditch defined packaging the “silent salesman”, recognizing the fact that in the moment when the consumer decides which product he wants to buy there will be just the packaging communicating the value of the product and the company. In more recent years, as the retail market becomes increasingly competitive and the self-service takes pace, packaging's role of final influencer has been widely studied and recognized.

Packaging has been analysed with both holistic and analytical methods. The holistic considers packaging as a unique entity that has an impact on consumers (Rokka & Uusitalo, 2008; Rundh, 2009; Underwood, 2003; van Birgelen et al., 2009; Wells, Farley, & Armstrong, 2007). The analytical approach studies packaging characteristics as independent elements and evaluates the influence of each of them on consumers (Table 1).

Table 1
Researches that Study Packaging Through an Analytical Approach

Reference	Elements	Dependent Variable	Findings
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Ampuero and Vila, 2006	Colour, Typography, Shape, Images	Consumers' perceptions	
Kuvykaite et al., 2009, p.446	Graphic, Colour, Size, Form, Material, Product information, Producer, Country-of-origin, Brand	Purchasing behaviour	"Verbal elements of package are the most important for consumer's purchase decision. For a major part of consumers size and material are the main visual elements, while product information and country-of-origin are the main verbal elements."
Deliya and Parmar, 2012, p.64	Colour, Background Image, Material, Font Style, Design of wrapper, Printed information, Innovation	Buying Behaviour	"For a major part of consumers' size and material are the main visual elements, while product information is the main verbal element."
Raheem et al., 2014, p.132	Colour, Material, Design of Wrapper, Innovation	Buying behaviour	"For a major part of consumers size of package and material are the main visual elements, whereas, product information is the main verbal element."
Wever et al., 2010, p.250	Labels, closure type, wrap design, brand	Littering and waste behaviour	"Conspicuous anti-littering labels may effectively reduce littering." "Peel-off closures are extremely sensitive to littering, while screw-on caps apparently feature a script, making subjects reclose the package after use" "designing a wrapping to retain attention may result in a different littering behaviour."

Table 1

In literature there is not a unique scheme that identifies the main elements of packaging; however, it is possible to divide them into three categories: visual (or graphic), verbal and structural elements (Table 2).

Table 2
Visual, Verbal and Structural Elements of Packaging

Visual elements	Verbal elements	Structural elements
Colour	Brand	Shape
Typography	Slogans	Size*
Graphical shapes	Product Name	Material*
Images	Country-of-origin	
Logos	Information	

Size*	Instruction of usage	
Material*	Special offers	

* Size and material are considered either visual or structural elements, depending on the study. Adapted from: Ampuero and Vila, 2006; Butkeviciene, Stravinskiene, and Rutelione, 2008; Deliya and Parmar, 2012; Kuvykaite et al., 2009; Raheem et al., 2014; Rettie and Brewer, 2000; Underwood, 2003.

Table 2

The major part of the sources (see Table 1) recognizes that product information is the verbal element that influences the consumer the most; on the other hand, size and material are considered the main visual elements. In addition, the major part of them focuses on the impact that packaging has on the buying behaviour, but little has been done on the impact on disposal behaviour.

For the scope of this research study, packaging will be defined as an “extrinsic element of the product, which is related to the product but that does not form part of the physical product itself” (Olson & Jacoby, 1972,). The reason for this choice is that the disposal behavioural intention will be analysed. In this context, the way of disposing the product and the way of disposing the packaging have to be considered two completely different entities. In addition, an analytical approach will be used, where the classification of Ampuero et al. (2006) is preferred (size and material are considered structural elements of packaging). This is due to the fact that this kind of classification can be compared in an easier way with papers regarding green packaging (e.g. Magnier & Crié, 2015).

3.1.1.Green packaging.

A complete and comprehensive definition of green packaging is given by the *Sustainable Packaging Coalition* in 2011 (p.1) in collaboration with *GreenBlue*: “Sustainable packaging:

1. Is beneficial, safe & healthy for individuals and communities throughout its life cycle
[...]
3. Is sourced, manufactured, transported, and recycled using renewable energy
4. Optimizes the use of renewable or recycled source materials
5. Is manufactured using clean production technologies and best practices
[...].”

This definition can be a good starting point but does not take into consideration which is the consumers’ perspective on the topic. In their exploratory research, Magnier and Crié (2015) defined which are the elements of packaging that are considered green by consumers. As it is possible to observe in Table 3, they divide the elements of packaging into 3 main categories: structural, graphical and informational.

Table 3
Elements of Green Packaging

STRUCTURAL CUES	Reduction	Over-packaging removal	Container Enlargement (more content, less container)	Loose unpackaged products
		Size (package small if compared to product)	Shape (adaptable to product; reduces the surface to cover the product)	Eco refills
	Materials	Recycled materials	Biodegradable materials	Material weight
		Recyclable materials	Made from renewable resources	
	Re-usability	Re-employable container	Reusable package	
	GRAPHICAL CUES	Colours	Photographs	Images
INFORMATIONAL CUES	Environmental labeling	Licensing agreements	Pedagogical attributes	General environmental claims

Adapted from: Magnier and Crié, 2015.

Table 3

These categories are relatable with the ones that are usually considered by analytical researches (graphical cues correspond to visual elements and informational to verbal; see Table 2).

Given the fact that several researches recognize the influence of the elements of packaging on consumers' buying behaviour and green elements of packaging can be categorised in the same way as elements of packaging in general, it is possible to assume that green elements of packaging have an influence on the consumer behaviour. Both Deliya and Parmar (2012) and Raheem et al. (2014) have already found out that innovative packaging "may actually add value to the product if it meets a consumer need such as recyclability, tamper-proofing, [...]" (p.56; p.127). More specifically, Rokka and Uusitalo demonstrated that the impact of environment-friendly or ethical product aspects on choices is positive. In fact, in their study "the environmental packaging was a strongly preferred product attribute when consumers choose among functional drink products (the average relative importance being 34%)" (2008, p.522). In 2009, Van Birgelen et al. found a relation

between green packaging and both buying and disposal behaviour: consumers who have the intention to buy green beverage packaging are also the one who want to dispose the package in an environmentally friendly way. However, they did not directly analyse the impact of the package on disposal behaviour. On the other hand, Wever et al. (2010) found out that packaging can influence disposal behaviour.

This study aims to analyse the topic more in depth by focusing specifically on green elements of packaging.

Hence, the following hypothesis is developed:

H1: *If the product displays green elements of packaging, the consumer will have the intention to*

- a. *buy it*
- b. *dispose it in an environmentally friendly way.*

3.2. Self-Perception Theory

The Self-perception Theory (Bem, 1967) states that the attitude that people exhibit in one behaviour will be transferred to other behavioural areas. For example, if a person prefers to move with the bicycle instead of using the car because he has preservation attitudes (PA) towards the environment, he is likely to have an environmentally friendly behaviour also in other contexts of his life. Van Birgelen et al. (2009) have already applied this theory to study the relation between buying and disposal behaviour in the case of beverage packaging in Germany. The findings show that there is a significant relationship between the two behaviours, implying that “a consumer, for whom ecological packaging is important during purchasing, is also likely to value the appropriate disposal of used beverage packages, and vice versa” (van Birgelen et al., 2009, p.137). This research wants to further analyse this topic; thus, hypothesis 2 from the aforementioned research will be further tested:

H2a: *Consumers, who behave in a “green” way with regard to their purchase decisions, are more likely to behave in a “green” way with regard to their disposal decisions.*

H2b: *Consumers, who behave in a “green” way with regard to their disposal decisions, are more likely to behave in a “green” way with regard to their purchase decisions.*

3.3. Disposal Behaviour

Solomon (2006) defines consumer behaviour as “the study of the processes involved when individuals or groups select, purchase, use or dispose of products, services, ideas or experiences to satisfy needs and desires” (p.6). Disposition represents the last step of the

consumer's relation with a product, service, idea or experience. Researchers have created different taxonomies of disposal behaviour. Harrell and McConocha (1992) distinguish the disposal options between altruistic and non-altruistic (Table 4

Harrel's taxonomy of disposal behaviour).

Table 4
Harrel's taxonomy of disposal behaviour

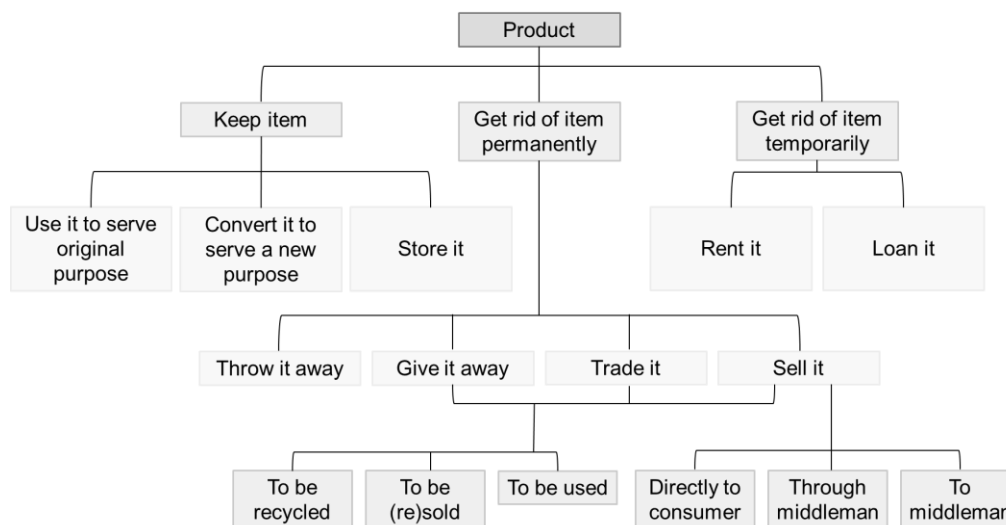
Keeping	Non-altruistic	Chronic keepers, sometimes referred to as "pack rats," have the tendency to hoard items.
Throwing away	Non-altruistic	Discarding through the garbage system or trashing usable items may be viewed as irresponsible behaviour.
Selling/swapping	Non-altruistic	A "price" is agreed upon by two parties.
Giving away	Altruistic Non-altruistic	-Passing along. -Donating with tax deduction. -Donating without tax deduction.

Adapted from: Harrell and McConocha, 1992.

Table 4

A more detailed taxonomy of disposal behaviour is depicted by Jacoby, Berning, and Dietvorst (1977) (Figure 1), where the several options are divided between permanently dispose, temporarily dispose and keep the item.

Figure 1: Jacoby's taxonomy of disposal behaviour



Adapted from: Jacoby et al., 1977.

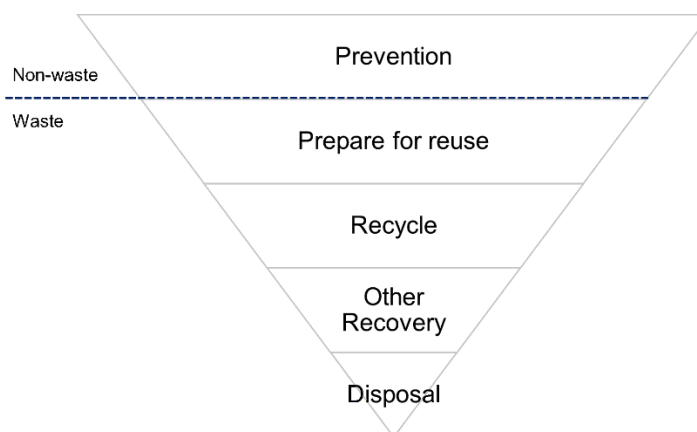
In the case of packaging, some considerations must be done when using Jacoby's taxonomy. First of all, the option "get rid of item temporarily" cannot be applied, since packaging is an object that does not have enough value to be rented or loaned in the major part of the cases. For the same reason, also "sell it", "trade it", "give it away-to be (re)sold" and "give it away-to be used" are not applicable. The disposal behaviours that are supposed to happen for packaging are:

- Keep it-use to serve its original purpose: this is the case of re-usable packages;
- Keep it-convert it to serve a new purpose: one example could be the aluminium box of Danish biscuits, that sometimes is used further as case for small objects;
- Keep it-store it: the package might have a special meaning for the individual that does not throw it away immediately. It could be the case of collectible or special edition bottles, for example;
- Get rid of the item permanently-throw it away: in literature, people who throw the not necessary item immediately are called purgers (Coutler & Ligas, 2003);
- Get rid of the item permanently-give it away-recycle.

3.3.1.Green disposal behaviour.

More and more governments are creating legislative framework in order to reduce the waste impact on the environment. The most used approach to the problem is the 3Rs method: reduce, reuse, recycle. Some of the countries that are applying 3Rs for waste management policies are the European Union (EU), USA, Korea, Japan, China and Vietnam (Sakai et al., 2011). One of the most complete documents on the topic is the latest version of *European Commission's Waste Framework Directive 2008/98/EC* (European Commission, 2008). This directive refers to the waste hierarchy approach, which is a more detailed version of the 3Rs method. The waste hierarchy is represented through a reverse triangle that establishes a priority order from the most preferred option of "prevention" to the least preferred of "disposal" (Figure 2).

Figure 2: Waste hierarchy as in the *EU Waste Framework Directive 2008*



Adapted from: European Commission, 2008.

If the same rationale is applied to consumers' disposal behaviour, the options "keep the item" and "recycle" should be considered less harmful to the environment if compared to "throw it away". Harrell and McConocha (1992) define responsible disposal behaviour as the one that "prevents or delays the waste and pollution associated with trashing still useful items" (p.399). In particular, they recognize as *responsible* disposition options "sell", "pass along", and "donate" (see Table 4 for the definition), while "keep the item" and "throw it away" are considered *non-responsible*. In this context, recycling is included in the behaviour of selling and donating, since it is assumed that other entities collect the object and recycle it. It is interesting to observe that "keep the item" is not considered a green disposal behaviour; this is due to the fact that this disposal option is associated with the concept of hoarding un-useful objects and they do not consider the possibility of re-using the item.

In the literature review "Sustainable Consumer Behavior" (2018), Trudel points out the following definition of green behaviour: "environmental or sustainable behaviour is best defined by its impact: the extent to which decisions are driven with the intention to benefit or limit the impact on the environment (Stern, 2000)" (p.85). According to this definition, if a package is kept with the intention to be re-used in order to avoid throwing away a useful item, the behaviour is considered green. The same reasoning can be applied for the option of keeping the item in order to convert it to serve another purpose. Table 5 summarizes which disposal behaviour options can be considered green and which is the approach that this work will undertake.

Table 5
Green Disposal Behaviour Definition

Jacoby's Taxonomy	Green disposal behaviour
-------------------	--------------------------

	Waste Hierarchy definition	Harrel's definition	Approach of this study
KEEP – use to serve its original purpose (re-use)	Green	-	Green (Trudel, 2018)
KEEP – convert it to serve a new purpose	Green	-	Green (Trudel, 2018)
KEEP – store it	-	NOT green (hoard)	NOT green
GET RID PERMANENTLY - Throw away	NOT green	NOT green	NOT green
GET RID PERMANENTLY - Recycle	Green	Green	Green

Sources: European Commission, 2008; Harrell and McConocha, 1992; Jacoby et al., 1977; Stern, 2000; Trudel, 2018.

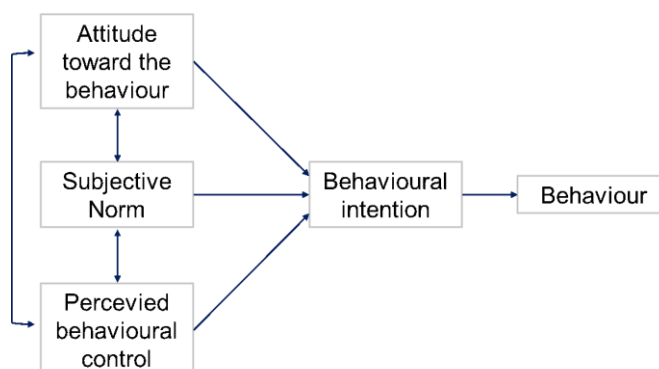
Table 5

3.4. Behavioural Intentions

One of the most common theories used to study consumers' behaviour is the theory of planned behaviour (TPB), developed by Ajzen (1991) (see Figure 3). It claims that behavioural intentions represent a good approximation of the final behaviour and they can be predicted by jointly analysing three items:

1. the individual's personal attitudes toward the behaviour: overall positive or negative evaluation and likelihood of performing the behaviour;
2. subjective norms (SN), the considerations of other person's attitudes;
3. perceived behavioural control (PBC): the perceived ease of the behaviour.

Figure 3: Theory of planned behaviour



Adapted from: (Ajzen, 1991).

As the same Ajzen affirms, the TPB is “ an extension of the theory of reasoned action (Ajzen & Fishbein, 1975, 1980) made necessary by the original model’s limitations in dealing with behaviours over which people have incomplete volitional control” (Ajzen, 1991, p.181). In fact, the TPB adds the independent variable PBC to the model of the TRA. Ajzen discuss that it is important to consider this variable because “the resources and opportunities available to a person must to some extent dictate the likelihood of behavioural achievement” (Ajzen, 1991, p.183).

For the purpose of this study the TPB is preferred because the PBC is considered an important influencer of consumers’ behaviour. Since the purchasing and disposition of packaging is an action that every individual performs several times a day, it may be the case that consumers perceive their repetitive action to have an impact on the environment. In addition, there is a general belief that by purchasing green products and disposing them in an environmentally-friendly way consumers can contribute significantly to improve the quality of the environment (Abdul-Muhmin, 2007).

TPB has already been successfully applied to an environmental context (Mancha & Yoder, 2015; Niaura, 2013; Oreg & Katz-Gerro, 2006). Niaura (2013) discovered that not only PBC strongly predicted intent, but also behaviour, even if with a weaker degree. Particular interest has been aroused by Mancha and Yoder (2015). They created and tested an enhanced version of TPB, called environmental theory of planned behaviour (ETPL), whose main focus is the green behavioural intent. They demonstrated that green subjective norms (GSN), preservation attitudes toward the environment (PA) and green perceived behavioural control (GPBC) do create a green behavioural intention.

However, some contrasting results have to be pointed out. In their study, van Birgelen et al. (2009) applied the TPB to investigate the relations between ecological considerations and purchase and disposal decisions. The cross-sectional research supported the link between the consumer behaviour, attitudes and social norms, but refused the hypothesis pertaining the belief that effects of own eco-friendly disposal actions will guide ecological disposal behaviour. In this context, further research should be conducted to clarify the relation between PBC and behavioural intention in the case of disposition.

In the case of PA, several studies highlight their importance when it comes to the influence on green purchasing and disposal behaviour (Cherian & Jacob, 2012; Mancha & Yoder, 2015; Niaura, 2013; Schwepker & Cornwell, 1991; van Birgelen et al., 2009). However, while researching the relationship between consumers’ PA and their attitude on green

products, Tan and Lau (2010) didn't find any significant link. Further research could clarify the relevance of attitude for the consumers' intentions.

Taking into consideration the factors just analysed and given the relevance of van Birgelen et al.'s (2009) study, it is possible to draw the following hypothesis:

People who have PA might prefer to buy green-packaged products, for instance because they might consider the environmental consequences of unecological behaviour to be severe. The same reasoning can be applied to the disposition of packaging. Hence,

H3a: *If consumers have higher PA toward the environment, they are more likely to buy products with green elements of packaging.*

H3b: *If consumers have higher PA toward the environment, they are more likely to dispose the packaging in an environmentally friendly way.*

Individuals who believe that their peers have a PA toward the environment might purchase products with green elements of packaging. The same can be stated with regard to the disposal behaviour. Thus,

H4a: *If consumers show more positive GSN, they are more likely to buy products with green elements of packaging.*

H4b: *If consumers show more positive GSN, they are more likely to dispose the packaging in an environmentally friendly way.*

People who believe that every single consumer can protect the environment (GPBC) might buy green packaged products and dispose this packaging in an environmentally friendly way. So,

H5a: *If consumers have higher GPBC, they are more likely to buy products with green elements of packaging.*

H5b: *If consumers have higher GPBC, they are more likely to dispose the packaging in an environmentally friendly way.*

4.Review of Literature

This section aims to summarize the main sources taken into consideration for the study. A more complete version is in the Excel file attached (“Peron-Literature Review”).

Title	Source	Contribution
“An Examination of Ecologically Concerned Consumers and their Intention to Purchase Ecologically Packaged Products”	Schwepker and Cornwell, 1991	Relationship between attitudes, perceived behavioural control and green consumer behaviour towards packaging: "the analysis showed that individuals with favourable attitude toward ecologically conscious living are more inclined to purchase ecologically packaged products."
“Attitude Towards the Environment and Green Products: Consumers’ Perspective”	Tan and Lau, 2010	Attitude do not affect the green consumer behaviour: "no significant relationship between consumers’ attitude on the environmental protection and their attitude on green products."
“Communicating Packaging Eco-Friendliness”	Magnier and Crié, 2015	Taxonomy of packaging ecological cues: "packaging ecological cues [...] were coded into three subcategories: structural cues, graphical cues and informational cues."
“Consumer Perceptions of Product Packaging”	Ampuero and Vila, 2006	Splitting the elements of packaging into categories (graphic and structural). Packaging influences consumer behaviour.
“Consumers Perception, Purchase Intention and Actual Purchase Behavior of Organic Food Products”	Wee, Ariff, Zakuan, and Tajudin, 2014	Items.
“Cue Utilization in the Quality Perception Process”	Olson and Jacoby, 1972	Definition of packaging: “extrinsic element of the product, which is related to the product but that does not form part of the physical product itself.”
“Cultural Antecedents of Green Behavioral Intent: An Environmental Theory of Planned Behaviour”	Mancha and Yoder, 2015	ETPB.
“Definition of Sustainable Packaging”	Sustainable Packaging Coalition, 2011	Definition of sustainable packaging.
“Differences Between Household Waste Reduction, Reuse and Recycling Behaviour: A Study of Reported Behaviours, Intentions and Explanatory Variables”	Barr, Gilg, and Ford, 2001	Items.
“Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste and Repealing Certain Directives”	European Commission, 2008	Definition of green disposal behaviour (waste hierarchy definition).

THEORY OF PLANNED BEHAVIOUR AND ELEMENTS OF GREEN PACKAGING: IMPACT ON PURCHASING AND DISPOSAL BEHAVIOUR FROM A CONSUMER PERSPECTIVE

<p>"Explaining Consumers' Willingness to be Environmentally Friendly"</p>	<p>Abdul-Muhmin, 2007</p>	<p>Possible relationship between perceived behavioural control and green behavioural intentions: "by purchasing green products and disposing them in an environmentally-friendly way consumers can contribute significantly to improve the quality of the environment."</p>
<p>"Green Marketing: A Study of Consumers' Attitude Towards Environment Friendly Products"</p>	<p>Cherian and Jacob, 2012</p>	<p>Relationship between attitudes and green consumer behaviour.</p>
<p>"Impact of Consumer Package Communication on Consumer Decision Making Process"</p>	<p>Butkeviciene et al., 2008</p>	<p>Splitting the elements of packaging into categories: verbal and non-verbal. Elements of packaging influence consumer behaviour.</p>
<p>"Impact of Package Elements on Consumer's Purchase Decision"</p>	<p>Kuvykaite et al., 2009</p>	<p>Splitting the elements of packaging into categories (verbal and visual). Size and material are the main visual elements, while product information and country-of-origin are the main verbal elements.</p>
<p>"Impact of Product Packaging on Consumer's Buying Behavior"</p>	<p>Raheem et al., 2014</p>	<p>Splitting the elements of packaging into categories (visual and verbal). "Size of package and material are the main visual elements, whereas, product information is also the main verbal elements." Elements of packaging influence the consumer behaviour. Green elements of packaging have an influence on consumer behaviour: "packing innovation may actually add value to the product if it meets a consumer need such as recyclability, tamper-proofing [...]."</p>
<p>"Influence of Packaging Design on Littering and Waste Behaviour"</p>	<p>Wever et al., 2010</p>	<p>Elements of packaging influence the consumer disposal behaviour.</p>
<p>"Packaging and Proenvironmental Consumption Behavior"</p>	<p>van Birgelen et al., 2009</p>	<p>Green packaging influences consumer behaviour (both buying and disposal). Relationship between buying and disposal behaviour. PA, GSN influence buying and disposal behaviour. GPBC does not influence disposal behaviour.</p>
<p>"Packaging Design: Creating Competitive Advantage with Product Packaging"</p>	<p>Rundh, 2009</p>	<p>Packaging influences consumer behaviour.</p>
<p>"Personal Factors Related to Consumer Product Disposal Tendencies"</p>	<p>Harrell and McConocha, 1992</p>	<p>Possible relationship between attitudes and disposal behaviour. Taxonomy of disposal behaviour. Green disposal behaviour.</p>
<p>"Predicting Proenvironmental Behavior Cross-Nationally"</p>	<p>Oreg and Katz-Gerro, 2006</p>	<p>Application of TPB on green intentions.</p>

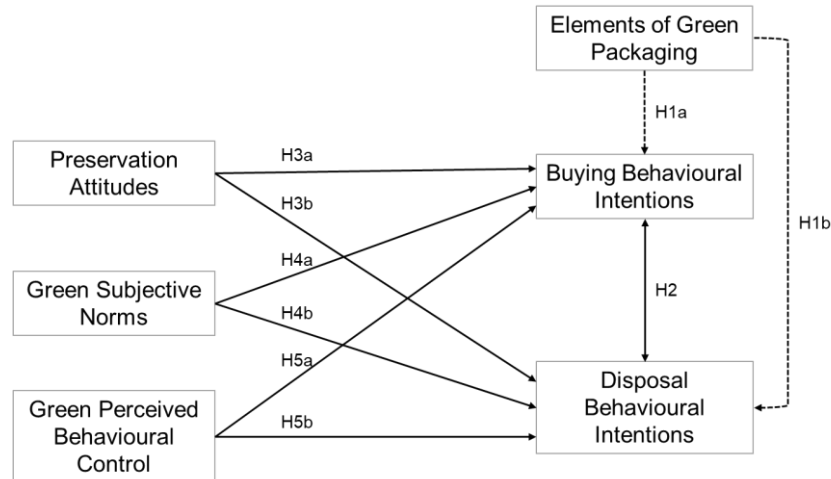
THEORY OF PLANNED BEHAVIOUR AND ELEMENTS OF GREEN PACKAGING: IMPACT ON PURCHASING AND DISPOSAL BEHAVIOUR FROM A CONSUMER PERSPECTIVE

<p>"Preference for Green Packaging in Consumer Product Choices - Do Consumers Care?"</p>	<p>Rokka and Uusitalo, 2008</p>	<p>Packaging influences consumer behaviour. Green packaging has an impact on consumer behaviour "environment-friendly or ethical product aspects can have a clear positive impact on consumer choices."</p>
<p>"Role of Packaging on Consumer Buying Behavior–Patan District"</p>	<p>Deliya and Parmar, 2012</p>	<p>Splitting the elements of packaging into categories (visual and verbal). "Size of package and material are the main visual elements, whereas, product information is also the main verbal elements." Elements of packaging influence the consumer behaviour.</p>
<p>"Self-Perception: An Alternative Interpretation of Cognitive Dissonance Phenomena"</p>	<p>Bem, 1967</p>	<p>Possible relationship between buying and disposal behaviour.</p>
<p>"Sustainable Consumer Behaviour"</p>	<p>Trudel, 2018</p>	<p>Definition of green consumer behaviour: "Environmental or sustainable behaviour is best defined by its impact: the extent to which decisions are driven with the intention to benefit or limit the impact on the environment (Stern, 2000)."</p>
<p>"The Communicative Power of Product Packaging: Creating Brand Identity via Lived and Mediated Experience"</p>	<p>Underwood, 2003</p>	<p>Splitting the elements of packaging into categories (graphic and structural). Packaging influences consumer behaviour.</p>
<p>"The Importance of Packaging Design for Own-Label Food Brands"</p>	<p>Wells et al., 2007</p>	<p>Packaging influences consumer behaviour.</p>
<p>"The Theory of Planned Behaviour"</p>	<p>Ajzen, 1991</p>	<p>Relationship between attitudes, subjective norms, perceived behavioural control and consumer behaviour.</p>
<p>"The Verbal and Visual Components of Package Design"</p>	<p>Rettie and Brewer, 2000</p>	<p>Splitting the elements of packaging into categories (verbal and non-verbal).</p>
<p>"Using the Theory of Planned Behavior to Investigate the Determinants of Environmental Behavior among Youth"</p>	<p>Niaura, 2013</p>	<p>Application of TPB on green intentions.</p>
<p>"What about Disposition?"</p>	<p>Jacoby et al., 1977</p>	<p>Taxonomy of disposal behaviour.</p>

5. Research Model and Hypotheses Review

Given the analysed literature and the hypotheses drawn, the following conceptual research model is created (Figure 4):

Figure 4: Conceptual research model



The hypotheses used to assess the validity of the conceptual research model are summarized in Table 6:

Table 6
Hypotheses Review

H1a	If the product displays green elements of packaging, the consumer will have the intention to buy it.
H1b	If the product displays green elements of packaging, the consumer will have the intention to dispose it in an environmentally friendly way.
H2a	Consumers, who behave in a “green” way with regard to their purchase decisions, are more likely to behave in a “green” way with regard to their disposal decisions.
H2b	Consumers, who behave in a “green” way with regard to their disposal decisions, are more likely to behave in a “green” way with regard to their purchase decisions.
H3a	If consumers have higher PA toward the environment, they are more likely to buy products with green elements of packaging.
H3b	If consumers have higher PA toward the environment, they are more likely to dispose the packaging in an environmentally friendly way.
H4a	If consumers show more positive GSN, they are more likely to buy products with green elements of packaging.

H4b	If consumers show more positive GSN, they are more likely to dispose the packaging in an environmentally friendly way.
H5a	If consumers have higher GPBC, they are more likely to buy products with green elements of packaging.
H5b	If consumers have higher GPBC, they are more likely to dispose the packaging in an environmentally friendly way.

Table 6

By taking into consideration the taxonomy on green packaging created by Magnier and Crié (2015) and the fact that material, size and product information are the most relevant elements influencing consumers' behaviour (see 3.1.Packaging), hypothesis 1a and 1b will be further subdivided as follows:

Table 7
Hypothesis 1 Subdivision

#	If...	a	b
H1.1	If the packaging is made with recyclable material...	...the consumer will have the intention to buy it.	...the consumer will have the intention to dispose it in an environmentally friendly way.
H1.2	If the relation product contained-to-packaging is high...	...the consumer will have the intention to buy it.	-
H1.3	If the packaging is reusable...	...the consumer will have the intention to buy it.	...the consumer will have the intention to dispose it in an environmentally friendly way.
H1.4	If the packaging displays a recyclable logo or displays assertions promoting environmental disposition...	...the consumer will have the intention to buy it.	...the consumer will have the intention to dispose it in an environmentally friendly way.

Table 7

6.Methodology

The following chapter depicts the research method that has been used in order to achieve the goal of this research paper. It will first present the target group and sample selection; it will then move to the research design and last it will describe the procedure that has been applied.

6.1.Participants

The target group chosen for this research paper is consumers who are older than 15 years old. This limit is set because the Minimum Age Convention (ILO, 1973, No. 138) “sets the general minimum age for admission to employment or work at 15 years”. The minimum working age is taken into consideration since work is the main source of disposable income. Since the research aims to investigate the buying and disposal behavioural intention of consumers, the respondents should be used to shop for themselves and/or other people. In order to do so, they need to have money available.

6.2.Research Design

A self-administered online questionnaire will be released in order to conduct a quantitative analysis. The online questionnaire has been preferred over other methods mainly because it is time effective. Bryman and Bell (2007) assert that it is time and cost effective, it allows to eliminate the interviewer effect and variability, and it is convenient for respondents. In addition, it allows data collection in foreign countries without the need to be there physically.

The questionnaire will be designed and diffused with the software SphinxDeclic.

The content of the survey will be created in English at first. In a second moment it has been translated into other languages (Italian, Vietnamese) in order to ease the collection of data since it facilitates the respondents' answer convenience. The translations will be performed by a native or proficient speaker and checked by a native speaker.

The questionnaire will be divided into four sections which aim to measure the main constructs building up the research model:

1. The respondents' buying behavioural intentions;
2. The respondents' disposal behavioural intentions;
3. The respondents' PA, GSN, GPBC;
4. Sociodemographic factors and respondents' profile.

6.3.Measures

The items to measure the constructs will be mainly built on the behavioural theories explained in the section *Theoretical Framework & Hypothesis* as well as previous studies dealing with this topic. In particular, they will be mainly adapted from Barr et al. (2001), Mancha and Yoder (2015), van Birgelen et al. (2009), Wee et al. (2014). The four studies taken into consideration perform n-points likert scales to study the different variables (Table 8).

Table 8
Likert Scales used by Barr et al. (2001), Mancha and Yoder (2015), van Birgelen (2009), Wee et al. (2014)

Source	Variable	n-points	Degree
Barr et al., 2001	Disposal behavioural intention	5	1 = very unwilling; 5 = very willing
Mancha and Yoder, 2015	GSN	7	1=strongly disagree; 7=strongly agree
Van Birgelen et al., 2009	Buying and disposal behavioural intention, PA, GPBC	7	1=totally disagree; 7=totally agree
Wee et al., 2014	Buying behavioural intention	5	1=highly disagree; 5=highly agree

Table 8

However, in order to facilitate the respondents' choice a 5-point Likert scale has been applied for all the constructs. The scale has been anchored as follow:

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree

6.4.Procedure

First of all, a pilot questionnaire will be tested in order to identify potential weaknesses, evaluate the length and comprehensibility. After the improvement, the questionnaire will be spread online mainly through social media channels (Facebook, What's App). A snowball

sampling method will be used: it is a non-probabilistic method that is capable of recruiting participants at a low cost and from a large geographic area (Baltar & Brunet, 2012). Respondents will receive an online link that allows them to access and further distribute the survey. In order to involve consumers in the task, the purpose and reason of the research will be briefly explained in the introduction of the survey. In addition, it is that a minimum amount of time will be needed to carry it out and it will be completely anonymous. This helps in engaging respondents and reducing desirability bias related to environmental subjects (MacKerron, Egerton, Gaskell, Parpia, & Mourato, 2009).

6.5.Data Analysis

The collected data will be analysed with multivariate regression analyses. This method is chosen because it allows to study the impact of PA, GSN and GPBC on respondents' behavioural intentions. In addition, the Pearson's correlation coefficient will be used to study the relationship between buying and disposal behavioural intentions.

The internal consistency reliability of the constructs will be checked by performing Cronbach's α test, as recommended by Gliem & Gliem (2003). According to George, D., & Mallery, P. (2003) the Cronbach α should be greater than 0.7 in order to be considered acceptable.

Other methods could be taken into consideration after the data is collected and reviewed.

7.Expected contribution & limitation

The research aims to give a more in-depth insight on consumer's behaviour. In the context of contrasting results, it will clarify whether the TPB can be applied to green buying and disposal behaviour or if PBC is not significantly related to the dependent variables. In addition, self-perception theory will be further tested.

From a managerial point of view, the research will clarify which elements of packaging can attract the environmentally concerned consumer and create guidelines for designers and companies. It will also establish whether elements of green packaging have an influence on disposal behaviour. If so, governments and institutions might have another tool to influence consumers' disposition of packaging and reduce the waste management problem. The impact may be further strengthened whether it will be proved that disposal and buying behaviour are inter-related.

One limitation of the study is that it focuses on the consumers' behavioural intentions. As Ajzen (1991) recognizes, behavioural intentions represent a good approximation of the final

behaviour, but it is not sure that they will be carried out. In addition, even if the questionnaire will be designed to minimize the net acquiescence response style, some respondents may overestimate their green behavioural intentions, because of social desirability bias.

8.Overview of Chapters

Abstract

List of Abbreviations

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1.Introduction

2.Problem Statement, Research Question and Purpose of the Research

3.Theoretical Framework & Hypothesis

 3.1 Packaging

 3.1.1 Green Packaging

 3.2 Self-perception Theory

 3.3 Disposal Behaviour

 3.3.1 Green Disposal Behaviour

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4.Review of Literature

5.Research Model and Hypothesis Review

6.Methodology

7.Data Analysis

8.Research Findings

9.Discussion & Limitations

Bibliography

Appendix

9.Plan of Work

Time period	Activity	Completion
01.09 – 30.09	Researching for and writing the exposé	Done
30.09	Exposé hand in	Done
01.10 – 20.10	Questionnaire design	To follow
20.10 – 31.10	Questionnaire testing and Improvements	To follow
01.11 – 20.11	Data collection	To follow
20.11 – 08.12	Data analysis	To follow

08.12 – 08.01	Writing and reviewing the thesis	To follow
13.01	Thesis hand-In	To follow
08.01 – 19.01	Thesis presentation design	To follow
19.01	Thesis presentation hand in	To follow

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Appendix

A. Overview of the Items

Construct	#	Items adapted from?	Item	Adapted Situation
Buying Behavioural Intentions – RECYCLABLE MATERIAL	1	Van Birgelen 2009	I pay attention to the environmental friendliness of beverage packages	I pay attention to the recyclability of packaging
	2	Van Birgelen 2009	I avoid buying beverages with packaging that has a negative impact on the environment	I avoid buying products with packaging that is not recyclable
	3	Wee 2014	I plan to buy organic food products in regular basis	I plan to buy products with recyclable packaging in regular basis
Buying Behavioural Intentions – AMOUNT/PRESENCE OF PACKAGING	1	Van Birgelen 2009	I pay attention to the environmental friendliness of beverage packages	I pay attention to the amount of packaging used to pack a product

	2	Van Birgelen 2009	I avoid buying beverages with packaging that has a negative impact on the environment	I avoid buying products with over-packaging
	3	Wee 2014	I plan to buy organic food products in regular basis	I plan to buy unpackaged products in regular basis
	4	Wee 2014	I would buy organic food products in the near future	I would buy loose products in the near future
Buying Behavioural Intentions – SIZE	1	Van Birgelen 2009	I pay attention to the environmental friendliness of beverage packages	I pay attention to the size of the packaging
	2	Wee 2014	I intend to buy organic food products because they are more environmentally friendly	I intend to buy big format products because they are more environmentally friendly
	3	Wee 2014	I would buy organic food products in the near future	I would buy concentrated products in the near future
Buying Behavioural Intentions – REUSABLE PACKAGING	1	Van Birgelen 2009	I avoid buying beverages with packaging that has a negative impact on the environment	I avoid buying products with packaging that I cannot reuse
	2	Wee 2014	I intend to buy organic food products because they are more environmentally friendly	I intend to buy products packaged with a resealable packaging
	3	Wee 2014	I plan to buy organic food products in regular basis	I plan to buy wrapping that can be easily reused for another purpose on a regular basis
Buying Behavioural Intentions – LOGO/PRODUCT INFORMATION	1	Van Birgelen 2009	I avoid buying beverages with packaging that has a negative impact on the environment	I avoid buying products that do not display a recyclable logo
	2	Van Birgelen 2009	I pay attention to the environmental friendliness of beverage packages	I pay attention to the information on how to sort the packaging
	3	Wee 2014	I plan to buy organic food products in regular basis	I plan to buy products with eco-friendly logos on a regular basis
Disposal Behavioural Intentions – RECYCLABLE MATERIAL	1	Van Birgelen 2009	I avoid buying beverages with packaging that has a negative impact on the environment	I avoid throwing away packaging made with recyclable material
	2	Van Birgelen 2009	I pay attention to the environmental friendliness of beverage packages	I pay attention to the disposal options (recycling, reusing) of recyclable packaging

	3	Van Birgelen 2009	I usually dispose of empty beverage packages in an environmentally friendly way	I usually dispose of packaging made with recyclable material in an environmentally friendly way
Disposal Behavioural Intentions – REUSABLE PACKAGING	1	Van Birgelen 2009	I avoid buying beverages with packaging that has a negative impact on the environment	I avoid throwing away resealable wrapping that can be easily reuse
	2	Van Birgelen 2009	I usually dispose of empty beverage packages in an environmentally friendly way	I usually reuse old containers, like ice cream tubs or margarine boxes
		Barr 2001	Reuse old containers, like ice cream tubs or margarine boxes	
	3	Wee 2014	I would buy organic food products in the near future	I would reuse jar and bottles wherever possible
Barr 2001		Reusing jars and bottles wherever possible		
Disposal Behavioural Intentions – LOGO/PRODUCT INFORMATION	1	Van Birgelen 2009	I avoid buying beverages with packaging that has a negative impact on the environment	I avoid throwing away packaging that display a recyclable logo
	2	Van Birgelen 2009	I pay attention to the environmental friendliness of beverage packages	I usually recycle packages with instructions on how to do it
	3	Van Birgelen 2009	I usually dispose of empty beverage packages in an environmentally friendly way	I pay attention to the disposal instructions shown on the packaging
Preservation Attitudes	1	Van Birgelen 2009	In my opinion, packaging waste has serious negative consequences for the environment	In my opinion, packaging waste has serious negative consequences for the environment
	2	Van Birgelen 2009	One of the major causes of environmental harm is unecological packaging	One of the major causes of environmental harm is unecological packaging
	3	Van Birgelen 2009	I believe that packaging waste is a very important environmental issue	I believe that packaging waste is a very important environmental issue
Green Subjective Norms	1	Mancha 2015	Most people who are important to me protect the environment	Most people who are important to me protect the environment
	2	Mancha 2015	Most people who are important to me think I should protect the environment	Most people who are important to me think I should protect the environment

	3	Mancha 2015	I feel under social pressure to preserve the environment	I feel under social pressure to preserve the environment
Green Perceived Behavioural Control	1	Van Birgelen 2009	When I buy beverages with ecological packaging, I feel that I have done something positive for the environment	When I buy products with ecological packaging, I feel that I have done something positive for the environment
	2	Van Birgelen 2009	I believe that my decisions in the disposal choices of empty beverage packages have a direct influence on the environment as a whole	I believe that my decisions in the disposal choices of empty packages have a direct influence on the environment as a whole
	3	Van Birgelen 2009	My packaging choices have a direct impact on the environment	My packaging choices have a direct impact on the environment