

**THE INFLUENCE OF SUSTAINABILITY ON CONSUMER BEHAVIOR:
A MARKETING COMMUNICATION PERSPECTIVE**

JASPER REINTJENS



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DHR. VAN BIRGELEN

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Abstract

Sustainability is a growing concern in the modern world and this has led to a large increase in sustainability efforts by firms. This thesis aims to address how firms can use the marketing communication of their sustainability efforts to influence consumer behavior. Hypotheses are developed and tested through an experiment exposing 140 consumers to four different presentation modes of an advertisement of a fictional product presenting the sustainability efforts of a fictional firm. The simplicity and the dominance of the message about sustainability efforts are manipulated. In contrast to expectations, simplicity and dominance of the sustainability message do not lead to positive consumer responses and increased perceived sustainability. As expected, perceived sustainability leads to positive consumer responses. Personal norms and social norms do not strengthen this effect, contrary to expectations. The findings show that sustainability influences consumer behavior, but altering the simplicity and dominance of a sustainability message are not reliable ways to affect perceived sustainability and consumer behavior. Earlier research has lacked clear links between marketing communication and consumer behavior in a sustainability context. This thesis advances theory by taking the marketing communication variables simplicity and dominance into account in studying the sustainability – consumer behavior relationship.

1. Introduction

We live in a world where consumption keeps increasing globally, and this does not happen without consequences. Resources are being used, environments are being polluted and the question how to keep the world livable for future generations emerges. In order to ensure the livability of our planet in the future, the phenomenon sustainability becomes more and more relevant. Several people and organizations set up sustainability efforts, firms included.

Over the past years, a lot has been written about firms' sustainability efforts and how consumers react to such efforts. Over 20 years ago, empirical evidence was already found that consumers are influenced by firm behavior in their purchase decision: consumers are willing to pay a higher price for products of firms who behave ethical (Creyer, 1997). Effects of corporate societal responsibility (CSR) on consumer responses to products were found both directly and indirectly, through corporate evaluation (Brown & Dacin, 1997). So CSR influences consumer behavior by altering a consumer's perception of (the sustainability of) the firm. Sustainability is only a part of CSR however, "CSR appears in some respects as the incarnation or transplant, at a business level, of the concept of sustainable development" (Swaen & Chumpitaz, 2008, p. 8). The literature written about the connection between sustainability and consumer behavior has increased dramatically over recent years. Relationships were found of the perceived CSR of a firm related to consumer trust (Swaen and Chumpitaz, 2008), of the fit of CSR initiatives and a firms' motives for CSR initiatives related to several consumer attitudes (Becker-Olsen et al., 2006), and of firms' CSR initiatives related to consumers' intention to buy products from these firms (Sen & Bhattacharya, 2001) for example.

This thesis will not focus on all elements of CSR, but only on that part of CSR specifically concerning sustainable development, further referred to as sustainability. Sustainability is considered the extent to which a company is aiming to achieve and contribute to sustainable development, defined as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 43). Since the perception of firm behavior by consumers influences consumer behavior (Becker-Olsen et al., 2006), a firm's sustainability as perceived by consumers may also have an impact on consumer behavior. Consumer behavior can be defined as (the study of) "consumers' actions during searching for, purchasing, using, evaluating and disposing of products and services that they expect will satisfy their needs" (Schiffman & Wisenblit, 2015, p. 30). This thesis investigates the relationship between firms' sustainability efforts and consumer behavior. Important is the addition of a marketing communication factor as an antecedent of both consumer behavior and

the way consumers perceive firms' sustainability efforts: perceived sustainability.

The effects of perceived sustainability on consumer behavior have been researched and discussed in academic literature throughout the years, so these effects are expected to maintain a strong influence. Empirical evidence exists on the relationship between perceived sustainability and consumer behavior in different contexts, but an answer to the question how firms should present their sustainability efforts to customers in order to improve consumer behavior and perceived sustainability remains unknown. A preliminary step needs to be made from a marketing perspective. Earlier research found that state that a better market communication about 'being sustainable' would lead to more sustainable consumption (Pickett-Baker & Ozaki, 2008). But a clear definition of this 'better marketing communication' or implications on how to achieve it lack. Yet, it would be very useful and interesting to gather information on how to communicate sustainability effectively to consumers. One possible way to achieve 'better market communication' could be altering the presentation mode of a firm's message about its sustainability efforts. By exposing consumers to a marketing message presented in different ways, consumers' decision making might be influenced. This different way of presenting the same marketing message is "the mode in which the alternatives are presented", or presentation mode (Shiv & Fedorikhin, 1999, p. 281). By altering a presentation mode the same content is presented to consumers in different ways. Examples of altering presentation modes are showing a real product vs. a symbolic representation of a product (Shiv & Fedorikhin, 1999) or using an audio-visual vs. a visual-only marketing message (Brennan & Babin, 2004), but presentation modes can be altered in a variety of ways by manipulating all kinds of variables. Investigating consumer responses to different presentation modes can give insights in the influence of marketing communication on consumer behavior. The actual effects of altering the presentation mode of a firm's message about its sustainability efforts on consumer behavior are studied in this thesis.

It is interesting for both academics and managers to find out how simplicity and dominance of a message about a firm's sustainability efforts within a presentation mode can influence consumer behavior, partly through perceived sustainability. The main effect of manipulating simplicity of information and dominance of the sustainability message on consumer behavior is the research topic, with perceived sustainability as a possible mediator. Since presentation mode is just the description of a way to present alternatives without a restriction on which variables should be used to alter presentation modes, the choice on which variables to use and manipulate remains with the researcher. The chosen variables to manipulate in order to alter presentation modes for this thesis are the simplicity of information and the

dominance of the marketing message about sustainability efforts. The simplicity of information is the degree to which the marketer has structured the information to simplify the process and reduce the consumer's stress (Cristol & Sealey, 2001). This includes minimizing the unnecessary use of difficult words and not making sentences any longer than necessary to present the intended message. In earlier research the simplicity of information has turned out to play a key role in sustainable consumer behavior (Oates et al., 2008). Differentiating the degree of simplicity of information will play one part in distinguishing different presentation modes. Differentiating the degree of dominance of the sustainability message will play the other part in distinguishing different presentation modes. Dominance of information was also found to influence consumer behavior in earlier research (Brennan & Babin, 2004; Samu & Wymer, 2009), but was hardly researched in a sustainability context. Dominance is the relative emphasis given to an element in a particular message (Samu & Wymer, 2009, p. 432).

To research the influence of the simplicity of information and the dominance of a firm's message about sustainability efforts on consumer behavior as a way of presenting sustainability efforts as a firm, sustainability efforts will be presented through different presentation modes. This is done in the form of an experiment exposing participants to different presentation modes with manipulated levels of simplicity of information and dominance of a sustainability message. Firms participating in sustainability efforts can influence consumers when they know how to present their sustainability efforts effectively, in order to improve consumer behavior, partly through perceived sustainability. To add to academic literature and to give insights about the effective presentation of firms' sustainability to consumers, the following main question will be researched:

How do the simplicity of information and the dominance of a firm's message about sustainability efforts influence consumer behavior?

So far, Hofenk et al. (2017) have done research on 'How and when retailers' sustainability efforts translate into positive consumer responses'. In this very article a research question similar to the one in this thesis was answered, but the main variables that were researched were store identification, store legitimacy, personal norms, and social norms. The 'how' part of that research question has been translated to this thesis in the main research question. Altering the presentation mode by manipulating the simplicity of information and the dominance of a firm's message about sustainability efforts can be seen as a way for firms to try and make their sustainability efforts translate into positive consumer responses. Since store identification and

store legitimacy are tightly coupled to the retailer context, these variables do not play a role in this thesis. Moreover, Hofenk et al. (2017) found that personal norms in particular have a significant effect on the relationship between sustainability and consumer behavior, while social norms were studied as well. Since personal norms and social norms are not limited to the retailer context, this thesis will also take personal norms and social norms into account.

Personal norms reflect feelings of moral obligation to perform specific behaviors to benefit others, according to an internalized structure of values and without regard for social or material benefits to the self (Schwartz, 1977; Schwartz & Howard, 1980). Social norms reflect a person's perceptions of what important others think of performing a specific behavior, or "the perceived social pressure to perform or not to perform the behavior" (Ajzen 1991, p. 188). (Hofenk et al., 2017, p. 4).

The perceived sustainability of consumers and consumer behavior are measured after exposing consumers to information about a firm's sustainability, presented in different modes varying in simplicity of information and dominance of the sustainability message. Furthermore, it is important to keep in mind that consumer behavior is influenced by several factors (Jones et al., 2008). The main relationship in this research is the relationship between the different presentation modes, perceived sustainability and consumer behavior, but other factors can also have possible influence. Other factors possibly influencing the research can be personal norms and social norms, but also more conventional factors, like price or brand for example.

In the next chapter, a more in-depth review of existing literature regarding marketing communication and the sustainability – consumer behavior topic will be presented, and hypotheses will be developed along with an argumentation for the expected effects and a theoretical framework. Chapter 3 will consist of a description of the methodology used, operationalization of core concepts, different presentation modes presented to respondents, and argumentation for the methodological choices. In chapter 4, the actual analysis of the gathered information is presented along with found results. Finally, this thesis will end with the conclusions drawn from gathered information and an answer to the main research question, followed by a discussion, implications, limitations and suggestions for further research.

2. Literature Review and Hypotheses Development

Before conducting a research on the different types of manipulated presentation modes, perceived sustainability, and consumer behavior, it is important to be aware of what is already known in academic literature about the relevant concepts and the factors possibly influencing the studied relationships. This chapter gives an in-depth review of relevant literature while developing hypotheses, eventually resulting in a conceptual model.

2.1 The influence of the simplicity of information and the dominance of the sustainability message on consumer behavior

Consumer behavior is a very broad concept, covering all consumers' actions during searching for, purchasing, using, evaluating and disposing of products and services that they expect will satisfy their needs (Schiffman & Wisenblit, 2015). These consumers' actions are often referred to as consumer responses. A variety of consumer responses have been defined and researched earlier with all kinds of different factors that might influence, or be influenced by consumer responses. In this thesis, consumer behavior is the dependent variable, divided into several possible consumer responses. Consumer responses studied in earlier literature are: store evaluation, shopping intentions, word-of-mouth intentions, and willingness to pay more (Hofenk et al., 2017). These consumer responses will be translated to a product context for this thesis. The four consumer responses forming consumer behavior adapted to a product context are: product evaluation, purchase intentions, word-of-mouth intentions, and willingness to pay more. These four consumer responses summarize most elements of consumer behavior into four measurable concepts. Product evaluation reflects the degree to which a consumer has a positive impression and image of a product. Purchase intentions reflect the degree to which a consumer feels he/she is likely to purchase a product. Word-of-mouth intentions reflect the degree to which a consumer would recommend and tell positive things about a product to other people. Willingness to pay more reflects the degree to which a consumer is willing to pay a higher price for a product than for a similar product.

Marketing communication research has not yet reached consensus on effective ways of affecting consumer behavior by communicating a firm's sustainability efforts. Marketing communication of a firm's sustainability efforts may present a sustainability message to consumers in different ways. This way of presenting is called a 'presentation mode'. Altering the presentation mode of a marketing message has influenced consumer decision making significantly in earlier research (Shiv & Fedorikhin, 1999). Out of the multitude of variables that can be manipulated to alter presentation mode, this thesis focuses on the simplicity of

information and the dominance of the sustainability message. The research intention is to compare different presentation modes communicating the same sustainability efforts to consumers, with each presentation mode having a different combination of values for simplicity of information and dominance of the sustainability message. Consumer responses are expected to differ for consumers exposed to different presentation modes.

Earlier literature found that the marketing communication of a firm's motives to perform sustainability efforts influences consumer behavior. It is argued "that consumers will attempt to understand firms' motives embedded within marketing communications" (Becker-Olsen et al., 2006, p. 47), investigating why firms try to be sustainable and how consumers react to their motives. Maximizing the simplicity of information may be a way to alter a presentation mode in such a way that consumers get the intended message clearly. Simplicity of information is the degree to which the marketer has structured the information to simplify the process and reduce the consumer's stress (Cristol & Sealey, 2001). An ad may not be effective if consumers do not comprehend the intended meaning of the ad or they create an undesired meaning (Ward & Gaidis 1990). In a sustainability context, Alston & Prince Roberts (1999) found that consumers want to be aware of the clear benefits and how environmentally friendly products are. Maximizing the simplicity of information can be done by making a textual message as short as possible while avoiding the use of words which are ambiguous or may be difficult to understand. To get a clearer view when a message has a high or low level of simplicity of information, imagine a message about a product to inform consumers about the feature that the product is water-resistant. An example of a marketing message about a water-resistant product with a high level of simplicity of information is: this product is resistant to water. An example of a marketing message about a water-resistant product with a low level of simplicity of information is: this product is able to resist the penetration of water. The former provides the same message as the latter, but the latter uses an unnecessary long sentence with the addition of the word penetration which might not be completely comprehended by all consumers. This implies a lower level of simplicity of information. By using a high level of simplicity of information the benefits and the intended meaning of the message are still clear while minimizing the risk of consumers not comprehending the meaning or creating an undesired meaning.

Empirical evidence was found that better marketing communication for pro-environmental products positively influences consumer purchase decisions regarding pro-environmental products. Consumers feel good about buying brands that are less damaging to the environment. However, consumers sometimes find it difficult to identify these products (Pickett-Baker & Ozaki, 2008). Further evidence argues that the simpler the information

supplied (providing it is from a trusted source) the more likely it is to be incorporated into sustainable consumer decision making (Oates et al., 2008). Combining earlier studies, there is evidence that consumers want enough information to identify sustainability efforts when making decisions about environmentally friendly products (Alston & Prince Roberts, 1999; Pickett-Baker & Ozaki, 2008), while the information supplied should be simple (Oates et al., 2008). It is also known that increasing the level of simplicity of information reduces the risk of consumers failing to comprehend the intended meaning or creating an undesired meaning (Ward & Gaidis 1990). Increasing the simplicity of information when presenting a firm's sustainability efforts may help consumers to comprehend the intended message, identify sustainable products and make sustainable decisions. This can be translated into the following mechanism: The higher the level of simplicity of information of a firm's sustainability message, the higher the probabilities that consumers comprehend the intended meaning of the message and that consumers make more sustainable decisions related to the firm. By providing a simple message with enough information a firm's sustainability message helps consumers to clearly see the benefits and identify a firm's sustainability efforts, without adding unnecessary complexities. This is expected to lead to sustainable consumer decision making (Oates et al., 2008). Sustainable consumer decision making in the context of a message about a firm's sustainability efforts regarding a product can be translated into a positive effect on the four types of consumer responses (product evaluation, purchase intentions, word-of-mouth intentions, and willingness to pay more) towards the product. This reasoning leads to the following hypothesis:

H1: When presenting a firm's sustainability efforts to consumers, simplicity of information has a positive effect on consumers' (a) product evaluation, (b) purchase intentions, (c) word-of-mouth intentions, and (d) willingness to pay more.

The second used variable for this thesis is the dominance of the sustainability message. A very interesting way to alter a presentation mode in order to influence consumer behavior is to manipulate (relative) attention. "It is increasingly important for products to capture attention, communicate effectively and in an appealing way" (Nancarrow et al., 1998, p. 117). Dominance can be described as the degree to which an element gets relative emphasis within a presentation (Samu & Wymer, 2009). To stick with the example of a water-resistant product, imagine a visual advertisement of the product. An example of a marketing message about a water-resistant product with a high level of dominance is an ad where half of the visual representation is filled with the message that the product is water-resistant, written in a bold

font with bright colors to ensure it attracts the consumer's attention. An example of a marketing message about a water-resistant product with a low level of dominance is an ad of the product that mentions several different features covering a small part of the ad, with one of the features mentioning that the product is resistant to water. In the former example the water-resistant feature gets a high relative emphasis within the presentation, whereas in the latter example the water-resistant feature is just one of the mentioned features a relative attention that is average or below average within the representation. By using a high level of dominance a marketer intentionally draws the attention of the consumer to a specific part of the advertisement.

In earlier literature dominance in marketing messages was studied in different contexts. Studies of brand marketing found that a high level of dominance of a certain element leads to both more attention and more positive attitudes for that element by consumers for example. "When viewing a brand dominant ad, research (Yasukochi and Sakaguchi, 2002) suggests that consumers initially focus on the dominant element (brand)" (Samu & Wymer, 2009, p. 433). To support this role of dominance, it was found that the main effect of brand dominance was significant and led to increased positive attitudes towards the brand and intent to purchase (Samu & Wymer (2009). Within the context of sustainability, it was found that greater marketing exposure helps consumers to identify sustainable products and positively influences purchase decisions (Pickett-Baker & Ozaki, 2008). One way to increase marketing exposure of a firm's sustainability efforts is increasing the level of dominance of the marketing message about sustainability efforts.

In general, earlier research found that consumers will focus more on elements of a marketing message when the level of dominance of that element is higher. It is expected that increasing the dominance of an element leads to increased positive attitudes and intent to purchase (Samu & Wymer, 2009). For this thesis, the chosen element is the message of a firm's sustainability efforts. This can be translated into the following mechanism: The higher the level of dominance of an element within a representation, the more attention consumers pay to the dominant element and the more consumers will have positive attitudes about the dominant element. In line with the theory of planned behavior, it is expected that this mechanism affects the four consumer responses that are studied in this thesis. According to the theory of planned behavior, more consumer attention and positive attitudes generally have positive effects on consumer behavior (Ajzen, 1991). This reasoning leads to the following hypothesis:

H2: When presenting a firm's sustainability efforts to consumers, dominance of the sustainability message has a positive effect on consumers' (a) product evaluation, (b) purchase intentions, (c) word-of-mouth intentions, and (d) willingness to pay more.

Out of all the possible variables to manipulate in order to alter presentation mode, the variables simplicity of information and dominance of the sustainability message were chosen. The choices for these two variables were made firstly because they offer the opportunity to combine marketing communication research with sustainability research. Within a marketing communication context simplicity of information has been studied (Cristol & Sealey, 2001; Oates et al., 2008; Ward & Gaidis 1990) as well as dominance (Nancarrow et al., 1998; Samu & Wymer, 2009; Yasukochi and Sakaguchi, 2002) but not explicitly related to sustainability. With the major increase of attention for sustainability, both in general and in consumer behavior research, it will be interesting to see whether simplicity and dominance have similar or very different effects when related to sustainability compared to other contexts. The studied relationship between simplicity of information and dominance and sustainability may create useful implications for both academics and marketers.

Secondly, within the resources of the researcher in terms of money, time, and skills, it is possible to conduct an experiment with different presentation modes varied in the level of simplicity of information and dominance. Using other marketing communication variables in an experiment like real vs. symbolic (Shiv & Fedorikhin, 1999) or visual vs. audio-visual (Brennan & Babin, 2004) representation for example, is way more comprehensive and difficult to realize. The chosen variables simplicity of information and dominance of the sustainability message have great fit with this research both theoretically and practically.

2.2 The mediating role of perceived sustainability

Firms may execute all kinds of sustainability efforts in order to achieve certain goals. Aside from contributing to sustainable development, firms may influence consumer behavior through their sustainability efforts. When consumers alter their behavior because of a firm's sustainability efforts, their behavior is based on the way they perceive the firm's sustainability: perceived sustainability. Perceived sustainability is considered the extent to which consumers believe a company is aiming to achieve and contributing to sustainable development.

According to existing academic literature, firms' sustainability may lead to increases in several forms of consumer responses, like product preference (Luchs et al., 2010), positive company evaluations and purchase intentions (Mohr & Webb, 2005; Sen & Bhattacharya, 2001;

Wagner et al., 2009; Yoon et al., 2006), consumer trust, repeat patronage intentions and recommendation intentions (Vlachos et al., 2009), and other forms of consumer support (Handelman & Arnold, 1999). Firms responding to sustainability issues by developing and promoting products that appeal to consumers' ethical values can benefit society while fulfilling their own company objectives of achieving long-term profitable growth. By appealing to consumers' ethical values regarding sustainability, consumers will prefer their products over other products (Luchs et al., 2010). Furthermore, consumers perceiving certain companies as sustainable may evaluate these companies more positively and have higher purchase intentions for products of these companies (Sen & Bhattacharya, 2001). Perceived sustainability may also lead to consumer trust and intentions to repeat purchase and recommendation to other consumers under the right motives. By the right motives, benevolence-motivated ones are meant, as opposed to profit-motivated (Vlachos et al., 2009).

There is a lot of support for the sustainability – consumer behavior relationship in existing literature, but most researchers who have studied this relationship warn that this relationship is not a guarantee. Examples are that other factors like company-consumer congruence and CSR-company's ability beliefs may influence the positive effects of sustainability on several consumer responses, (Sen & Bhattacharya, 2001). Furthermore, consumers need to believe that a firm's sustainability efforts are executed because of the right motives in order to influence consumer responses positively (Vlachos et al., 2009).

Another view on the sustainability – consumer behavior relationship is even more skeptic. When consumers make decisions, more conventional factors effectively compete with sustainability criteria. “The increased complexity of decision making led green consumers to complain that sustainable shopping was “hard work” and that sustainable criteria were likely to be abandoned” (Jones et al., 2008, p. 127). Sustainable consumption practices vary widely across sectors: in some sectors, sustainability criteria form a large part of consumers' decision making, while in other sectors more conventional criteria are dominant and sustainability criteria form only a small part or no part at all (McDonald et al. (2009).

When comparing views and articles in existing academic literature, it is safe to say that there is little consensus about the influence of sustainability efforts on consumer behavior and that this relationship may be influenced by a lot of different factors. Consumers may take several criteria into account when making purchase decisions, with sustainability being only one of many. Still, throughout the years many different positive effects of perceived sustainability were found on several aspects of consumer behavior. Siding with the academics acknowledging the influence of sustainability on consumer behavior, this thesis expects that

perceived sustainability has a positive influence on consumer behavior. So it is expected that consumers perceiving firms as more sustainable will show positive consumer responses to these firms. Thus the following hypothesis is proposed:

H3: Perceived sustainability has a positive effect on consumers' (a) product evaluation, (b) purchase intentions, (c) word-of-mouth intentions, and (d) willingness to pay more.

The influence of perceived sustainability on consumer behavior forms the most studied half of the expected mediation of perceived sustainability. The other half, the influence of simplicity of information and dominance of the sustainability message on perceived sustainability, has received much less attention in academic literature. When asking the question what marketing can offer sustainability, “attention is focused on the role of marketing in understanding and changing consumer behavior and more generally in influencing attitudes and beliefs” (Jones et al., 2008, p. 127). Perceived sustainability is such a belief. By altering the presentation mode through manipulating simplicity and dominance when presenting a firm's sustainability efforts to consumers, their beliefs about the firm's sustainability may change.

When altering the presentation mode through simplicity of information of the sustainability message the risk of consumers not comprehending the intended meaning of the message or creating an undesired meaning is reduced (Ward & Gaidis 1990). This leads to a more clear understanding of the intended message by consumers. Clear (positive) market positions are important because they help consumers reduce uncertainty about firms and their products, and increase purchase intentions (Brown & Dacin, 1997). Evidence was also found that simplicity is a key element in successful marketing strategies encouraging behavior change (Saucedo & Schroeder, 2010). The combination of these insights imply that a high level of simplicity reduces the uncertainty of an intended message and thus increases the probability that consumers will interpret the meaning of a message the way it is intended. Furthermore, simplicity is a key element in encouraging behavior change. This adds that an interpretation of the meaning of an intended message the way it is intended will help consumers change their behavior towards the meaning of the message. In the case of presenting a firm's sustainability efforts (with the intention to be perceived as sustainable) with a high level of simplicity of information, that would lead to a positive change towards the sustainability of the firm. The firm is perceived as more sustainable by the consumer. So simplicity of information can be expected to have a positive effect on both consumer behavior (H1) and perceived sustainability. This mechanism can be translated into the following hypothesis:

H4: When presenting a firm's sustainability efforts to consumers, simplicity of information has a positive effect on perceived sustainability.

When altering the presentation mode through dominance of the sustainability message, increasing dominance will shift the focus of the consumer towards the sustainability message. Dominance of an element and increased focus lead to increased positive attitudes toward that element (Samu & Wymer, 2009). By making an element dominant, the initial focus of consumers is on the dominant element. In this case the dominant element is sustainability efforts, so it is expected that this element gains more focus and increased positive attitudes towards it. Perceived sustainability can be seen as a consumer's attitude toward a firm's sustainability efforts. The logical mechanism in this case is that more dominance of the sustainability message and increased focus on the firm's sustainability lead to an increased positive attitude toward a firm's sustainability efforts. In other words, more dominance of the sustainability message leads to more perceived sustainability. This mechanism can be translated into the following hypothesis:

H5: When presenting a firm's sustainability efforts to consumers, dominance of the sustainability message has a positive effect on perceived sustainability.

Expectations rise from earlier research that both dominance (Samu & Wymer, 2009) and simplicity (Ward & Gaidis, 1990; Brown & Dacin, 1997) lead to an increased focus and positive outcomes towards an element. In this case, the element is the message about a firm's sustainability efforts. With dominance and simplicity expected to positively influence perceived sustainability (H4 & H5) and perceived sustainability expected to positively influence consumer behavior (H3), perceived sustainability is expected to mediate the influence of dominance and simplicity on consumer behavior.

2.3 Other factors affecting researched effects: personal norms, social norms and more conventional factors

The relationship between presentation mode, perceived sustainability and consumer behavior is likely to be moderated by personal norms (Hofenk et al., 2017; Sen and Bhattacharya, 2001; Vlachos, 2012) and social norms (Handelman and Arnold, 1999). Personal norms reflect feelings of moral obligation to perform specific behaviors to benefit others, according to an internalized structure of values and without regard for social or material benefits to the self (Schwartz, 1977; Schwartz & Howard, 1980). People are strongly motivated to behave

consistently with their self-expectations and personal norms, because this leads to positive feelings about the self. On the other hand, violations of personal norms lead to negative feelings about the self (Schwartz, 1977). People who value sustainability highly, and thus feel a stronger moral obligation to consume sustainable will likely be affected more by perceived sustainability and respond more positively to a firm's sustainability efforts. This mechanism can be translated into the following hypothesis:

H6: Personal norms strengthen the effects of perceived sustainability on consumers' (a) product evaluation, (b) purchase intentions, (c) word-of-mouth intentions, and (d) willingness to pay more.

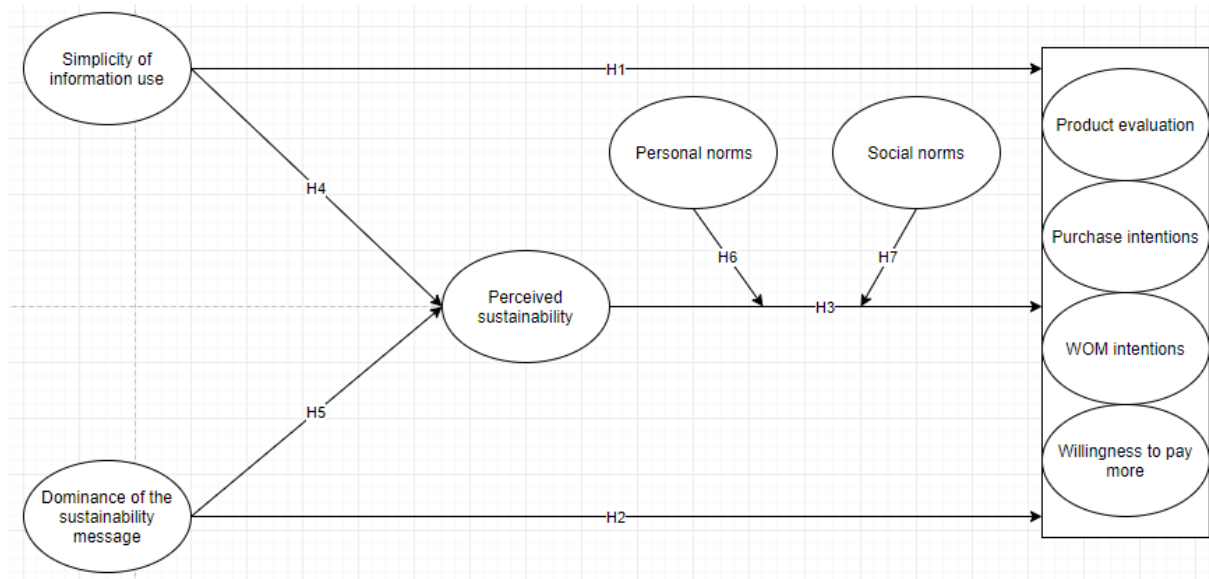
Social norms reflect a person's perceptions of what important others think of performing a specific behavior, or "the perceived social pressure to perform or not to perform the behavior" (Ajzen 1991, p. 188). People have a fundamental desire to affiliate with others and behave accurately, in order to maintain positive feelings about the self. Through conforming to social norms, people seek to achieve these feelings (Cialdini & Goldstein 2004). Therefore, people who perceive more social pressure to consume sustainably will likely be affected more by perceived sustainability and respond more positively to a firm's sustainability efforts. This mechanism can be translated into the following hypothesis:

H7: Social norms strengthen the effects of perceived sustainability on consumers' (a) product evaluation, (b) purchase intentions, (c) word-of-mouth intentions, and (d) willingness to pay more.

Other than personal norms and social norms, more conventional factors effectively compete with sustainability criteria when consumers make decisions about their purchases (Jones et al., (2008); Van Birgelen et al., (2009). Price, brand, and availability are named more conventional factors influencing perceived sustainability and consumer behavior (Jones et al. (2008). Consumers may demand a certain level of product performance (determined by functional, convenient characteristics) before they consider environmental performance, or sustainability (Van Birgelen et al., 2009). In the hypotheses only the necessary personal norms and social norms are taken into account, while the more conventional factors are included as control variables later in the research.

2.4 Conceptual framework

Taking all hypothesized effects and constructs explained in this chapter into account, the following conceptual framework can be developed:



The variables simplicity of information and dominance of the sustainability message together form the independent marketing communication variables of a firm's sustainability efforts. Furthermore, the variables product evaluation, purchase intentions, word-of-mouth intentions, and willingness to pay more together form the dependent consumer behavior variables. Perceived sustainability is the mediator, while personal norms and social norms are moderators in this conceptual framework.

3. Research Methodology

In this methodology chapter, the theoretical concepts introduced in the literature review and hypothesis development are operationalized. In addition, the different phases of the conducted research are elaborated on by discussing the research design, measurements, and data collection. The reasoning behind the chosen design and the order of the questionnaire are explained, the tests for validity and reliability are discussed, a description of the conducted pilot study is presented, and finally an elaboration on the data collection process is given.

3.1 Research design

In order to measure the constructs of the proposed conceptual model, an experiment that shows four groups of respondents each a different presentation mode of an advertised product was conducted. The experiment is conducted with a full factorial, between subjects design. A full factorial design is chosen because it “consists of all possible combinations of the levels of the factors” (Kuhfeld et al., 1994, p. 546). This resulted in a 2x2 design with the two factors being the independent variables dominance of the information about sustainability and simplicity of the information about sustainability, with each of them having two possibilities (high/low). The dependent variables are perceived sustainability and consumer behavior, divided into product evaluation, purchase intentions, word-of-mouth intentions, and willingness to pay more. To be able to research the influence of the manipulated factors on the dependent variables this 2x2 design turned into a between subjects design with four groups each containing a presentation mode differing in information about sustainability (dominant – simple, not dominant – simple, dominant – not simple, and not dominant – not simple). After being exposed to one of the four presentation modes, each respondent is asked the exact same questions including items measuring consumer behavior, perceived sustainability, personal norms, and social norms. The used presentation modes can be found in appendix A.

For the purpose of this experiment, a fictional product is created, named ‘ROYAL X’, offered by the fictional firm with a fictional logo, named ‘ChocoRoyal’. To keep the focus on sustainability efforts and marketing communication as much as possible, a fictional product is used. This way product performance is exactly the same, and other factors like brand or availability will not influence the results of the research. A chocolate bar was chosen because it is a fast moving consumer good that most consumers have experience with purchasing. The

consumer will react most naturally when confronted with a common purchase like this because regular shopping habits are more likely to be formed and maintained.

It is easier to encourage sustainable buying behavior in fast moving consumer goods, such as food, where regular shopping allows habits to be formed and maintained rather than it is for the occasional purchase of large items like a fridge, a motor car or a house (Jones et al., 2008, p. 127).

As for the sample, it is important that all respondents are consumers. Luckily, basically anyone who ever purchases a product can be considered a consumer. Because of this, there were no real restrictions or necessary characteristics in finding respondents. The aim initially was to find a minimum of 30 respondents for each of the four groups that were exposed to one of the presentation modes. Respondents were asked to participate either through social media platforms such as Facebook, LinkedIn, and Whatsapp or personally, face to face.

Each presentation mode presents an advertisement with four elements. A logo, a picture of the product, a message about the product, and a message about the sustainability of the product and the firm. The logo and the picture of the product are exactly the same in each presentation mode. The message about the sustainability of the product and the firm is different in size, placement and text for each presentation mode. The size and placement are different in order to manipulate dominance while the text is different in order to manipulate simplicity. The message about the product contains the same text in each presentation mode, but is altered in size and placement to add to the manipulation of dominance. These manipulations resulted in four different presentation modes of an advertisement of the product ROYAL X offered by the firm ChocoRoyal (appendix A).

3.2 Measurements

Now that the design of the experiment and the manipulations of the different presentation modes are clear, the next step is to ask respondents the right questions in order to measure the relevant concepts and study the hypothesized effects. For each relevant concept existing items and scales from earlier literature were used, sometimes slightly adjusted to fit within the context of the research.

First of all, the concept consumer behavior is divided into four types of consumer responses. For each type of consumer responses three items are used. All items are obtained from Hofenk et al. (2017). The items were adjusted to the context of this thesis if necessary. To measure perceived sustainability, a scale is adopted from Kim et al. (2015). The items

have been adjusted to the fictional firm context of this thesis. Kim et al. (2015) used the original constructs and items to measure perceived environmental sustainability. To measure personal norms and social norms, a scale is adopted also from Hofenk et al. (2017). Before conducting the experiment, the items have been adjusted to fit the researched fictional product 'ROYAL X' from the fictional firm 'ChocoRoyal'. Also a few items were altered to remove unclarities in the questionnaire because of the results of a pilot study. The final questionnaire consists of all the items about product evaluation, purchase intentions, word-of-mouth intentions, willingness to pay more, perceived sustainability, personal norms and social norms, followed by four questions on control variables and three questions on demographics. All items were based on a 5-point Likert scale ranging from strongly agree to strongly disagree (appendix B).

In order to ensure that the conducted research and the questionnaire used in it are suitable to draw conclusions about hypothesized effects it is important to use measurement items and constructs that are valid and reliable. The first type of validity is content validity, or the degree to which a question measures the concept it is intended to measure. To increase content validity, an accurate operationalization is important (Vennix, 2009). This is the main reason that the used scales to measure the four consumer behavior constructs, perceived sustainability, personal norms, and social norms were obtained from earlier literature (Hofenk et al., 2017; Kim et al., 2015) where the validity was already checked when operationalizing concepts before conducting the related researches. For the remainder of the questions in the experiment, which are about control factors and demographics, questions were asked as directly as possible so that possible confusion about what these questions aim to measure is reduced to a minimum. To increase the content validity of the questionnaire used in the experiment, respondents were asked whether there were any unclear sentences in the questions in the pilot study. Questions were adjusted afterwards if necessary.

The second type of validity is construct validity, or the degree to which used items and constructs are coherent with each other in order to measure the intended theoretical concepts. To test the validity of the used items and constructs a factor analysis was conducted to confirm whether the used items in the experiment rightfully measure the researched concepts altogether. Because of the limited means and knowledge available to perform a confirmatory factor analysis, the choice was made to conduct exploratory factor analysis with a fixed number of factors. The main goal of this analysis is to control for the convergent and discriminant validity of the used constructs. To keep a clear overview of the factors and to be able to draw reliable conclusions with a sample size of $N=140$, the factor analysis was split

into two separate analyses. One for the 12 items aimed to measure the dependent constructs related to consumer behavior (product evaluation, purchase intentions, word-of-mouth intentions, and willingness to pay more) and one for the 11 items aimed to measure the hypothesized mediating and moderating constructs (perceived sustainability, personal norms, and social norms). This way it was ensured that there were at least 10 participants per variable, which is recommended to conduct appropriate factor analysis (Field, 2009).

The factor analyses to confirm the construct validity of the dependent consumer behavior constructs are conducted with a fixed number of factors of 4 and oblique rotation (direct oblimin). Oblique rotation is appropriate because both on theoretical grounds and based on the correlation matrix it is assumed that underlying factors are related or correlated to each other, since they are all related to consumer behavior. During the first factor analysis, the item 'When similar products are charged less than product X, I would buy one of those other products (reverse)' did not correlate with any of the other items and only loaded on one factor of its own. To increase the validity of the constructs this item was deleted and the analysis was conducted again. After the second analysis it was found that the item 'The impression I have of product X is favorable' was cross loading on two factors with absolute loadings of 0.584 and 0.421. To increase the validity of the constructs this item was also deleted and a third and final factor analysis was conducted with the 12 items related to consumer behavior that showed four clear factors with distinguished items loading on them. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy had a value of 0.910 and Bartlett's test of sphericity was significant ($p < 0.001$). These statistics confirm that the used sample and variables were adequate for a factor analysis.

The factor analysis to confirm the construct validity of the perceived sustainability, personal norms, and social norms constructs was conducted with a fixed number of factors of 3 and oblique rotation (direct oblimin). Oblique rotation is appropriate because both on theoretical grounds and based on the correlation matrix it is assumed that underlying factors are related or correlated to each other, especially personal norms and social norms. This analysis showed three clear factors with distinguished items loading on them. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy had a value of 0.800 and Bartlett's test of sphericity was significant ($p < 0.001$). These statistics confirm that the used sample and variables were adequate for a factor analysis.

Next to the validity of the conducted research, reliability is also an important aspect of the research to make sure that measurement errors by chance are reduced to a minimum. A reliability analysis was conducted separately for each scale measuring Cronbach's alpha,

which is the most common measure of scale reliability. The values of Cronbach's alpha for each construct and the percentage of variance are presented in table 1. Even though there is no definite consensus about the required value of Cronbach's alpha for a scale to be defined as reliable, a value of 0.8 or higher is generally accepted (Field, 2009). Since for each used scale the value of Cronbach's alpha is 0.8 or higher it is safe to say that reliability in the conducted research is high for each used scale.

Construct	Original # of items	Cronbach's alpha	# of items deleted	Cronbach's alpha after deletion	Percentage explained variance
Product evaluation	3	0.90	1	0.85	87%
Purchase intentions	3	0.92	0		86%
WOM intentions	3	0.89	0		82%
Willingness to pay more	3	0.62	1	0.80	83%
Perceived sustainability	5	0.89	0		70%
Personal norms	3	0.82	0		74%
Social norms	3	0.83	0		75%

Table 1: Internal consistency and convergent validity

Next to the main researched constructs, a few control variables are measured as well as a few questions on demographics (age, gender, education). The control variables are:

1. The likability for chocolate in general. If people do or do not like chocolate in general, this can influence their choices regarding consumer responses.
2. The frequency of buying chocolate. Whether people like chocolate or not, they might hardly ever buy it themselves. This can also influence their choices regarding consumer responses.

3. The difference respondents think their own personal consumer behavior makes on the environment. If people believe that their own actions have a small/large impact on the environment, they will probably make other choices regarding sustainable products.
4. The attributes people deem important when buying chocolate. With multiple answers possible, this might help explain why respondents make certain choices about consumer responses and/or perceived sustainability. The possible attributes were adopted from Van Birgelen et al. (2009) and the attribute sustainability was added.

The questionnaire was structured as follows: the first questions measure the four types of consumer responses. Respondents are asked about these constructs first because they will be most fresh and curious at the start of the questionnaire, while the main effects can be measured without any bias from earlier questions. Next, the respondents are asked about the mediator: perceived sustainability. It is possible that respondents will be a little more eager to give socially desirable answers because they have already evaluated the product itself. But overall the questions about consumer responses and perceived sustainability are clearly distinct, and this order is preferred over respondents answering questions about perceived sustainability first and then being biased when answering questions about consumer responses. This is because the main effects are the most important ones and thus preferred to have the least bias. Furthermore, a respondent confronted with questions about sustainability first who rated the firm as very sustainable is more likely to give positively biased answers on consumer responses than the other way around. Since sustainability is seen as something positive, a respondent might feel obliged to answer positively after rating the firm as sustainable, whereas a respondent answering positively on consumer responses might have made several other considerations than sustainability because he/she was not confronted with questions about sustainability yet. So the chosen order of questions reduces the chance of bias because of earlier questions as much as possible. After questions about the consumer responses and perceived sustainability, respondents answered the questions about their own personal and social norms regarding sustainability. This choice is also made to limit socially desirable answers. If these questions would be asked first, respondents would be more likely to answer the questions about consumer responses and perceived sustainability in line with their answers on personal and social norms. Finally, right before the final word of thanks, respondents are asked about a few demographics like age, gender, and education. These questions are asked last to ensure respondents can finish the experiment lightly, with little effort.

3.3 Pilot study

Before conducting the actual experiment, a pilot study was conducted in order to remove indistinctness in the questionnaire and to do a first manipulation check. For the pilot study, a number of possible consumers were contacted via Whatsapp and asked to participate. This resulted into a pilot study with 12 participating respondents. Each of these respondents were shown four different presentation modes of a chocolate advertisement. The presentation modes varied in dominance of the information about sustainability (yes/no) and simplicity of the information about sustainability (yes/no). The four different presentation modes can be found in Appendix A. In order to check whether the manipulations were successful and consumers agreed with the intended dominance and simplicity level of the different presentation modes, the respondents were asked to rate the following sentences on a 5-point scale ranging from 1 (strongly agree) to 5 (strongly disagree) after seeing each presentation mode:

- When looking at the advertisement above, I think the message about sustainability is dominant.
- When looking at the advertisement above, I think the information about sustainability is simple.

After rating all four presentation modes on these manipulations, respondents of the pilot study were asked to give their opinion on the items in the questionnaire that would be asked to all respondents in the final experiment, in order to increase the validity of the questionnaire. To check the understandability, all respondents were asked to read the questions on items about consumer responses (Hofenk et al., 2017), perceived sustainability (Kim et al., 2015), and personal/social norms (Hofenk et al., 2017). Respondents had the opportunity to read the proposed questions and then give their opinion by either confirming the question was understandable or by describing in their own words what they did not find understandable.

As a result of the pilot study, three items were altered. 3 out of 12 respondents did not understand the perceived sustainability item 'I think firm X invests for the environment' because of the confusing use of the word 'for', so this item was rephrased to 'I think firm X invests to improve the environment'. Also 3 out of 12 respondents did not understand the perceived sustainability item 'I think firm X achieves environmental innovativeness' because the word 'achieve' was unclear in this sentence, so this item was rephrased to 'I think firm X is environmentally innovative. And finally 2 out of 12 respondents noted that the personal norms item 'My conscience calls me to purchase from firms committing to sustainability efforts' would be easier to understand when using the phrase 'my conscience tells' instead of 'my conscience calls', so this item was rephrased to 'My conscience tells me to purchase from firms committing to sustainability efforts'. The questionnaire that was ultimately used in the experiment can be found in appendix B.

3.4 Data collection

The actual experiment was conducted in two waves. For the first wave four questionnaires were mainly contacted through social media platforms like Whatsapp, Facebook and LinkedIn. Because the intended respondents are possible consumers, demographic variables were not taken into account in the selection of the respondents. Demographic variables do not change whether people are possible consumers or not, but they were still be asked to be able to control for these variables in hindsight to enable the analysis of possible influences of demographic variables on the results. The respondents in the first wave were randomly assigned to one of four groups, each group being exposed to one of the four presentation modes with a different combination of the two levels of the two manipulated factors simplicity and dominance of the sustainability message. The questions asked about this presentation mode and about the respondents' personal opinion were exactly the same for each group. This first wave included 157 respondents participating in the experiment. A problem was that only 90 out of the 157 respondents filled out the questionnaire completely, which means that 67 responses included missing data. Aside from the problem in missing data, this also meant that there was a large variety in missing data between the groups exposed to the different presentation modes. Since the method of finding respondents through social media is not very personal, it is highly probable that those 67 respondents with missing data just saw the experiment in their feed, clicked on it, and got distracted before completely finishing it. Because such a large part of the responses included missing data, the observation turned out very incomplete. The collected data were also unequally distributed at this point since the sample size for the early questions was way larger than the sample size for the final questions. To be able to obtain a complete observation and prevent an analysis on unequally distributed data missing data were excluded.

To cope with the problems in the data collection and enable the analysis of a complete dataset, a second wave of data collection was conducted. This second wave of data collection was similar to the first wave, but with a few important differences. The first difference was the way of contacting respondents. Instead of just sharing a questionnaire on social media platforms, respondents were asked face to face to take some time to fill out the questionnaire at the moment they were asked to participate. This personal approach was aimed to ensure that respondents would complete the experiment and missing data would be reduced. The second wave of data collection also provided the opportunity to include an extra manipulation check. Since the manipulations were only checked in a small pilot study, including a manipulation check in the questionnaire was helpful to see the manipulation checks reconfirmed with the respondents. In

the second wave, at the start of the questionnaire after showing the presentation mode for the first time, respondents were asked whether they thought the message about sustainability in the advertisement was simple (yes or no) and dominant (yes or no). All other questions were exactly the same as in the questionnaire used in the first wave, to ensure results of both waves were still comparable. Finally, the second wave of data collection provided the chance to balance the group sizes of the four different groups. Instead of randomly assigning a respondent to one of the four presentation modes, each respondent was assigned to one the presentation modes as selected by the researcher, followed by the exact same questionnaire. By manipulating the assignment of the presentation mode it was ensured that all group sizes were equal. Together, the two waves of data collection resulted in a sample possible consumers, meeting the size conditions even after excluding missing data.

After excluding missing data, the collected data from the two waves combined comprise 140 respondents, equally and randomly divided into four groups of 35. This process of randomization aims to prevent most of the disturbances that could affect the conclusions of the experiment (Vennix, 2009). The eventually used sample (N=140) consisted of 49% men and 51% women. The age distribution was as follows: 17-25 years 74%, 26-35 years 16%, 36-45 years 4%, 46 years and older 6%. Regarding education, 2% finished lower secondary education, 26% higher secondary education, 3% middle-level vocational education, 15% higher-level vocational education, and 54% university. The frequencies of the demographics of the sample are presented in table 2.

Age	Frequency	Education	Frequency	Gender	Frequency	Wave	Frequency
17-25	104	Lower secondary	3	Male	69	1	90
26-35	22	Higher secondary	36	Female	71	2	50
36-45	6	Middle-level vocational	4				
46+	8	Higher-level vocational	21				
		University	76				

Table 2: Demographics

4. Analyses and Hypotheses Testing Results

In this chapter the results of the quantitative analysis conducted on the collected data are explained. By checking the manipulations and checking whether necessary assumptions are met, evidence is provided that the collected data are valid to analyze and conclusions about the hypothesized effects can be drawn based on the analysis. The conclusions about the hypotheses are provided along with the related results in this chapter, concluded by an overview of the possible influences of several control variables. All statistical output can be found in Appendix C.

4.1 Manipulation checks and assumptions

To be able to draw conclusions about the effects of dominance of the sustainability message and the simplicity of the sustainability message in the different presentation modes, it is important to ensure the different presentation modes are really perceived differently in terms of the values of these independent variables. That is why the manipulations of the independent variables have been checked twice during the research process. In the pilot study that was conducted before the actual experiment, 12 respondents were shown all four presentation modes and asked whether they thought the sustainability message in each presentation mode was dominant and simple. The values in the answer ranged from ‘Strongly agree’ (1) to ‘Strongly disagree’ (5). The results of respondents’ perceptions were grouped into four presentation modes with different manipulations for dominance and simplicity and means were compared by conducting an independent samples t-test. The results showed that the two presentation modes with a simple sustainability message ($M = 1.83$, $SE = 1.01$) were perceived significantly more simple than the presentation modes with a non-simple sustainability message ($M = 3.83$, $SE = 1.09$), $t(46) = 6.60$, $p = 0.00$. The results also showed that for the presentation modes with a dominant sustainability message ($M = 1.08$, $SE = 0.28$) the sustainability message was perceived significantly more dominant than for the respondents who had seen a presentation mode with a non-dominant sustainability message ($M = 4.13$, $SE = 1.19$), $t(46) = 12.17$, $p = 0.00$.

During the second wave of the actual experiment, 50 respondents were shown one of the four presentation modes and asked whether they thought the sustainability message was dominant and simple. The values in the answer were yes (1) and no (2). An independent samples t-test was conducted again and the results showed that the respondents who had seen a presentation mode with a simple sustainability message ($M = 1.13$, $SE = 0.34$) perceived the advertisement to be significantly more simple than the respondents who had seen a

presentation mode with a non-simple sustainability message ($M = 1.67$, $SE = 0.48$), $t(48) = 4.46$, $p = 0.00$. The results also showed that for the respondents who had seen a presentation mode with a dominant sustainability message ($M = 1.07$, $SE = 0.27$) their perception of dominance was significantly more confirming than for the respondents who had seen a presentation mode with a non-dominant sustainability message ($M = 1.65$, $SE = 0.49$), $t(48) = 5.31$, $p = 0.00$. After finding significant differences in both the pilot study and the manipulation check in the second wave of the experiment, it is safe to say that the manipulations were successful and the independent variables can be used for the research.

After successfully checking the used manipulations, there are several other assumptions the data should meet in order to increase the validity of the research. Four important assumptions for the research in general are normally distributed data, homogeneity of variance, data measured at least at interval level, and independence of data (Field, 2009). Other assumptions related to a specific part of the analysis are discussed alongside the hypotheses testing results.

By exploring the descriptive statistics it was confirmed that for all variables the skewness and kurtosis variables were in between the accepted values of -2 and 2 (Field, 2009; Gravetter & Wallnau, 2014) to prove normal distribution. Furthermore, homogeneity of variance was tested by looking at Levene's test using the items as dependent variable and the variant they were assigned to as factor. Most variables indeed met the assumption of homogeneity by showing insignificant scores on Levene's test (Field, 2009). Only the items 'I think ChocoRoyal utilizes green technology' and 'My conscience tells me to purchase from firms committing to sustainability efforts' were significant on Levene's test. This means that those two items are less reliable than the rest of the items. Still, if a p-value of 0.01 would be used instead of 0.05 the null hypothesis of equal variances would not be rejected so it is not absolutely necessary to delete these items.

The assumption of measuring data at least at interval level is impossible to meet, considering the researched independent, dependent, mediating, and moderating variables cannot be expressed in raw numbers. That is why all constructs are measured at the ordinal level, using Likert-items ranging from 1 to 5. Finally, the assumption of independence is met for all data. All respondents participating in the experiment filled out the questionnaire at a completely different time and place, not knowing the behavior of other respondents or to which experimental group they were assigned. Also all respondents participated only once.

4.2 Hypotheses testing results

4.2.1 Main effects

The main effects of the manipulated values of dominance of the sustainability message and the simplicity of the sustainability message on the consumer behavior variables product evaluation, purchase intentions, word-of-mouth intentions, willingness to pay more were analyzed using MANCOVA. The variables simple and dominant that were assigned randomly and equally spread among participants were used as independent variables, whereas the four factors obtained from the first factor analysis were used to represent the different dependent consumer behavior variables. The control variables were added as covariates.

Before performing MANCOVA, the assumptions that the observed covariance matrices of the dependent variables are equal across groups and the presence sufficient correlations within the used variables to be adequate were checked. Box M turned out insignificant, $p=0.976$ and Bartlett's test of sphericity turned out significant, $p<0.001$. These test results confirm that both assumptions were met (Field, 2009) and MANCOVA is appropriate to analyze the data.

In the results of the multivariate tests Wilk's Lambda was found to be insignificant for all differences between groups based on dominance of the sustainability message and the simplicity of the sustainability message, showing that there are multivariate effects for neither dominance of the sustainability message nor simplicity of the sustainability message. The results of the multivariate tests to test whether there are any main effects of simplicity and dominance on consumer behavior are presented in table 3.

Construct	df	F	η	p
Simplicity	4	1.27	.04	.286
Dominance	4	1.21	.04	.309

Table 3: Effects of simplicity and dominance on consumer behavior

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$

The absence of significant effects in the test results of the conducted MANOVA contrasts the prediction of H1 that when presenting a firm's sustainability efforts to consumers, simplicity of information has a positive effect on consumers' (a) product evaluation, (b) purchase intentions, (c) word-of-mouth intentions, and (d) willingness to pay more and the prediction of H2 that when presenting a firm's sustainability efforts to consumers, dominance of the sustainability message has a positive effect on consumers' (a) product evaluation, (b) purchase intentions, (c) word-of-mouth intentions, and (d) willingness to pay more. Both H1 and H2 should thus be rejected.

4.2.2 Mediation effects

Contrary to prior expectations, neither simplicity of the sustainability message nor dominance of the sustainability message has a direct effect on the different consumer behavior constructs. This means that the only possible mediation by perceived sustainability is a full mediation. Whether full mediation is the case or no mediation is found, it is interesting to study whether simplicity of the sustainability message and/or dominance of the sustainability message affect perceived sustainability or whether perceived sustainability affects the different consumer behavior constructs. In order to test these effects, the predicted effects of perceived sustainability on the different consumer behavior constructs were tested using several simple regression analyses. Since both the independent variable perceived sustainability and the dependent variables related to consumer behavior are factors obtained from Likert items and can be seen as interval variables, regression is the most suitable way to test the predicted causal relationships. Since perceived sustainability is the only predictor variable, a simple regression is conducted for each dependent variable. Along with the used factors being the right type of variable, namely interval, a few more assumptions need to be checked before using regression analysis. Homoscedasticity of the predictor variable, independent errors, normally distributed errors, independence of the values of the outcome variable, and linearity are the important assumptions (Field, 2009). Furthermore, the sample size of $N=140$ is well above the recommended sample size. Field (2009) recommends 10-15 cases per predictor variable, whereas Hair et al. (2009) acknowledge sample sizes below 30 can be appropriate for simple regression. All assumptions of the regression analysis have been met, the only downside being that the data are rather heteroscedastic, which has consequences for the generalizability of the results that should be taken into account. The assumptions independence of the values of the outcome variable, normally distributed errors, and linearity have all been met. Histograms and P-P plots confirm the latter two assumptions. Finally, the independency of errors was tested using a Durbin-Watson test. The values of this test range from 1.454 to 1.792, whereas values below 1 and above 3 are reason for concern (Field, 2009). All statistical assumption checks can be found in appendix C.

Continuing with the actual outcomes of the regression analyses, the effect of perceived sustainability on product evaluation, purchase intentions, word-of-mouth intentions, and willingness to pay more are all found to be significant. The results of the regression analyses to test whether there are effects of perceived sustainability on the four types of consumer responses are presented in table 4.

Dependent variable	β	SE	p
Product evaluation	0.34***	0.08	0.00
Purchase intentions	0.47***	0.08	0.00
Word-of-mouth intentions	0.53***	0.07	0.00
Willingness to pay more	0.36***	0.08	0.00

Table 4: Effects of perceived sustainability on consumer behavior

***p < 0.001 **p < 0.01 *p < 0.05

When looking how much of the variability in the outcome is accounted for by the predictor, values of adjusted r-squared are all rather low. This is in line with theoretical expectations, as perceived sustainability is only a small part of all possible influencers of consumer behavior. It is interesting to see though that the variability explained by perceived sustainability (the value of adjusted r-squared) is much higher for purchase intentions (0.218) and word-of-mouth intentions (0.275) than for product evaluation (0.109) and willingness to pay more (0.120). Finally, the standardized Beta coefficients are all positive. To conclude, the fact that all tested effects are positive and significant confirm the prediction that perceived sustainability has a positive effect on consumers' product evaluation, purchase intentions, word-of-mouth intentions, and willingness to pay more. H3 should thus be confirmed, adding the notion that the positive effect of perceived sustainability impacts purchase intentions and word-of-mouth intentions more than it impacts product evaluation and willingness to pay more.

The next step in the analysis of a possible mediation effect is to test whether dominance of the sustainability message and the simplicity of the sustainability message affect the perceived sustainability about the product Royal X. The relationship between these variables was tested using a two-way univariate ANCOVA. The variables simple and dominant that were assigned randomly and equally spread among participants were used as independent variables, whereas one of the factors obtained from the second factor analysis was used to represent the dependent perceived sustainability variable. The control variables were added as covariates.

Before performing ANCOVA, the assumption of homogeneity of variances for each combination of the groups of the two independent variables was tested using Levene's test. The results show that Levene's test was insignificant, $p = 0.169$. A non-significant result for Levene's test is indicative of the assumption being met (Field, 2009). Other assumptions relevant for the two-way ANCOVA analysis had been checked earlier. In the results of the tests

of between-subjects effects all differences on perceived sustainability between groups based on dominance of the sustainability message and the simplicity of the sustainability message were found to be insignificant. The results of the tests of between-subjects to test whether there are any effects of simplicity and dominance on perceived sustainability are presented in table 5.

Construct	df	F	η	p
Simplicity	1	3.36	0.03	0.07
Dominance	1	0.71	0.01	0.40

Table 5: Effects of simplicity and dominance on perceived sustainability

***p < 0.001 **p < 0.01 *p < 0.05

The absence of significant effects in the test results of the conducted two-way ANCOVA contrasts the prediction of H4 that when presenting a firm's sustainability efforts to consumers, simplicity of information has a positive effect on perceived sustainability and the prediction of H5 that when presenting a firm's sustainability efforts to consumers, dominance of the sustainability message has a positive effect on perceived sustainability. Both H4 and H5 should thus be rejected and there is no mediation effect of perceived sustainability.

4.2.3 Moderation effects

To add to the conducted regression analyses, the moderating effects of personal norms and social norms were tested. To test these effects, moderator variables were created for the variables personal norms and social norms obtained from the factor analysis earlier. Next a multiple regression analysis was performed eight times. Four times with perceived sustainability, personal norms, and the personal norms moderator variables as independent variables and product evaluation, purchase intentions, word-of-mouth intentions, and willingness to pay more each as a dependent variable once. Four times with perceived sustainability, personal norms, and the personal norms moderator variables as independent variables.

Before drawing conclusions from the conducted multiple regression analyses, it is necessary to check the assumption of no multicollinearity. To do so, collinearity statistics were taken into account during the multiple regression analyses. The variance inflation factor (VIF) and the related tolerance statistic were checked for the perceived sustainability, personal norms, social norms, personal norms moderator, and social norms moderator variables. All tolerance values were found to range from of 0.963 to 0.999. All variables were found to have a VIF ranging from 1.001 to 1.040. The general guidelines were used that if the average VIF is

substantially greater than 1 then the regression may be biased (Bowerman & O'Connell, 1990), and tolerance below 0.2 indicates a potential problem (Menard, 1995). In this case, the tolerance statistics are all well above 0.2 and the average VIF is very close to 1 and this confirms that collinearity is not a problem.

In H6 and H7 it was stated that personal norms and social norms are expected to strengthen the effects of perceived sustainability on consumers' product evaluation, purchase intentions, word-of-mouth intentions, and willingness to pay more. The results of the regression analyses to test whether there are any moderating effects from personal norms and social norms on the effect of perceived sustainability on consumer behavior are presented in table 6.

Construct	Dependent variable	β	SE	p
Personal norms	-ProdEv	-0.09	0.08	0.27
	-PurchInt	0.26**	0.07	0.00
	-WOMInt	0.29***	0.07	0.00
	-WTPM	0.40***	0.07	0.00
Personal norms x Perceived sustainability (moderator)	-ProdEv	-0.02	0.06	0.77
	-PurchInt	-0.18*	0.07	0.01
	-WOMInt	-0.15*	0.05	0.03
	-WTPM	-0.15*	0.06	0.04
Social norms	-ProdEv	0.11	0.08	0.17
	-PurchInt	-0.17*	0.07	0.03
	-WOMInt	-0.17*	0.07	0.02
	-WTPM	-0.24**	0.08	0.00
Social norms x Perceived sustainability (moderator)	-ProdEv	0.05	0.07	0.50
	-PurchInt	0.10	0.06	0.19
	-WOMInt	0.10	0.06	0.16
	-WTPM	0.12	0.07	0.13

Table 6: Effects of personal norms and social norms on perceived sustainability – consumer behavior relationship

***p < 0.001 **p < 0.01 *p < 0.05

When looking at the results of the multiple regression analysis including personal norms as a moderator, it was found that there was no interaction effect of perceived sustainability and personal norms on product evaluation. Interaction effects of perceived sustainability and personal norms were found on purchase intention, word-of-mouth intentions, and willingness to pay more, but these effects were negative in contrast to H6. Instead of strengthening the effects of perceived sustainability on purchase intention, word-of-mouth intentions, and willingness to pay more, personal norms seem to weaken these effects. H6 should thus be

rejected. When looking at the results of the multiple regression analysis including social norms as a moderator, it was found that there was no interaction effect of perceived sustainability and social norms on product evaluation, purchase intention, word-of-mouth intentions, or willingness to pay more. H7 should thus also be rejected.

4.3 Controlling for personal consumer characteristics and other factors

To take other factors into account that might influence the measured effects, four control variables were measured. Three of these variables were added to the main analysis as covariates of the conducted MANCOVA. The control variables added as covariates are 'I think my personal consumer behavior makes a difference for the environment', 'In general, I like chocolate', and 'How often do you buy chocolate?'. In the results of the multivariate tests it was found that Wilk's Lambda for the effects of the covariates 'In general, I like chocolate' ($F(4, 126) = 1.086, p = 0.366$), and 'How often do you buy chocolate?' ($F(4, 126) = 0.667, p = 0.616$) were insignificant. The covariate 'I think my personal consumer behavior makes a difference for the environment' ($F(4, 126) = 3.697, p = 0.007$) did have a significant effect though. When looking at the tests of between-subjects effects, this covariate showed significant effects on both word-of-mouth intentions ($F(1, 129) = 5.09, p = 0.026$) and willingness to pay more ($F(1, 129) = 14.893, p < 0.001$). Even though the variances explained by word-of-mouth intentions (partial eta-squared = 0.038) and willingness to pay more (partial eta-squared = 0.103) are fairly small, the difference consumers think they make on the environment significantly affects parts of their consumer behavior.

For the fourth measured control variable, 'When I buy chocolate, I make my choice based on:', multiple answers were possible and this item did not have a suitable scale to include as a covariate in MANCOVA. Descriptives and frequencies were used to get an idea which characteristics consumers (claim to) take into account when buying chocolate. Even though other results showed that perceived sustainability has significant effects on all four consumer behavior constructs, only 31 respondents (22%) claimed to base their choice on sustainability. An interesting representation was that The most popular characteristic to base a choice of chocolate consumption on was taste ($N=131, 94\%$). Other popular characteristics were price ($N=91, 65\%$) and brand ($N=67, 48\%$). Since only an advertisement was shown, a fictional brand was used, and no price was presented in the experiment, the researched effects of the presentation modes might be somewhat incomplete. The remaining possible options to base the choice of chocolate consumption on, healthiness ($N=22$), availability ($N=32$), and design ($N=24$) were selected by only 23% or less.

The control variables age, gender, education, and which wave of data collection respondents were part of were also added as covariates in the main MANCOVA. The results showed that none of these control variables showed a significant effect for Wilk's Lambda. This means that none of the control variables age ($F(4, 126) = 2.076, p=0.088$), gender ($F(4, 126) = 0.1798, p=0.133$), education ($F(4, 126) = 0.833, p=0.507$), and in which data collection wave a respondent participated ($F(4, 126) = 0.870, p=0.484$) significantly influenced the results of the experiment.

5. Discussion

Discussion and conclusion

This thesis has aimed to contribute to academic literature connecting sustainability to consumer behavior, from a marketing communication perspective. To achieve this, an experiment was conducted testing the effects of different presentation modes on perceived sustainability and consumer behavior. In contrast to expectations risen from earlier literature (Oates et al., 2008; Samu & Wymer, 2009; Shiv & Fedorikhin, 1999), altering the simplicity and the dominance of different presentation modes did not affect consumer behavior or perceived sustainability significantly. Perceived sustainability did affect consumer behavior in its turn, as was expected and in line with earlier literature (Luchs et al., 2010; Mohr & Webb, 2005; Sen & Bhattacharya, 2001; Wagner et al., 2009; Yoon et al., 2006). An interesting addition are the moderating effects of personal norms and social norms that were expected to strengthen the relationship between perceived sustainability and consumer behavior (Hofenk et al., 2017), while in the experiment no such effects were found. One could say that the influence of sustainability on consumer behavior, which has been researched in numerous other studies, was confirmed. The newly researched influences on perceived sustainability and consumer behavior from a marketing communication perspective however, did not meet expectations. These findings imply that the only answer on the research question ‘*How does the presentation mode of a firm’s sustainability efforts influence consumer behavior?*’ is: neither through simplicity nor through dominance of the sustainability message. From this research, no statements can be made about other possible ways for the presentation mode of a firm’s sustainability efforts to influence consumer behavior. The focus only on simplicity and dominance of the sustainability message leaves much room for further research on possible ways marketing communication can influence the relationship between sustainability and consumer behavior.

The lack of support for the hypothesized main effects contrasts the expectations risen earlier in this thesis based on earlier literature. Yet, the fact that there is no consensus on the relationship between marketing and sustainability in existing literature makes these findings a little less surprising. In existing literature separate views exist on this relationship. With one side claiming that marketing and sustainability can hardly be related and another side claiming that marketing can contribute to the development of sustainable consumption (Jones et al., 2008). The hypotheses in this thesis are based on the latter, but the results lean more towards the former being right. While for marketing aspects like healthiness (Saucedo & Schroeder, 2010) or brands (Samu & Wymer, 2009) simplicity and dominance of a marketing message

may positively influence consumer behavior, this seems not to be the case for sustainability.

Out of the control variables that were taken into account in this research, the difference consumers think they make on the environment turned out to influence the sustainability in the behavior of consumers. It may be possible that consumers still do not think the purchase of a sustainable product will make a difference for the environment, whether the sustainability message is simple and/or dominant or not. A sustainability message that convinces consumers that their choices make a difference for the environment may be more effective to influence consumer behavior than manipulating the simplicity or dominance of the sustainability message. Another possible explanation outside the data collected within this research could be that consumers care more about the motives of firms to engage in sustainability efforts (Becker-Olsen et al., 2006), while altering the simplicity or the dominance of the sustainability message does not provide consumers with any information on their motives for sustainability efforts. It could also be the case that consumers care more about other, more conventional factors than about sustainability (Jones et al., 2008; McDonald et al., 2009).

Even though it can be concluded that manipulating the simplicity and dominance of the sustainability message in a presentation mode of an advertisement on a fictitious chocolate bar does not have any positive influence on perceived sustainability or consumer behavior, it is still possible that presentation modes can affect perceived sustainability and consumer behavior. Manipulating other aspects of the presentation mode than simplicity and dominance, using different types of presentation like video or audio for example, or using different product contexts like existing products or other categories of products could all have an impact. The only conclusion that can be drawn safely is that presentation modes as manipulated in this exact research does not affect perceived sustainability or consumer behavior.

The results showed that perceived sustainability does positively influence consumer behavior and this being in line with earlier literature, but the hypothesized moderating effects of personal norms and social norms strengthening the relationship between perceived sustainability and consumer behavior (Hofenk et al., 2017) did not find empirical support. The difference in the results on personal norms may be related to the difference in context. While Hofenk et al. (2017) asked respondents about actual retail stores, respondents of this research were asked about one representation of a commercial for a chocolate bar they were shown. Further research in different contexts might clarify the role of personal norms and social norms in the relationship between sustainability and consumer behavior.

Within academic literature the relationship between sustainability and consumer behavior was extended by this thesis, with the focal point being the inclusion of a marketing

communication perspective. By putting elements of marketing communication literature (Schiffman & Wisenblit, 2015; Shiv & Fedorikhin, 1999) in a sustainability context, new insights on how to use, or how not to use sustainability to influence consumer behavior were found. It should be noted that the conducted research had its contextual boundaries. Placing the relationship between sustainability and consumer behavior in a marketing communication perspective could be extended with similar studies in different contexts possibly resulting in useful implications for both theory and practice.

Theoretical implications

Adding to academic literature is the confirmation of the positive effects of sustainability on consumer behavior. An interesting take on this relationship is that significant positive effects of perceived sustainability were found on all four measured types of consumer behavior. These results confirm that, as expected based on earlier research, sustainability indeed positively influences product evaluation (Luchs et al., 2010), purchase intentions (Mohr & Webb, 2005; Sen & Bhattacharya, 2001; Wagner et al., 2009; Yoon et al., 2006), word-of-mouth intentions (Vlachos et al., 2009), and willingness to pay more (Creyer, 1997). It is probable that perceived sustainability affects consumer behavior both consciously and subconsciously, since significant effects were found on all types of consumer behavior while only 22% of respondents actually mentioned sustainability as an influencer of consumer decisions.

In contrast to expectations based on earlier research is the lack of empirical evidence for positive effects of simplicity of information (Cristol & Sealey, 2001; Oates et al, 2008) and dominance of information (Nancarrow et al., 1998; Samu & Wymer, 2009; Yasukochi and Sakaguchi, 2002) on consumer behavior. When presenting different groups with different presentation modes manipulated in simplicity and dominance of information in a sustainability context, no significant effects on perceived sustainability and consumer behavior were found. While these results contrast expectations, they might support other theories claiming that more conventional factors play a larger role in consumer behavior than marketing communication or sustainability criteria (Jones et al, 2008; McDonald et al., 2009). Participants of the experiment added to the probability of the dominant role of conventional factors, since taste, price, and brand were mentioned most as influencers of consumer decisions. This cannot be taken for granted though, as a control question in the experiment is the only measure that involved conventional factors. This does not provide sufficient empirical evidence to assume conventional factors dominate marketing communication and sustainability criteria in consumer decision making, yet it hints in this direction.

In general, the results imply that manipulating simplicity of information or dominance of messages about sustainability efforts are not reliable ways to influence perceived sustainability and consumer behavior. The confirmation of the positive effects of sustainability on consumer behavior implies that it is still very interesting for academics to learn more about possible ways to influence perceived sustainability and consumer behavior. Since there are many possible ways to think of while sustainability concerns are ever growing but only limited research was done within a marketing communication perspective, the relationship with sustainability is worthy of increased attention in marketing communication literature.

Managerial implications

Empirical evidence was provided that perceived sustainability has positive effects on consumer behavior. More specifically, perceived sustainability positively influences product evaluation, purchase intentions, word-of-mouth intentions, and willingness to pay more. Organizations committing to sustainability efforts can thus arouse positive consumer responses if consumers perceive them as sustainable. This means that organizations committing to sustainability efforts are advised to present their sustainability effort to the public in such a way that consumers acknowledge their sustainability efforts and the organization and its product gain perceived sustainability. Even organizations who do not commit to sustainability efforts might increase positive consumer responses if they are perceived to be sustainable. In this case another question is whether it is ethically responsible to present your organization as sustainable without actually committing to sustainability efforts. If any organization presenting themselves as sustainable arouses the perception of company hypocrisy (Wagner et al., 2009) or insincere motives (Becker-Olsen et al., 2006; Yoon et al., 2006) this may lead to negative consequences for the organization, whether the consumers' perceptions are legitimate or not. Without addressing this issue in further detail, it is found that increasing perceived sustainability can be profitable for any organization.

Even with this knowledge in mind, there are numerous ways for an organization to present itself and to present its sustainability efforts. The question how to present an organization as effectively as possible in order to increase perceived sustainability and positive consumer responses is highly relevant from a marketing perspective, but the answer remains unclear. The results of the experiment conducted in this thesis imply that no empirical evidence was found that altering either the simplicity or the dominance of the sustainability message when presenting your product to the public is an effective way of doing this. Organizations are advised to try using other ways of presentation in order to increase perceived sustainability.

Another possibility is focusing on other, more conventional factors than sustainability in order to arouse positive consumer responses (Jones et al., 2008; McDonald et al., 2009). If an organization does, however, commit to sustainability efforts, this is a competitive advantage and it would be a missed opportunity not to use this advantage to positively influence consumer behavior. This is one of the reasons why it is very interesting, not only for academics but also for managers, to try and find effective ways of presenting sustainability efforts in order to increase perceived sustainability and positive consumer responses.

Limitations and suggestions for further research

In this thesis, an experiment was conducted showing a presentation mode to respondents that was manipulated in terms of the simplicity and dominance of the sustainability message in the context of a fictional company selling a fictional chocolate bar. Like with any research this method has its limitations, offering suggestions for further research.

First of all, a fictional experimental context was used. This means that the presentation modes that were shown to respondents only capture a simplified, limited version of reality. Respondents revealed that they usually base their consumer decisions about chocolate based on either taste, price, brand, other factors or a combination of these factors. In this experiment, the brand was fictional while factors like taste and price were impossible to evaluate. Both from the respondents of this experiment and from earlier literature it is probable that consumers take more factors into account when making decisions than the possible factors within the boundaries of this experiment (Jones et al., 2008; McDonald et al., 2009). These limitations affect the external validity of the found results. To increase external validity future research should alter the experimental context to a more realistic situation where it is possible for respondents to evaluate all kinds of factors when measuring their consumer behavior.

To add to the limitedly realistic experimental context, a fictional chocolate bar was the research subject while general conclusions were drawn out of the results. Even though a fast moving consumer good like chocolate lends itself well for encouraging sustainable consumer behavior (Jones et al., 2008), results could be very different if other types of products would be used to gain findings on perceived sustainability and consumer behavior. This leads to the suggestion for future research to use different kinds of products in the experimental context.

Moreover, instead of measuring actual consumer behavior, behavioral intentions were used to measure consumer behavior. Earlier studies provided evidence that a majority of consumers may have the intention to purchase sustainable products without actually purchasing sustainable products (Luchs et al., 2010). It is incorrect to assume that consumer intentions

automatically lead to actual consumer behavior (Ajzen, 1991). Instead of measuring behavioral intentions, future research should thus measure actual consumer behavior.

Furthermore, the analysis of the results of the conducted experiment has a few methodological limitations. In the measurement of both the consumer behavior constructs product evaluation and willingness to pay more one of the items was deleted. Even though the items were deleted to increase construct validity, it left two constructs measured by only two items. The deletion of these items was evaluated and deemed necessary to secure construct validity without clearly altering the meaning of the scales. Nevertheless, two-item scales might pose problems regarding the representation of the entire content domain of a construct (MacKenzie et al., 2011). Furthermore, when conducting regression analysis to obtain finding about the effects of perceived sustainability on consumer behavior, the data were found to be rather heteroscedastic. Homoscedastic data would be more useful since external validity is higher with homoscedastic data than with heteroscedastic data (Field, 2009). Because of this, it is suggested that future research should use more homoscedastic data to gain better external validity.

Finally, the relationship between sustainability and marketing communication in general goes beyond the boundaries of this thesis and its limitations. Future research on the relationship between marketing communication and sustainability should look for other ways to influence sustainability and consumer behavior related to it than just manipulating the simplicity of information and the dominance of messages about sustainability efforts. The data collected in this research showed that the difference consumers think they make on the environment significantly influences consumer behavior. Future research on how to strengthen consumers' beliefs that their behavior does make a difference for the environment could raise new opportunities for studies on marketing communication in a sustainability context. Not only the relationship between marketing communication and sustainability could use an increase in academic research, the relationship between sustainability and consumer behavior also deserves more attention. Even though positive effects of sustainability on consumer behavior are confirmed, more conventional factors seem to be more important in influencing consumer behavior. Future research comparing sustainability perceptions with more conventional factors in explaining consumer behavior would help to increase the knowledge about the role of sustainability efforts in the topic of consumption nowadays.

Appendix

Appendix A

Presentation modes



1: Sustainability message low dominance and high simplicity.



2: Sustainability message low dominance and low simplicity.



3: Sustainability message high dominance and high simplicity.



4: Sustainability high dominance and low simplicity.

Appendix B

Questionnaire experiment

(Here, a picture of one of four presentation modes is shown).

Please take a good look at the advertisement above. The first 2 questions are only about the information about the sustainability of the product.

1. Do you think the information about the sustainability of the product in this advertisement is simple?
2. Do you think the information about the sustainability of the product in this advertisement is dominant?

(These first two questions were only asked in the second wave of the experiment, all further questions were asked to all respondents).

(Here, the picture of the same presentation mode is shown again).

Please take a good look at the advertisement shown above again. It is an advertisement for the product ROYAL X, offered by the firm ChocoRoyal. After seeing the advertisement, please answer the following questions about the product ROYAL X:

1. Product X makes a good impression
2. The impression I have of product X is favorable [deleted]
3. I have a positive image of product X
4. It would be very possible for me to purchase product X
5. I would certainly purchase product X
6. How likely would you be to purchase product X? [very unlikely—very likely]
7. I would say positive things about product X to other people
8. I would recommend product X to people who seek my advice
9. I would encourage friends and relatives to purchase product X
10. I would be willing to pay higher prices for product X than for other similar products
11. I would be willing to continue purchasing product X, even if its prices increased
12. When similar products are charged less than product X, I would buy one of those other products. [reversed item, deleted]

(Here, the picture of the same presentation mode is shown again).

Thanks for answering the first questions about ROYAL X, the following questions are about the firm ChocoRoyal. To help you remember the advertisement, it is shown again to you above.

1. I think firm X utilizes green technology
2. I think firm X invests to improve the environment
3. I think firm X produces eco-friendly products
4. I think firm X is environmentally innovative
5. I think firm X recycles/ uses recycled materials

Thanks for answering the questions about the firm ChocoRoyal, the next questions are about your own opinion, unrelated to ChocoRoyal or ROYAL X:

1. My conscience tells me to purchase from firms committing to sustainability efforts
2. Purchasing products from firms committing to sustainability efforts is fully in line with my moral conviction
3. I feel morally obliged to purchase products from firms committing to sustainability efforts
4. Most people who are important to me think I should purchase products from firms committing to sustainability efforts
5. By purchasing products from firms committing to sustainability efforts I would live up to the expectations that people who are important to me have
6. People who are important to me would love to see me purchasing products from firms committing to sustainability efforts
7. I think my personal consumer behavior makes a difference for the environment
8. In general, I like chocolate
9. How often do you buy chocolate (never – daily)
10. When I buy chocolate, I make my choice based on: (more than one answer possible)
(Taste, Brand, Price, Healthiness, Availability, Design, Sustainability)

Thanks for filling out this questionnaire, the final questions are some simple questions about yourself:

1. What is your age?
2. What is your gender?
3. What is the highest level of education you have completed?

Appendix C

Statistical output

Pattern matrix first factor analysis (no items deleted)

Pattern Matrix ^a				
	Component			
	1	2	3	4
1. The product ROYAL X makes a good impression	,831			
2. The impression I have of ROYAL X is favorable	,928			
3. I have a positive image of ROYAL X.	,703			
4. It would be very possible for me to purchase ROYAL X	,870			
5. I would certainly purchase ROYAL X	,614			
6. How likely would you be to purchase ROYAL X?	,890			
7. I would say positive things about ROYAL X to other people			-,858	
8. I would recommend ROYAL X to people who seek my advice			-,797	
9. I would encourage friends and relatives to purchase ROYAL X			-,874	
10. I would be willing to pay higher prices for ROYAL X than for other similar products				-,794
11. I would be willing to continue purchasing ROYAL X, even if its prices increased				-,784
Q12_reverse		1,000		

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 7 iterations.

b. Absolute scores below ,40 have been suppressed.

Pattern matrix second analysis (item 12 deleted)

Pattern Matrix^a

	Component			
	1	2	3	4
1. The product ROYAL X makes a good impression	,637			
2. The impression I have of ROYAL X is favorable	,584			-,421
3. I have a positive image of ROYAL X.	,659			
4. It would be very possible for me to purchase ROYAL X				-,797
5. I would certainly purchase ROYAL X				-,897
6. How likely would you be to purchase ROYAL X?				-,864
7. I would say positive things about ROYAL X to other people		,884		
8. I would recommend ROYAL X to people who seek my advice		,833		
9. I would encourage friends and relatives to purchase ROYAL X		,913		
10. I would be willing to pay higher prices for ROYAL X than for other similar products			,967	
11. I would be willing to continue purchasing ROYAL X, even if its prices increased			,733	

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

- a. Rotation converged in 24 iterations.
- b. Absolute scores below ,40 have been suppressed.

Final factor analysis on consumer behavior constructs (items 2 and 12 deleted)

KMO and Bartlett's test of sphericity

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,910
Bartlett's Test of Sphericity	Approx. Chi-Square	1079,326
	df	45
	Sig.	,000

Correlation matrix

Component Correlation Matrix

Component	1	2	3	4
1	1,000	,649	,562	,386
2	,649	1,000	,594	,271
3	,562	,594	1,000	,153
4	,386	,271	,153	1,000

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Pattern matrix

Pattern Matrix^a

	Component			
	1	2	3	4
1. The product ROYAL X makes a good impression				,590
3. I have a positive image of ROYAL X.				,610
4. It would be very possible for me to purchase ROYAL X	,863			
5. I would certainly purchase ROYAL X	,903			
6. How likely would you be to purchase ROYAL X?	,926			
7. I would say positive things about ROYAL X to other people		,895		
8. I would recommend ROYAL X to people who seek my advice		,833		
9. I would encourage friends and relatives to purchase ROYAL X		,936		
10. I would be willing to pay higher prices for ROYAL X than for other similar products			,980	
11. I would be willing to continue purchasing ROYAL X, even if its prices increased			,685	

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

- a. Rotation converged in 13 iterations.
- b. Absolute scores below ,40 have been suppressed.

Factor analysis on perceived sustainability, personal norms, and social norms constructs

KMO and Bartlett's test of sphericity

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,800
Bartlett's Test of Sphericity	Approx. Chi-Square	809,420
	df	55
	Sig.	,000

Correlation matrix

Component Correlation Matrix

Component	1	2	3
1	1,000	,032	-,086
2	,032	1,000	-,527
3	-,086	-,527	1,000

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Pattern matrix

Pattern Matrix^a

	Component		
	1	2	3
1. I think ChocoRoyal utilizes green technology	,831		
2. I think ChocoRoyal invests to improve the environment	,853		
3. I think ChocoRoyal produces eco-friendly products	,895		
4. I think ChocoRoyal is environmentally innovative	,839		
5. I think ChocoRoyal recycles/ uses recycled materials	,757		
1. My conscience tells me to purchase from firms committing to sustainability efforts		,850	
2. Purchasing products from firms committing to sustainability efforts is fully in line with my moral conviction		,848	
3. I feel morally obliged to purchase products from firms committing to sustainability efforts		,849	

4. Most people who are important to me think I should purchase products from firms committing to sustainability efforts			-,761
5. By purchasing products from firms committing to sustainability efforts I would live up to the expectations that people who are important to me have			-,891
6. People who are important to me would love to see me purchasing products from firms committing to sustainability efforts			-,913

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

- a. Rotation converged in 9 iterations.
- b. Absolute scores below ,40 have been suppressed.

Reliability analysis for used scales

Product evaluation

Reliability Statistics	
Cronbach's	
Alpha	N of Items
,854	2

Purchase intention

Reliability Statistics	
Cronbach's	
Alpha	N of Items
,918	3

Word-of-mouth intentions

Reliability Statistics	
Cronbach's	
Alpha	N of Items
,889	3

Willingness to pay more

Reliability Statistics	
Cronbach's	
Alpha	N of Items
,799	2

Perceived sustainability

Reliability Statistics	
Cronbach's	
Alpha	N of Items
,892	5

Personal norms

Reliability Statistics	
Cronbach's	
Alpha	N of Items
,820	3

Social norms

Reliability Statistics	
Cronbach's	
Alpha	N of Items
,833	3

Pilot study: Manipulation check simplicity of the sustainability message

T-Test

Group Statistics					
	IntSim	N	Mean	Std. Deviation	Std. Error Mean
Simple	high	24	1,83	1,007	,206
	low	24	3,83	1,090	,223

Independent Samples Test						
Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)
Simple	Equal variances assumed	,083	,775	-6,601	46	,000
	Equal variances not assumed			-6,601	45,715	,000

Pilot study: Manipulation check dominance of the sustainability message

T-Test

Group Statistics					
	IntDom	N	Mean	Std. Deviation	Std. Error Mean
Dominant	high	24	1,08	,282	,058
	low	24	4,13	1,191	,243

Independent Samples Test						
Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)
Dominant	Equal variances assumed	18,548	,000	-12,174	46	,000
	Equal variances not assumed			-12,174	25,577	,000

Wave 2: Manipulation check simplicity of the sustainability message

T-Test

Group Statistics					
	SimplePM	N	Mean	Std. Deviation	Std. Error Mean
Do you think the information about the sustainability of the product in this advertisement is simple?	Yes	23	1,13	,344	,072
	No	27	1,67	,480	,092

Independent Samples Test						
Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)
Do you think the information about the sustainability of the product in this advertisement is simple?	Equal variances assumed	13,495	,001	-4,462	48	,000
	Equal variances not assumed			-4,581	46,732	,000

Wave 2: Manipulation check dominance of the sustainability message

T-Test

Group Statistics					
	DominantPM	N	Mean	Std. Deviation	Std. Error Mean
Do you think the information about the sustainability of the product in this advertisement is dominant?	Yes	27	1,07	,267	,051
	No	23	1,65	,487	,102

Independent Samples Test						
Levene's Test for Equality of Variances						
		F	Sig.	t	df	Sig. (2-tailed)
Do you think the information about the sustainability of the product in this advertisement is dominant?	Equal variances assumed	32,688	,000	-5,309	48	,000
	Equal variances not assumed			-5,080	32,876	,000

Skewness and Kurtosis

	Q1		Q2		Q3		Q4		Q5		Q6		Q7	
	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis
Statistic	0,429	-0,929	0,490	-0,678	0,545	-0,442	0,237	-0,993	-0,309	-0,677	0,038	-1,146	0,012	-0,494
Std. Error	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407
	Q8		Q9		Q10		Q11		Q12		Q13			
	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis		
Statistic	-0,105	-0,495	0,051	-0,902	-0,328	-1,305	-0,599	-0,302	1,055	1,040	0,972	0,425		
Std. Error	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407		
	Q14		Q15		Q16		Q17		Q18		Q19		Q20	
	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis
Statistic	0,801	0,456	1,207	1,107	0,450	-0,248	0,354	-0,071	0,650	-0,189	0,905	0,942	0,296	-0,896
Std. Error	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407
	Q21		Q22		Q23		Q24		Q25		Q26			
	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis		
Statistic	-0,160	-0,587	-0,209	-0,407	0,009	-0,682	0,372	-0,821	0,968	-0,117	-0,216	-0,974		
Std. Error	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407	0,205	0,407		

Levene's test of homogeneity of variance

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
1.	The product ROYAL X Based on Mean makes a good impression	,924	3	136	,431
2.	The impression I have Based on Mean of ROYAL X is favorable	1,745	3	136	,161
3.	I have a positive image Based on Mean of ROYAL X.	,349	3	136	,790
4.	It would be very possible Based on Mean for me to purchase ROYAL X	1,486	3	136	,221
5.	I would certainly Based on Mean purchase ROYAL X	,231	3	136	,875
6.	How likely would you be Based on Mean to purchase ROYAL X?	,595	3	136	,620
7.	I would say positive Based on Mean things about ROYAL X to other people	1,106	3	136	,349
8.	I would recommend Based on Mean ROYAL X to people who seek my advice	,223	3	136	,880
9.	I would encourage friends Based on Mean and relatives to purchase ROYAL X	,619	3	136	,604
10.	I would be willing to pay Based on Mean higher prices for ROYAL X than for other similar products	2,312	3	136	,079
11.	I would be willing to Based on Mean continue purchasing ROYAL X, even if its prices increased	1,108	3	136	,348
12.	When similar products Based on Mean are charged less than ROYAL X, I would buy one of those other products	1,892	3	136	,134
1.	I think ChocoRoyal Based on Mean utilizes green technology	2,824	3	136	,041

2. I think ChocoRoyal invests Based on Mean to improve the environment	,301	3	136	,824
3. I think ChocoRoyal Based on Mean produces eco-friendly products	1,053	3	136	,371
4. I think ChocoRoyal is Based on Mean environmentally innovative	,884	3	136	,451
5. I think ChocoRoyal Based on Mean recycles/ uses recycled materials	,748	3	136	,525
1. My conscience tells me to Based on Mean purchase from firms committing to sustainability efforts	3,710	3	136	,013
2. Purchasing products from Based on Mean firms committing to sustainability efforts is fully in line with my moral conviction	1,431	3	136	,236
3. I feel morally obliged to Based on Mean purchase products from firms committing to sustainability efforts	,960	3	136	,414
4. Most people who are Based on Mean important to me think I should purchase products from firms committing to sustainability efforts	1,978	3	136	,120
5. By purchasing products Based on Mean from firms committing to sustainability efforts I would live up to the expectations that people who are important to me have	1,992	3	136	,118
6. People who are important Based on Mean to me would love to see me purchasing products from firms committing to sustainability efforts	,640	3	136	,590

MANCOVA for main effects

Box M test and Bartlett's test of sphericity

Box's Test of Equality of Covariance Matrices^a

Box's M	17,640
F	,557
df1	30
df2	50852,964
Sig.	,976

Tests the null hypothesis
that the observed
covariance matrices of
the dependent variables
are equal across groups.

a. Design: Intercept +
Q24 + Q25 + Q26 + Q29
+ Q30 + Wave + Age +
Simple + Dominant +
Simple * Dominant

Bartlett's Test of Sphericity^a

Likelihood Ratio	,000
Approx. Chi-Square	139,644
df	9
Sig.	,000

Tests the null hypothesis that the
residual covariance matrix is
proportional to an identity matrix.

a. Design: Intercept + Q24 + Q25 +
Q26 + Q29 + Q30 + Wave + Age +
Simple + Dominant + Simple *
Dominant

Multivariate tests and tests of between-subjects effects

Multivariate Tests ^a							
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	,062	2,091 ^b	4,000	126,000	,086	,062
	Wilks' Lambda	,938	2,091 ^b	4,000	126,000	,086	,062
	Hotelling's Trace	,066	2,091 ^b	4,000	126,000	,086	,062
	Roy's Largest Root	,066	2,091 ^b	4,000	126,000	,086	,062
Q24	Pillai's Trace	,105	3,697 ^b	4,000	126,000	,007	,105
	Wilks' Lambda	,895	3,697 ^b	4,000	126,000	,007	,105
	Hotelling's Trace	,117	3,697 ^b	4,000	126,000	,007	,105
	Roy's Largest Root	,117	3,697 ^b	4,000	126,000	,007	,105
Q25	Pillai's Trace	,033	1,086 ^b	4,000	126,000	,366	,033
	Wilks' Lambda	,967	1,086 ^b	4,000	126,000	,366	,033
	Hotelling's Trace	,034	1,086 ^b	4,000	126,000	,366	,033
	Roy's Largest Root	,034	1,086 ^b	4,000	126,000	,366	,033
Q26	Pillai's Trace	,021	,667 ^b	4,000	126,000	,616	,021
	Wilks' Lambda	,979	,667 ^b	4,000	126,000	,616	,021
	Hotelling's Trace	,021	,667 ^b	4,000	126,000	,616	,021
	Roy's Largest Root	,021	,667 ^b	4,000	126,000	,616	,021
Q29	Pillai's Trace	,054	1,798 ^b	4,000	126,000	,133	,054
	Wilks' Lambda	,946	1,798 ^b	4,000	126,000	,133	,054
	Hotelling's Trace	,057	1,798 ^b	4,000	126,000	,133	,054
	Roy's Largest Root	,057	1,798 ^b	4,000	126,000	,133	,054
Q30	Pillai's Trace	,026	,833 ^b	4,000	126,000	,507	,026
	Wilks' Lambda	,974	,833 ^b	4,000	126,000	,507	,026
	Hotelling's Trace	,026	,833 ^b	4,000	126,000	,507	,026
	Roy's Largest Root	,026	,833 ^b	4,000	126,000	,507	,026
Wave	Pillai's Trace	,027	,870 ^b	4,000	126,000	,484	,027
	Wilks' Lambda	,973	,870 ^b	4,000	126,000	,484	,027
	Hotelling's Trace	,028	,870 ^b	4,000	126,000	,484	,027
	Roy's Largest Root	,028	,870 ^b	4,000	126,000	,484	,027
Age	Pillai's Trace	,062	2,076 ^b	4,000	126,000	,088	,062
	Wilks' Lambda	,938	2,076 ^b	4,000	126,000	,088	,062
	Hotelling's Trace	,066	2,076 ^b	4,000	126,000	,088	,062
	Roy's Largest Root	,066	2,076 ^b	4,000	126,000	,088	,062
Simple	Pillai's Trace	,039	1,268 ^b	4,000	126,000	,286	,039
	Wilks' Lambda	,961	1,268 ^b	4,000	126,000	,286	,039
	Hotelling's Trace	,040	1,268 ^b	4,000	126,000	,286	,039
	Roy's Largest Root	,040	1,268 ^b	4,000	126,000	,286	,039

Dominant	Pillai's Trace	,037	1,213 ^b	4,000	126,000	,309	,037
	Wilks' Lambda	,963	1,213 ^b	4,000	126,000	,309	,037
	Hotelling's Trace	,038	1,213 ^b	4,000	126,000	,309	,037
	Roy's Largest Root	,038	1,213 ^b	4,000	126,000	,309	,037
Simple * Dominant	Pillai's Trace	,025	,806 ^b	4,000	126,000	,524	,025
	Wilks' Lambda	,975	,806 ^b	4,000	126,000	,524	,025
	Hotelling's Trace	,026	,806 ^b	4,000	126,000	,524	,025
	Roy's Largest Root	,026	,806 ^b	4,000	126,000	,524	,025

a. Design: Intercept + Q24 + Q25 + Q26 + Q29 + Q30 + Wave + Age + Simple + Dominant + Simple * Dominant

b. Exact statistic

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	ProdEvFactor	16,553 ^a	10	1,655	1,744	,078	,119
	PurchIntFactor	18,623 ^b	10	1,862	1,996	,039	,134
	WOMIntFactor	21,346 ^c	10	2,135	2,340	,014	,154
	WTPMFactor	24,911 ^d	10	2,491	2,817	,003	,179
Intercept	ProdEvFactor	6,551	1	6,551	6,901	,010	,051
	PurchIntFactor	4,423	1	4,423	4,740	,031	,035
	WOMIntFactor	1,879	1	1,879	2,060	,154	,016
	WTPMFactor	,970	1	,970	1,097	,297	,008
Q24	ProdEvFactor	,490	1	,490	,516	,474	,004
	PurchIntFactor	3,339	1	3,339	3,578	,061	,027
	WOMIntFactor	4,642	1	4,642	5,090	,026	,038
	WTPMFactor	13,171	1	13,171	14,893	,000	,103
Q25	ProdEvFactor	,074	1	,074	,078	,781	,001
	PurchIntFactor	3,855	1	3,855	4,132	,044	,031
	WOMIntFactor	1,703	1	1,703	1,867	,174	,014
	WTPMFactor	,968	1	,968	1,094	,298	,008
Q26	ProdEvFactor	1,223	1	1,223	1,288	,258	,010
	PurchIntFactor	,963	1	,963	1,032	,312	,008
	WOMIntFactor	1,686	1	1,686	1,849	,176	,014
	WTPMFactor	,125	1	,125	,141	,708	,001
Q29	ProdEvFactor	6,401	1	6,401	6,744	,010	,050
	PurchIntFactor	,101	1	,101	,109	,742	,001
	WOMIntFactor	,045	1	,045	,050	,824	,000
	WTPMFactor	,037	1	,037	,042	,839	,000
Q30	ProdEvFactor	,277	1	,277	,292	,590	,002
	PurchIntFactor	,018	1	,018	,019	,890	,000
	WOMIntFactor	1,036	1	1,036	1,135	,289	,009

	WTPMFactor	1,658	1	1,658	1,875	,173	,014
Wave	ProdEvFactor	1,219	1	1,219	1,284	,259	,010
	PurchIntFactor	,220	1	,220	,236	,628	,002
	WOMIntFactor	,605	1	,605	,663	,417	,005
	WTPMFactor	,355	1	,355	,401	,528	,003
Age	ProdEvFactor	6,381	1	6,381	6,722	,011	,050
	PurchIntFactor	1,541	1	1,541	1,651	,201	,013
	WOMIntFactor	2,766	1	2,766	3,033	,084	,023
	WTPMFactor	1,250	1	1,250	1,413	,237	,011
Simple	ProdEvFactor	,065	1	,065	,069	,793	,001
	PurchIntFactor	1,689	1	1,689	1,810	,181	,014
	WOMIntFactor	,013	1	,013	,014	,905	,000
	WTPMFactor	1,557	1	1,557	1,760	,187	,013
Dominant	ProdEvFactor	,619	1	,619	,652	,421	,005
	PurchIntFactor	,573	1	,573	,614	,435	,005
	WOMIntFactor	2,722	1	2,722	2,985	,086	,023
	WTPMFactor	2,853	1	2,853	3,226	,075	,024
Simple * Dominant	ProdEvFactor	1,773	1	1,773	1,868	,174	,014
	PurchIntFactor	,114	1	,114	,123	,727	,001
	WOMIntFactor	,252	1	,252	,276	,600	,002
	WTPMFactor	,103	1	,103	,117	,733	,001
Error	ProdEvFactor	122,447	129	,949			
	PurchIntFactor	120,377	129	,933			
	WOMIntFactor	117,654	129	,912			
	WTPMFactor	114,089	129	,884			
Total	ProdEvFactor	139,000	140				
	PurchIntFactor	139,000	140				
	WOMIntFactor	139,000	140				
	WTPMFactor	139,000	140				
Corrected Total	ProdEvFactor	139,000	139				
	PurchIntFactor	139,000	139				
	WOMIntFactor	139,000	139				
	WTPMFactor	139,000	139				

a. R Squared = ,119 (Adjusted R Squared = ,051)

b. R Squared = ,134 (Adjusted R Squared = ,067)

c. R Squared = ,154 (Adjusted R Squared = ,088)

d. R Squared = ,179 (Adjusted R Squared = ,116)

Q24 = I think my personal consumer behavior makes a difference for the environment

Q25 = In general, I like chocolate

Q26 = How often do you buy chocolate? [daily - never]

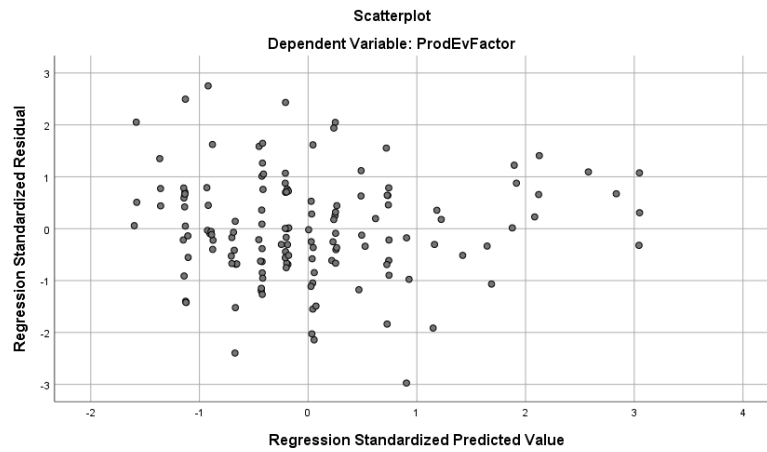
Q29 = What is your gender?

Q30 = What is the highest level of education you have completed?

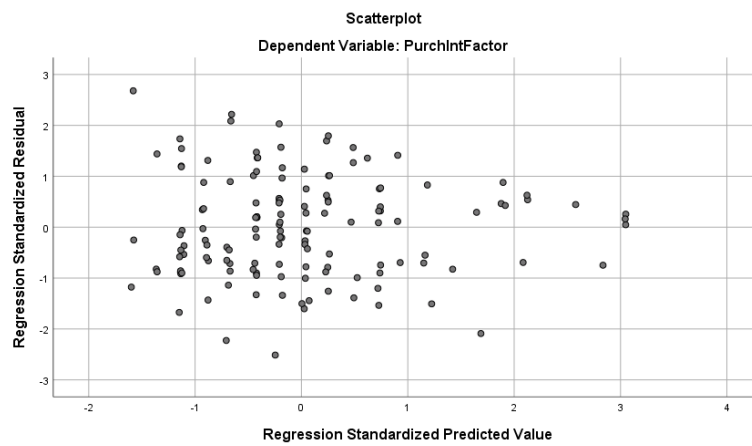
Regression analyses for mediating effect

Scatter plots testing homoscedasticity of the predictor perceived sustainability

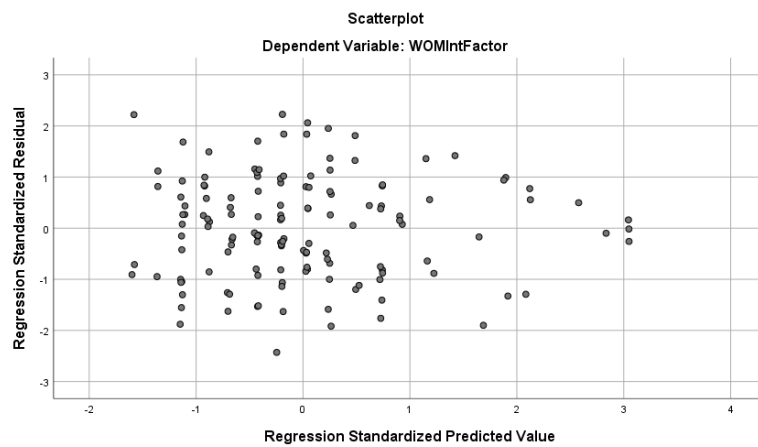
Dependent variable product evaluation



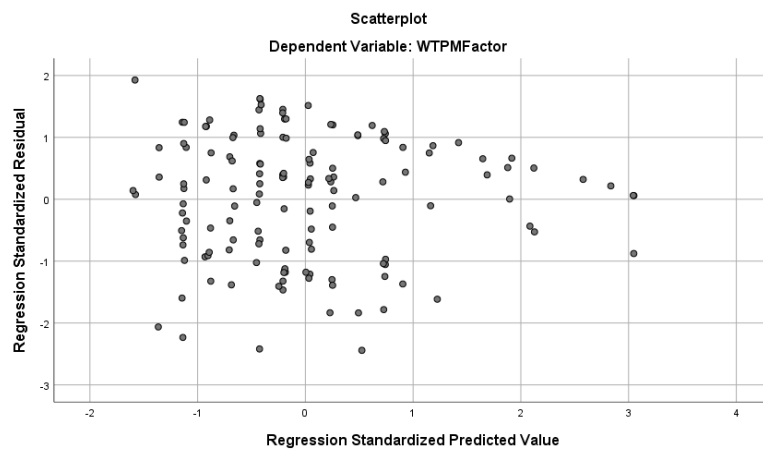
Dependent variable purchase intentions



Dependent variable word-of-mouth intentions

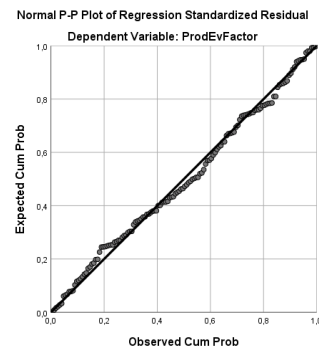
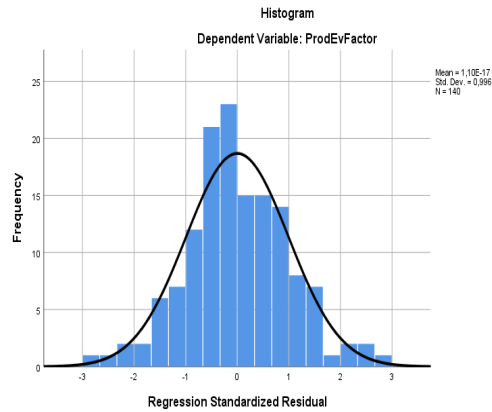


Dependent variable willingness to pay more

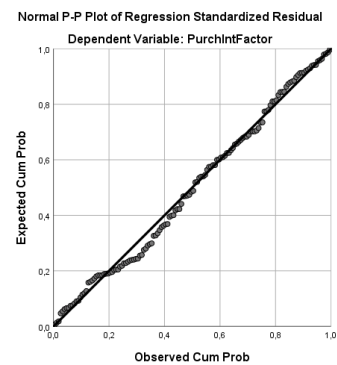
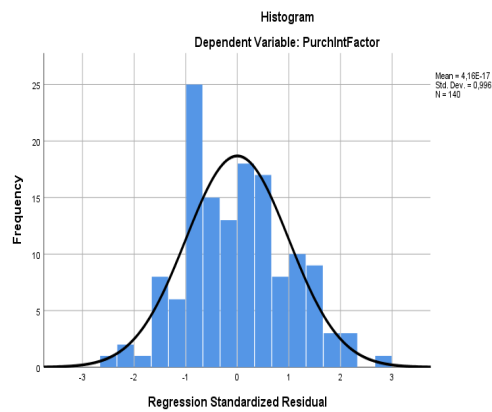


Histograms and P-P plots testing normally distributed errors and linearity

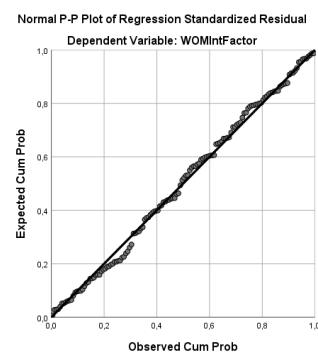
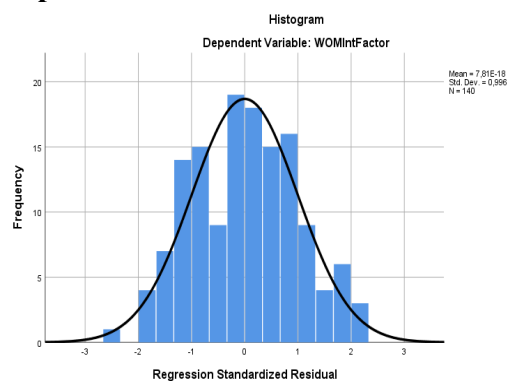
Dependent variable product evaluation



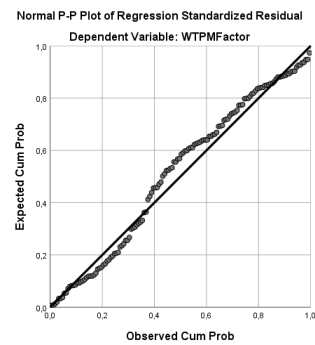
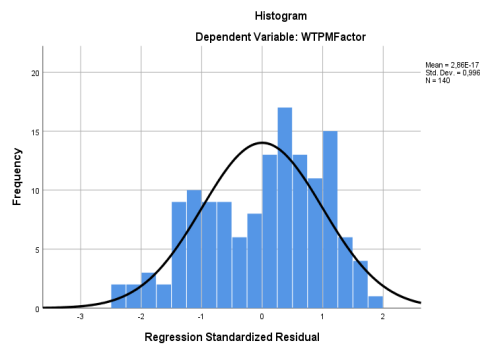
Dependent variable purchase intentions



Dependent variable word-of-mouth intentions



Dependent variable willingness to pay more



Model summary and coefficients including Durbin-Watson test for independent errors

Dependent variable product evaluation

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,340 ^a	,116	,109	,94375621	1,625

a. Predictors: (Constant), PerSustFactor

b. Dependent Variable: ProdEvFactor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16,087	1	16,087	18,061	,000 ^b
	Residual	122,913	138	,891		
	Total	139,000	139			

a. Dependent Variable: ProdEvFactor

b. Predictors: (Constant), PerSustFactor

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6,334E-17	,080		,000	1,000
	PerSustFactor	,340	,080	,340	4,250	,000

a. Dependent Variable: ProdEvFactor

Dependent variable purchase intentions

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,473 ^a	,223	,218	,88440357	1,454

a. Predictors: (Constant), PerSustFactor

b. Dependent Variable: PurchIntFactor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31,061	1	31,061	39,711	,000 ^b
	Residual	107,939	138	,782		
	Total	139,000	139			

a. Dependent Variable: PurchIntFactor

b. Predictors: (Constant), PerSustFactor

Coefficients^a

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-5,090E-17	,075		,000	1,000
	PerSustFactor	,473	,075	,473	6,302	,000

a. Dependent Variable: PurchIntFactor

Dependent variable word-of-mouth intentions

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,529 ^a	,280	,275	,85171418	1,792

a. Predictors: (Constant), PerSustFactor

b. Dependent Variable: WOMIntFactor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38,892	1	38,892	53,614	,000 ^b
	Residual	100,108	138	,725		
	Total	139,000	139			

a. Dependent Variable: WOMIntFactor

b. Predictors: (Constant), PerSustFactor

Coefficients^a

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2,930E-18	,072		,000	1,000
	PerSustFactor	,529	,072	,529	7,322	,000

a. Dependent Variable: WOMIntFactor

Dependent variable willingness to pay more

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,356 ^a	,126	,120	,93799766	1,778

a. Predictors: (Constant), PerSustFactor

b. Dependent Variable: WTPMFactor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17,582	1	17,582	19,983	,000 ^b
	Residual	121,418	138	,880		
	Total	139,000	139			

a. Dependent Variable: WTPMFactor

b. Predictors: (Constant), PerSustFactor

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2,323E-17	,079		,000	1,000
	PerSustFactor	,356	,080	,356	4,470	,000

a. Dependent Variable: WTPMFactor

Two-way ANCOVA for mediating effect

Levene's test

Levene's Test of Equality of Error Variances^a

Dependent Variable: PerSustFactor

F	df1	df2	Sig.
1,704	3	136	,169

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Q24 + Q25 + Q26 + Q29 + Q30 + Wave + Age + Simple + Dominant + Simple

* Dominant

Tests of between-subjects effects

Tests of Between-Subjects Effects

Dependent Variable: PerSustFactor

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	13,746 ^a	10	1,375	1,416	,180	,099
Intercept	,357	1	,357	,367	,545	,003
Q24	2,560	1	2,560	2,637	,107	,020
Q25	1,364	1	1,364	1,404	,238	,011
Q26	,119	1	,119	,123	,727	,001
Q29	,118	1	,118	,121	,728	,001
Q30	1,456	1	1,456	1,499	,223	,011
Wave	,275	1	,275	,283	,596	,002
Age	1,281	1	1,281	1,319	,253	,010
Simple	3,262	1	3,262	3,360	,069	,025
Dominant	,693	1	,693	,714	,400	,006
Simple * Dominant	1,303	1	1,303	1,342	,249	,010
Error	125,254	129	,971			
Total	139,000	140				
Corrected Total	139,000	139				

a. R Squared = ,099 (Adjusted R Squared = ,029)

Q24 = I think my personal consumer behavior makes a difference for the environment

Q25 = In general, I like chocolate

Q26 = How often do you buy chocolate? [daily - never]

Q29 = What is your gender?

Q30 = What is the highest level of education you have completed?

Multiple regression analyses for moderating effect personal norms

Dependent variable product evaluation

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,354 ^a	,125	,106	,94542540

a. Predictors: (Constant), PersonalModerator, PerSustFactor, PersNormsFactor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17,439	3	5,813	6,504	,000 ^b
	Residual	121,561	136	,894		
	Total	139,000	139			

a. Dependent Variable: ProdEvFactor

b. Predictors: (Constant), PersonalModerator, PerSustFactor, PersNormsFactor

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,001	,080		,008	,994		
	PerSustFactor	,343	,080	,343	4,280	,000	,999	1,001
	PersNormsFactor	-,091	,082	-,091	-1,114	,267	,962	1,040
	PersonalModerator	-,019	,064	-,024	-,298	,766	,963	1,039

a. Dependent Variable: ProdEvFactor

Dependent variable purchase intentions

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,553 ^a	,306	,291	,84212210

a. Predictors: (Constant), PersonalModerator, PerSustFactor, PersNormsFactor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42,553	3	14,184	20,001	,000 ^b
	Residual	96,447	136	,709		
	Total	139,000	139			

a. Dependent Variable: PurchIntFactor

b. Predictors: (Constant), PersonalModerator, PerSustFactor, PersNormsFactor

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,005	,071		,065	,948		
	PerSustFactor	,466	,071	,466	6,525	,000	,999	1,001
	PersNormsFactor	,259	,073	,259	3,560	,001	,962	1,040
	PersonalModerator	-,144	,057	-,184	-2,530	,013	,963	1,039

a. Dependent Variable: PurchIntFactor

Dependent variable word-of-mouth intentions**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,608 ^a	,370	,356	,80226942

a. Predictors: (Constant), PersonalModerator, PerSustFactor,

PersNormsFactor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51,465	3	17,155	26,653	,000 ^b
	Residual	87,535	136	,644		
	Total	139,000	139			

a. Dependent Variable: WOMIntFactor

b. Predictors: (Constant), PersonalModerator, PerSustFactor, PersNormsFactor

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,004	,068		,057	,955		
	PerSustFactor	,521	,068	,521	7,656	,000	,999	1,001
	PersNormsFactor	,290	,069	,290	4,182	,000	,962	1,040
	PersonalModerator	-,120	,054	-,153	-2,211	,029	,963	1,039

a. Dependent Variable: WOMIntFactor

Dependent variable willingness to pay more

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,541 ^a	,293	,278	,84996175

a. Predictors: (Constant), PersonalModerator, PerSustFactor, PersNormsFactor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40,749	3	13,583	18,802	,000 ^b
	Residual	98,251	136	,722		
	Total	139,000	139			

a. Dependent Variable: WTPMFactor

b. Predictors: (Constant), PersonalModerator, PerSustFactor, PersNormsFactor

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,004	,072		,053	,958		
	PerSustFactor	,344	,072	,344	4,771	,000	,999	1,001
	PersNormsFactor	,409	,074	,409	5,569	,000	,962	1,040
	PersonalModerator	-,120	,058	-,153	-2,080	,039	,963	1,039

a. Dependent Variable: WTPMFactor

Multiple regression analyses for moderating effect social norms

Dependent variable product evaluation

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,363 ^a	,132	,113	,94203817

a. Predictors: (Constant), SocialModerator, PerSustFactor, SocNormsFactor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18,309	3	6,103	6,877	,000 ^b
	Residual	120,691	136	,887		
	Total	139,000	139			

a. Dependent Variable: ProdEvFactor

b. Predictors: (Constant), SocialModerator, PerSustFactor, SocNormsFactor

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,004	,080		,049	,961		
	PerSustFactor	,348	,080	,348	4,338	,000	,991	1,009
	SocNormsFactor	,112	,080	,112	1,387	,168	,988	1,012
	SocialModerator	,046	,068	,054	,670	,504	,995	1,005

a. Dependent Variable: ProdEvFactor

Dependent variable purchase intentions

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,508 ^a	,258	,242	,87068591

a. Predictors: (Constant), SocialModerator, PerSustFactor, SocNormsFactor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35,899	3	11,966	15,785	,000 ^b
	Residual	103,101	136	,758		
	Total	139,000	139			

a. Dependent Variable: PurchIntFactor

b. Predictors: (Constant), SocialModerator, PerSustFactor, SocNormsFactor

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,007	,074		,097	,923		
	PerSustFactor	,455	,074	,455	6,140	,000	,991	1,009
	SocNormsFactor	-,166	,074	-,166	-2,230	,027	,988	1,012
	SocialModerator	,084	,063	,098	1,329	,186	,995	1,005

a. Dependent Variable: PurchIntFactor

Dependent variable word-of-mouth intentions

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,562 ^a	,316	,300	,83641011

a. Predictors: (Constant), SocialModerator, PerSustFactor,

SocNormsFactor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43,857	3	14,619	20,897	,000 ^b
	Residual	95,143	136	,700		
	Total	139,000	139			

a. Dependent Variable: WOMIntFactor

b. Predictors: (Constant), SocialModerator, PerSustFactor, SocNormsFactor

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,007	,071		,103	,918		
	PerSustFactor	,511	,071	,511	7,178	,000	,991	1,009
	SocNormsFactor	-,168	,071	-,168	-2,350	,020	,988	1,012
	SocialModerator	,085	,061	,100	1,405	,162	,995	1,005

a. Dependent Variable: WOMIntFactor

Dependent variable willingness to pay more

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,439 ^a	,192	,175	,90853533

a. Predictors: (Constant), SocialModerator, PerSustFactor, SocNormsFactor

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26,741	3	8,914	10,799	,000 ^b
	Residual	112,259	136	,825		
	Total	139,000	139			

a. Dependent Variable: WTPMFactor

b. Predictors: (Constant), SocialModerator, PerSustFactor, SocNormsFactor

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,009	,077		,111	,912		
	PerSustFactor	,332	,077	,332	4,285	,000	,991	1,009
	SocNormsFactor	-,237	,078	-,237	-3,055	,003	,988	1,012
	SocialModerator	,100	,066	,118	1,523	,130	,995	1,005

a. Dependent Variable: WTPMFactor

Descriptive statistics for item ‘When I buy chocolate, I make my choice based on:’

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
10. When I buy chocolate, I make my choice based on: (More than one answer possible) Taste	131	1	1	1,00	,000
10. When I buy chocolate, I make my choice based on: (More than one answer possible) Brand	67	1	1	1,00	,000
10. When I buy chocolate, I make my choice based on: (More than one answer possible) Price	91	1	1	1,00	,000
10. When I buy chocolate, I make my choice based on: (More than one answer possible) Healthiness	22	1	1	1,00	,000
10. When I buy chocolate, I make my choice based on: (More than one answer possible) Availability	32	1	1	1,00	,000
10. When I buy chocolate, I make my choice based on: (More than one answer possible) Design	24	1	1	1,00	,000
10. When I buy chocolate, I make my choice based on: (More than one answer possible) Sustainability	31	1	1	1,00	,000
Valid N (listwise)	0				

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