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# Addressing Femininity in Green Consumption

*An Experimental Study on How Degrees of Feminine Communication Affect Purchase Intention for Green Products*

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Master thesis, Business Analysis and Performance Management

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# Preface

This master thesis is one of a series of papers and reports published by the Center for Service Innovation (CSI). Center for Service Innovation (CSI) is a coordinated effort by NHH to focus on the innovation challenges facing the service sector and involves 15 business and academic partners. It aims to increase the quality, efficiency and commercial success of service innovations and to enhance the innovation capabilities of its business and academic partners. CSI is funded through a significant eight-year grant from the Research Council of Norway and has recently obtained status as a Centre for Research-based Innovation (SFI).

# Abstract

The purpose of this study is to investigate how different degrees of feminine communication can have an impact on purchase intention for green products and whether this can be mediated by perceived effectiveness. The thesis addresses femininity as a potential barrier for green consumption, and seeks to eliminate this barrier by using masculine communication to enhance a preference for green products. An artificial field experiment is conducted to gather primary data for the analysis. The study aims to explain how different degrees of feminine communication presented on a drain opener would impact the purchase intention towards a green product. The model seeks to explain whether this causal relationship is mediated by perceived effectiveness, and if this indirect relationship is moderated by gender. An indirect effect was found between highly masculine communication and feminine communication, through perceived effectiveness, affecting the purchase intention for the green product. The study did not succeed to manipulate the stimuli presented to being sufficiently different in perceived femininity, and cannot determine whether the findings exist as a result of different degrees of femininity.

**Keywords:** Green Products, Environmentally Friendly, Greenness, Feminine Communication, Masculine Communication, Effectiveness, Gender, Brand Gender, Green Product Attributes.

# Acknowledgement

This master thesis is written as a part of the requirements for the MSc in Economics and Business Administration Program at the Norwegian School of Economics (NHH). This thesis is written in the spring semester of 2019, and constitute 30 credits within our major in Business Analysis and Performance Management.

When searching for a research topic, our shared interest for sustainability brought us together. We both believe solving environmental issues is of great importance and believe that companies will have to change their ways to build a sustainable future. Contributing to research regarding green consumerism and marketing was therefore a perfect opportunity for us to explore solutions to these issues. It has been a great honor contributing to the Orkla and NHH research project and we both have learned a lot during this process. Writing this master's thesis has been exciting, challenging and very educational.

First, we would like to thank our supervisor, Lars Jacob Tynes Pedersen for the valuable support and advices during this process. His engagement and passion for sustainability has been of great inspiration to us. Secondly, we would like to thank Siv Skard, who has shared her knowledge for SPSS and helped us through some frustrating times. We would also like to thank Orkla for the opportunity to participate and contribute to this research project, and the Centre for Service Innovation (CSI) for funding this research project. Lastly, we would like to thank each other for a great partnership throughout this process.

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# 1. Introduction

## 1.1 Background

> "I want you to panic, I want you to feel the fear I feel every day. And then I want you to act, I want you to act as if you would in a crisis. I want you to act as if the house was on fire, because it is." (Thunberg, 2019)

This was the words of Greta Thunberg, a 16-year-old environmental activist, speaking to a room full of global leaders at the World Economic Forum in Davos, urging them to take action towards the ongoing environmental challenges before it is too late (Thunberg, 2019). She is not alone with her concerns for the environment. In 2015 the sustainable development goals (SDGs) were established and adopted by all United Nation member states to stimulate action towards 2030 in areas identified with critical importance for humans and the planet (Sustainable Development Goals, 2019).

"Ensure sustainable consumption and production patterns" (SDG 12) is one out of 17 Sustainable Development Goals. One of the targets related to the goal emphasizes the need for a substantial reduction of waste generation through reduction, recycling and reuse by 2030 (UnitedNations, 2018). One of the most critical and complex challenges faced by humanity today is the fact that economic growth depends on an increase in resource usage (UnitedNations, 2019). This increases the importance of shifting onto sustainable production and consumption by "doing more and better with less" (UnitedNations, 2019). Utilization of resources requires guidelines for a major change in social and physical infrastructure and markets. A transformation of current business practices in global value chains are therefore required by companies and manufacturers. This places further requirements on companies dealing with consumer goods (UnitedNations, 2019).

Sustainability is increasingly seen as a competitive advantage, and companies are forced to adapt and change their businesses accordingly (Nidumolu, Prahalad, & Rangaswami, 2009). To be able to get the necessary momentum and solve the sustainability problems of today, there is a great need of fundamental business model innovations (Jørgensen & Pedersen,

2018). Comprehensive changes need to be done to existing business models, and there is need of knowledge to support such changes (Jørgensen & Pedersen, 2018). Companies that early addresses and develop their competence in this field will have an important advantage in the coming years (Nidumolu et al., 2009). An increased focus is needed in all parts of the supply chain, from the producer to the final consumer. This will include raising awareness and educating consumers through creating standards and labeling products, making it accessible and beneficial for consumers to make sustainable choices (UnitedNations, 2019).

An increased engagement from green consumers is important for motivating the green industry (Peattie & Peattie, 2009). Despite of an increased focus on sustainable consumption, barriers to green consumption still exist (Gleim, Smith, Andrews, & Cronin Jr, 2013). There is also an indication of a value-action gap, where consumers claim to be concerned with the environment, but does not follow through with action (Sachdeva, Jordan, & Mazar, 2015).

Women tend to be more engaged with environmentally friendly products than men (Brough, Gal, Isaac, Ma, & Wilkie, 2016), and green products are shown to be associated with femininity (Huang & Wan, 2015). If this results in men avoiding purchasing green products, potentially half the population are excluded as green consumers. Further exploration of how to market and communicate green products is therefore an important matter towards reaching all consumers. The environmental challenges depend on a contribution from all people in order to reach the sustainable development goals, and preventing the crisis young Thunberg addresses.

Accordingly, this association between greenness and femininity indicates a barrier for green consumption that has to be addressed. Brough et al. (2016) suggest that more men may be willing to take pro-environmental choices if the feminine associations attached to green products and actions were altered. Hence, exploring different ways of communicating green products to reduce barriers for green consumption is important, in order to encourage a shift towards environmentally friendly consumption for all consumers.

## 1.2 Purpose

The purpose of this thesis is to explore how different *degrees of femininity in communication* of a product's green attributes influence consumers' perception and thus the purchase intention for such products. This insight into consumer behavior can further be used by companies and marketers to understand how communication of a product can increase the purchase intentions toward green consumption, and thus contribute to a shift towards more people choosing green products.

Previous research has revealed different barriers for purchasing environmentally friendly products. One of the main barriers is that consumers assume that the green product will not perform as well as a non-green product (Gleim et al., 2013), thus leading to a supposition that green products have a lower perceived effectiveness. Green behavior is often associated with femininity (Brough et al., 2016; Shang & Peloza, 2016), and there is a marketing tendency that green products aim towards women, which might affect the purchase patterns for consumers to differ across gender. This makes it interesting to explore whether a change in communication of a product's green attributes could lead to the perception of the product being perceived as less feminine, through directing the communication to utilize more masculine centered communication. Further, it is interesting to see whether this could affect purchase intention across gender and thus, promote a higher consume of green products. This leads to the proposed research question for our thesis:

*RQ:* Do different *degrees of feminine communication* of a green product affect the *purchase intention* towards the product, and is this mediated by the *perceived effectiveness* of the product.

## 1.3 Structure

To answer the research question, chapter 2 will present existing theory within the field, building up to the hypotheses of the study. This leads to the presentation of the proposed research model in chapter 3. The conceptual framework for the study will be presented in chapter 4, explaining the concepts and terminology used throughout the thesis. Further, the basis for developing the concept for different degrees of femininity in communication for green products will be introduced, as this is not an already established concept.

An artificial field experiment was conducted to collect primary data. The outlining of the experimental design for our main study will be described in chapter 5. A pretest investigating the assumptions derived from the theory will then be conducted, and the results arising from the pretest will be presented prior to the main study. The main survey and measures used to collect data, followed by the statistical analysis, is presented at the end of chapter 5. The results deriving from the statistical analyses will then be addressed in chapter 6.

For the final part of our thesis, a summary and discussion based on the results arising from the survey will be presented in chapter 7, followed by a general discussion. The study's limitations are addressed in chapter 8, as well as implications and suggestions for further research discovered through our research process. This adds up to the presentation of the final conclusion for our thesis.

# 2. Theory and Proposed Hypotheses

## Environmental Friendliness

The foundation of this research is green consumer behavior, and addresses barriers for purchasing environmentally friendly products. Research shows that the impact of green marketing plays an important part in increasing sustainable consumption and behavior (Peattie & Peattie, 2009). Green marketing can be described as "a strategic effort made by firms to provide customers with environment-friendly merchandise" (Lu, Bock, & Joseph, 2013, p. 3).

An increased engagement from green consumers does play an important part in motivating the green industry (Peattie & Peattie, 2009). Lu et al. (2013) designates green consumers as being the force behind the green industry. Banerjee et al (1995) defines a *green consumer* as an individual who adopts attitudes and behaviors that minimize adverse effects on the environment (Banerjee, Gulas, & Iyer, 1995). The consumers' concern for the environment is what drives their values, lifestyle, and further the consumption of green products (Lu et al., 2013). Prototypical behavior of a green consumer includes actions such as buying organic products, purchase appliances with energy star labelling and taking shorter showers (Sachdeva et al., 2015, p. 60). A green product is defined as a product produced with concern for the physical environment (Shrum, McCarty, & Lowrey, 1995). The descriptive features that characterizes a product, both green and non-green, are called attributes (Keller, 1993, p. 4). These attributes can be described as both product-related and non-product-related. Product-related attributes includes the physical composition, such as the ingredients necessary to function. Non-product-related attributes are the external aspects such as price information, packaging or product appearance, user imagery and usage imagery (Keller, 1993, p. 4).

## Brand Personality

Brand personality is a construct in consumer behavior and is defined as "the set of human characteristics associated with a brand" (Aaker, 1997, p. 347). Customers tend to anthropomorphize their products, which means giving objects characteristics that are humanlike (Epley, Waytz, & Cacioppo, 2007). In relation to this, the personality traits of the

consumers of a brand, can be transferred to the brand itself (McCracken (1989) as cited in Aaker, 1997). This causes the appearance of a brand or a product to being of great importance for the interpretation of the product by the consumer. Brand design elements are important factors to this interpretation, and include names, signs and symbols that identify the brand as well as differentiate it from other brands (Walsh, Page Winterich, & Mittal, 2010; Batra *et al.*, 1993 as cited in Lieven, Grohmann, Herrmann, Landwehr, & Van Tilburg, 2015). Our possessions can even be seen as an extension of ourselves (Belk, 1988), which might cause consumers tending toward products that are in line with their own identity. It is therefore important for marketers to pay attention and be familiar with their customers, by adapting their marketing accordingly to further stimulate the consumer's purchase intention. Purchase intention is defined as a consumer's tendency to buying or take an action in relation to a purchase (Handayani, 2017, p. 27).

## Brand Gender and Marketing

A brand's personality can also include demographic characteristics such as gender (Levy, (1959) as cited in Aaker, 1997, p. 348), leading to that one brand may be perceived as more feminine or masculine than another brand. Brand gender is defined as "the set of human personality traits associated with masculinity and femininity applicable and relevant to brands" (Grohmann, 2009, p. 106). Accordingly, brand preferences are driven by congruence between a brand's masculinity or femininity and the consumer's gender (Lieven et al., 2015). Brand gender is both theoretically and managerially important because it influences consumers attitude and purchase intention in relation to the brand (Grohmann, 2009).

Several studies explore the effect manipulating the physical brand design elements, such as shape, color and materials of a product, has on the consumer's perceived femininity and masculinity of a brand (Brough et al., 2016; Lieven, Grohmann, Herrmann, Landwehr, & Van Tilburg, 2014; Tilburg, Lieven, Herrmann, & Townsend, 2015). However, studies exploring linguistic manipulations are scarce; Manipulation of the underlying meanings and perceptions on linguistic appearance in communication of a product's attributes, is not a heavily researched topic. Neither how this can affect whether a brand or a specific product will be perceived as more or less feminine or masculine. This presents a gap in the literature.

Marketing of green products today has a tendency to aim towards women, and often target product areas such as cleaning, family health, laundry and domestic maintenance where woman often are more involved than men (Brough et al., 2016, p. 568). By manipulating communication of the attributes on a green product towards a more linguistically masculine version, we aim is to investigate whether this will influence consumers' purchase intention for green products. Based on the theoretical framework presented, we suggest that communicating a green products attributes as more masculine will increase consumers' purchase intention, and present the following theoretical proposition:

> *Consumers have a higher purchase intention for a green product when the green attributes are communicated through masculine communication than when the green attributes are communicated through feminine communication.*

To investigate the theoretical proposition, we divide it into a set of hypotheses based on the different stimuli the respondents will be presented to during the field experiment. Since masculine communication is not a set concept within green marketing, it can vary in degree of masculinity of the message communicated. Therefore, two different degrees of masculinity are included, adding nuances to the comparison of conditions. The first set of hypotheses is hereby presented:

> $H_{1a}$: *Consumers have a higher purchase intention for the green product with highly masculine communication than for the green product with feminine communication*

> $H_{1b}$: *Consumers have a higher purchase intention for the green product with moderately masculine communication than for the green product with feminine communication*

> $H_{1c}$: *Consumers have a higher purchase intention for the green product with highly masculine communication than for the green product with moderately masculine communication*

## Barriers of Green Consumption

Despite the fact that many consumers generally hold a positive attitude towards green products, only a fraction actually purchase such products (Joshi & Rahman, 2015). Research identifies several barriers to consumption of green products (Gabler, Butler, & Adams, 2013; Gleim et al., 2013). Gleim et al. (2013) examined factors associated with non-green purchasing behavior and identified eight main barriers to green consumption: Price, quality, expertise, trust, availability, apathy, brand loyalty and a miscellaneous category. Quality is a central barrier, indicating that green products are inferior to non-green products (Gleim et al., 2013). This is the most mentioned barrier besides the largely researched barrier price (Gleim et al., 2013; Narula & Desore, 2016). Research indicates that when a product is communicated as sustainable, it is often perceived as less strong than a non-green product (Luchs, Naylor, Irwin, & Raghunathan, 2010), thus leading it to being perceived as less effective compared to a non-green product. Newman, Gorlin, & Dhar (2014) discovered in their study that purchase intention is higher if the green attributes of a product are added unintentionally by the company, instead of when the attributes are added intentionally (Lu et al., 2013; Newman et al., 2014). This could mean that consumers do not trust that the green product possesses the same amount of quality as the non-green product, when the green attribute is empathized as intended by the producers. This can also be a reason for the consumers' assumption that perceived quality is reduced in green products compared to non-green products (Gleim et al., 2013). Several studies also confirm that consumers often associate ethicality in products with gentleness-related attributes and therefore perceive those products as being weak or implying that it would not "get the job done" (Luchs et al., 2010, pp. 19-20), indicating a lack of effectiveness.

To investigate whether the different degrees of feminine communication on a green product affects perceived effectiveness and further, the consumers' purchase intention for the product. We therefore include *perceived effectiveness* as a mediator in our research model and present the following set of hypotheses:

$H_{2a}$: *The effect postulated in* $H_{1a}$ *is mediated by perceived effectiveness.*

$H_{2b}$: *The effect postulated in* $H_{1b}$ *is mediated by perceived effectiveness.*

$H_{2c}$: *The effect postulated in* $H_{1c}$ *is mediated by perceived effectiveness.*

Effectiveness as an attribute of a product can have a varying degree of importance, and we found it interesting to investigate whether differences can be found across gender. Findings from Brough et al. (2016) identifies masculine branding as a managerially relevant barrier which suggests that men may be more willing to take pro-environmental choices if the feminine associations attached to environmentally friendly products and actions were altered (Brough et al., 2016). Based on this reasoning, one could assume that men's willingness to buy a green product would increase if the product is perceived as less feminine. It is accordingly interesting to see whether our model can reveal some gender differences on purchase intention through perceived effectiveness. Hence, *gender* is included as a moderator to our research model, and a third set of hypotheses is presented:

$H_{3a}$: *The effect postulated in* $H_{2a}$ *is moderated by gender*

$H_{3b}$: *The effect postulated in* $H_{2b}$ *is moderated by gender.*

$H_{3c}$: *The effect postulated in* $H_{2c}$ *is moderated by gender.*

To answer the hypotheses, an artificial field experiment was carried out, where the respondents of the study were exposed to different degrees of feminine communication on a green product stimulus. Further information regarding the conceptual framework will be described in chapter 4; Conceptual Framework, after presenting the research model of this thesis.

# 3. Proposed Reseach Model

Based on the hypotheses described, we present the moderated mediation model for our thesis (Hayes, 2018), seeking to explain the relationship between the *different degrees of feminine communication* and *purchase intention* for a green product. We predict that the different degrees of femininity in communication will affect the *purchase intention* for a green product differently, and that *perceived effectiveness* have an impact on this relationship. We predict that when the association between greenness and femininity is weakened, through higher degree of masculine communication, this will affect the perception of effectiveness for a green product, and thus lead to a higher *purchase intention* for a green product. We therefore propose *perceived effectiveness* as the mediator of the model. Accordingly, we believe that this relationship is conditioned by *gender,* revealing differences in *perceived effectiveness* across male and female respondents. Therefore, we propose *gender* as the moderator in the model. The proposed research model is illustrated in Figure 3.1.

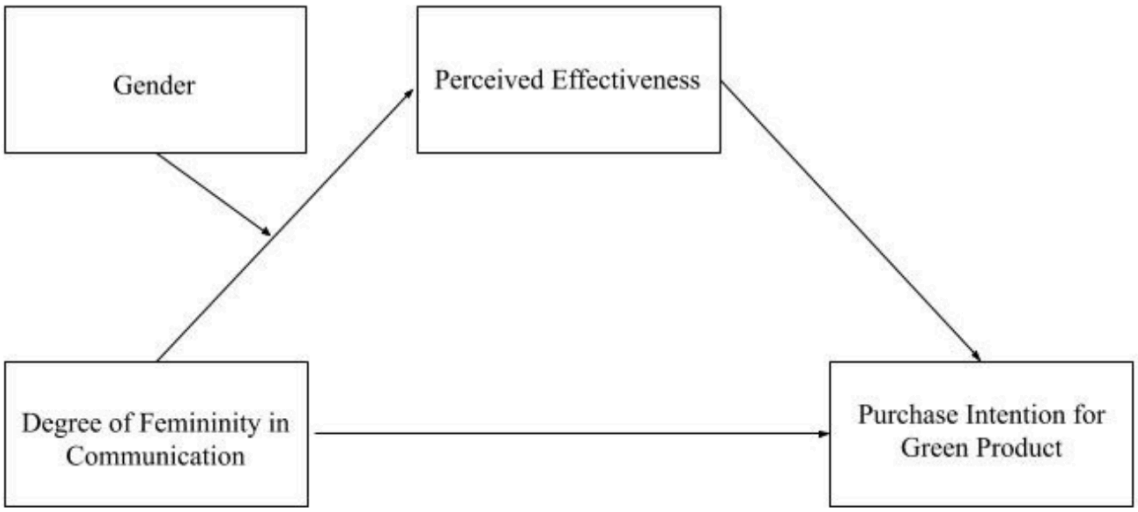



*Figure 3.1: Model of Moderated Mediation*

A moderated mediation model is a mediation model which includes a moderation on the indirect effect (X on Y through M). The indirect effect of X is conditional on W through moderation of X → M and effected by W (Hayes, 2018). The statistical model (Figure 3.2) explains the relationships of the model through several distinct pathways. The *c'* pathway represents the direct effect of X on Y, and the conditional indirect effect of X on Y through

1M is $(a_{1i} + a_{3i}W)b_i$. Together this adds up to the total effect of the model, $c$. A statistical diagram of the proposed moderating mediation model is presented below.

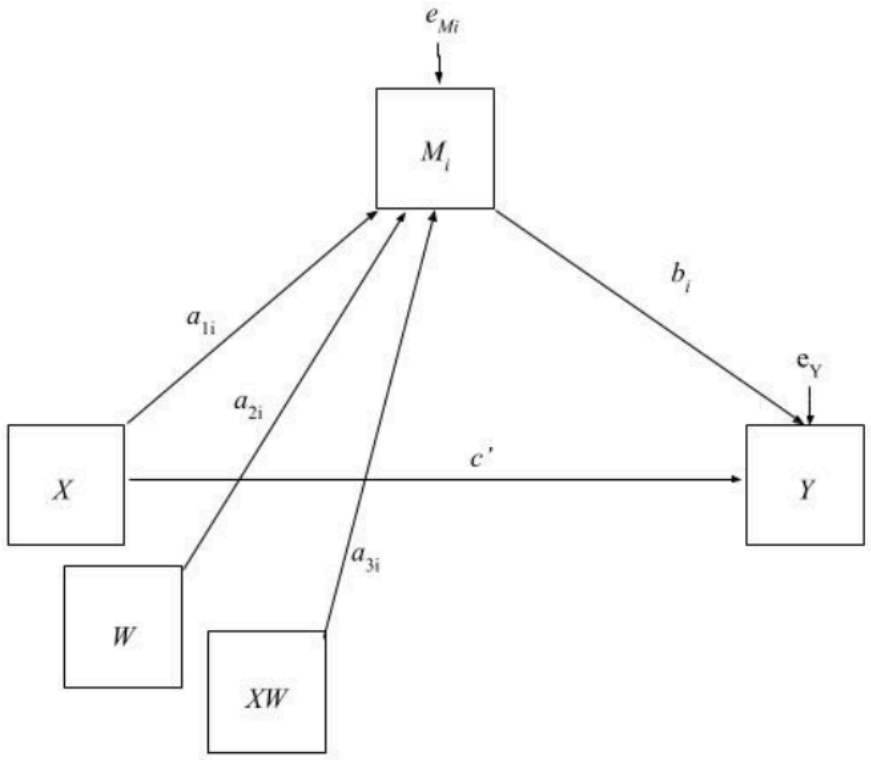



*Figure 3.2: Statistical Diagram of Model for Moderated Mediation (Hayes, 2018)*

Hence, we want to discover whether there exists a causal relationship between the independent variable on the purchase intention, and further whether this relationship can be explained through the perceived degree of effectiveness of the independent variable condition. Through the moderated mediation model, we test whether there are significant gender differences on the perceived effectiveness of the manipulations on the indirect relationship.

# 4. Conseptual Framework

In this chapter the conceptual framework and underlying terminology used throughout the thesis will be presented. The main concepts build on previous master theses (Bjorvatn & Bjarnadottir, 2018; Handeland & Skogholt, 2018; Jerndahl & Næss, 2018) written within the research collaboration between Orkla and Centre of Innovation (CSI) at Norwegian School of Economics (NHH) named "Circular Economy and Green Consumer Behavior". First, we will present the different concepts; *green product attributes*, *strong product category and choice of product* for manipulation. Secondly, as there is no existing framework for different *degrees of feminine communication*, we will briefly explore this field and present the basis for developing the concept; Degrees of Feminine Communication of Green Products.

## 4.1 Green Product Attributes

The focus on green products as well as communication of their environmentally friendly attributes are central in the previous master theses written within the project and will further be the basis for this study. While Bjorvatn & Bjarnadottir (2018) compared products with 100% natural ingredients and 100% recycled materials, Jerndahl & Næss (2018) chose to continue with only the *green product-related attribute* and investigate differences when communicating this green attribute implicitly and explicitly. For this study, we will further look into how the green attributes can be perceived differently when containing different *degrees of feminine communication.* The green attributes communicated will be extended to include both material of packaging and product content. Consequently, this thesis will investigate the communication of both product-related and non-product-related green attributes resulting in a "complete" green product. To describe the green attributes of a product we will use the terms "environmental friendliness" and "greenness" of a product interchangeably throughout the thesis, due to both being terms used in prior research in this field (Bjorvatn & Bjarnadottir, 2018; Brough et al., 2016; Gleim et al., 2013; Jerndahl & Næss, 2018).

## 4.2 Strong Product Category and Drain Opener

Products can be described as holding “strong” or “gentle” attributes (Luchs et al., 2010). Handeland & Skogholt (2018) and Bjorvatn & Bjarnadottir (2018) introduced and investigated both the strong and gentle product category of products in their studies, where a body lotion was used to represent the gentle product category and a drain opener for the strong product category. Several studies argue that green attributes are valued more within a gentle product, than within a strong product (Bjorvatn & Bjarnadottir, 2018; Luchs et al., 2010). For further investigation of whether different degrees of feminine communication can change the customers perception of a green product, we found it most interesting to investigate how a change in feminine communication will affect a product that holds “strong” characteristics. Effectiveness is a key attribute of a drain opener, and we predict that manipulating the product with more masculine communication will have a greater effect within this product category. A drain opener is also already established as a product within the strong product category in the prior thesis, and will therefore represent the product for manipulation in this thesis.

## 4.3 Degree of Feminine Communication of Green Products

To gain insight into how masculine centered communication can make a difference in the customers’ purchase intention for a green product, a new framework of concepts was needed. The development of this concept builds on previous studies, mainly researched by Brough et al. (2016). The aim is to develop a set of informational cues that can distinguish the communication of the green attributes to being perceived as more masculine than the communication used in marketing of green products today. A closer look into words that might characterizes masculine perception was needed and we seek to apply this to be the communication of green products in our study.

### 4.3.1 Theory of Green Masculine Communication

A study done by Brough et al. (2016) investigated green consumption related to gender differences in environmental concerns and found a change in perception when manipulating

the linguistic meaning behind the textual information, in addition to a change in the design. A logo was made in two versions; one communicating “wilderness”, and one communicating “nature”. “Wilderness” was made to refer to a more masculine version appealing to stereotypical male traits (Brough et al., 2016; Zuckerman & Kuhlman, 2000). The respondents in the study reported that the masculine-branded design made them feel more masculine than the conventionally branded design (Brough et al., 2016, p. 577). A similar study investigated how customers perceived different ads for a car (Brough et al., 2016). The respondents were assigned to one of two ads showing either a car named “2015 BMW i3 Eco-Friendly Model” or a “2015 BMW i3 Protection model”. The results indicated that the masculine centered branding that referred to the word “Protection” instead of “Eco-friendly” significantly increased men's preference for the green car (Brough et al., 2016, p. 578). This substantiate that the words building on male centered communication and masculinity was favorably desired.

In addition to the literature findings on masculine words and male perceptions in marketing, existing products aiming at men such as *Nivea*, *Gillette, Asan* and *L'oreal* typically uses expressions and synonyms for *strength* and numeric references in the exploitation of their products. There is also found a tendency that these products’ labels contain descriptions of the technology used in the products. Terms such as *action*, *technology, new formula* was common when investigating these products (Nivea, 2019).

This theory gives ground to developing the stimuli used in the experiment towards making them perceived as more masculine. Based on this section, we will in the next section present the outcome through a set of informational cues.

## 4.4 Development of Concepts

This section describes the process behind the development of the concept describing different *degrees of feminine communication* of green attributes. Building on theory presented, the informational cues containing different degrees of feminine communication will be presented. The informational cues will include a tagline and three statements adding up to the textual communication that is presented on the label of the manipulated products. A simple illustration is presented in Table B.2 (Appendix B). All informational cues are

presented in Norwegian and are therefore translated, therefore some variations in interpreting the words from Norwegian to English could arise. The following two sections will present the different degrees of communication as respectively *feminine communication* and *masculine communication.* The informational cues presented are further tested for perceived femininity in a pretest presented in section 5.2 to be able to substantiate these assumptions. All cues including the Norwegian translation are presented in Appendix B.

### 4.4.1 Feminine Communication of Green Products

The feminine informational cues are all based on information existing on green products in the Norwegian homecare market. The following statements are therefore developed to mimic informational cues existing today. The feminine statements mainly derives from textual information presented on products from the Rema Koin AS product series "Organic Circle" and the Lilleborg AS product series "Klar" (Klar, 2019; Kolonial.no, 2019). The feminine informational cues presented are directly translated to "Natural consideration", "Consideration for nature", "Carefully chosen ingredients" and "Reused material".

### 4.4.2 Masculine Communication of Green Products

The masculine informational cues are all based on linguistic manipulation of the existing feminine informational cues presented in section 4.4.1, and the theory of green masculine communication discussed in section 4.3.1. The statements are translated from Norwegian and do not necessarily contain the exact same meaning when translated due to the words' connotations being different when translated. In the process of developing the masculine informational cues there was of great importance to change them into being perceived as less feminine in a way that preserve the equal communication of the green attributes. This is therefore carefully considered when developing the informational cues, although it is not possible to remove all possible interpretations. The masculine informational cues are "Protecting nature", "Green rawness", "Protecting nature", "New technological formula" and "Recycled material".

# 5. Experimental Design

This chapter describes the research design and methods used to answer the research question of our study. First, the experimental design and setting of our study will be presented. Then, the pretest is laid out, resulting in a presentation of the study's chosen stimuli, where the manipulations the respondents were exposed to are presented. The survey and measures used to collect the data in the main study are then laid out, including the sampling- and recruitment procedure and a description of the execution of the experiment.

## 5.1 Research Design

To answer the research question, an artificial field experiment was conducted in which the respondents were exposed to the study's manipulation. Research shows that respondents tend to give better answers when exposed to visual and physical product material (Klatzky, Lederman, & Reed, 1987). The respondents were set to answer a survey regarding their interpretation on these manipulations. In an artificial field experiment, the respondents were exposed to a manipulation in an artificial, non-realistic context (Harrison & List, 2004). Field experiments are often more generalizable to a population than laboratory experiments, as they are more closely linked to real life surroundings as opposed to a lab where the artificial environments can have an impact on the study's external validity (Saunders, Lewis, & Thornhill, 2016). However, the field setting might represent an enlarged threat to the internal validity, given that the researchers cannot control for all external influence on the respondents (Saunders et al., 2016). In addition to rating the manipulated products, a practical test was included where the respondents were asked to pour an estimated amount from the manipulated product provided. This can contribute to make the setting seem less artificial and was done knowing that one of the disadvantages with artificial experiments is that they are less realistic than natural field experiments.

Our study can be defined as a mixed-model design, with a combination of between-subject and within-subject factors (Kherad-Pajouh & Renaud, 2015). There are both advantages and disadvantages using mixed model design. The main advantage of these types of designs is that fewer subjects are required, which makes an efficient use of the subjects, and is known

for having more statistical power i.e. due to less error variance (Kherad-Pajouh & Renaud, 2015). The main disadvantage of these types of designs is that the models are more complex than non-repeated measure designs, as there may exist associations between observations obtained from the same respondent that need to be taken into account (Kherad-Pajouh & Renaud, 2015). The study contains three between-subject factors, where the respondents are presented to only one of three stimuli. The independent between-subject variable is the *degree of femininity* in communication of the product and consists of three levels: feminine, highly masculine and moderately masculine. The study's within-subjects factor differs in level of greenness of the product, and is represented by two categories: product with green attributes and a non-green baseline. Our design is thus a 2x3 factorial design, and the between- and within-subject factors are illustrated in matrix form in Table 5.1.

| | | **Between subjects:** Degree of femininity | | |
|---|---|---|---|---|
| **Within subjects:** Degree of greenness | **Green Product** | Feminine communication | Highly masculine communication | Moderately masculine communication |
| | **Non-Green Product** | Baseline | Baseline | Baseline |

*Table 5.1: Table of Between - and Within Subjects Factors*

## 5.2 Pretest

Since there is lack of existing research addressing gender centered communication in marketing of green products, the purpose of the pretest was to support the informational cues developed in the conceptual framework. This was done to see whether the statements match our assumptions regarding their degree of perceived femininity, and to identify if the informational cues developed were distinctly different from each other, substantiating that they were applicable as stimuli for the main survey.

Based on the proposed literature, we will differ between three degrees of feminine communication: *feminine communication, highly masculine communication* and *moderately*

*masculine communication.* We expect significant differences within the different degrees of feminine communication and predict that *feminine communication > moderately masculine communication > highly masculine communication* on the scale of perceived femininity. All informational cues are presented along with a Norwegian translation in Appendix B.

### 5.2.1 Pretest Method

The survey used in the pretest was distributed through the personal networks of the researchers to reach out to a varying group of respondents, adding up to a sample consisting of 40 people. A convenience sample was used since the survey is only a pretest for our main study. The main focus of the pretest was to explore whether the informational cues were in line with our assumptions, and would change how the respondents perceived the green products in regard to femininity. The pretest survey was conducted in Norwegian to make sure that the respondents interpreted the information correctly. The following statements are therefore translated into English. The interpretation of the different translations may therefore vary. The questionnaire for the pretest is presented in full in Appendix A.

A three-minute-long online survey was conducted using the software Qualtrics. The respondents were asked to imagine a context where purchasing a drain opener and were asked to rate a set of statements presented on a 10-point Likert scale, from “very feminine” to “very masculine”. The questions were built on a questionnaire developed by Lieven et al. (2015). The 10-point scale was used to identify the marginal differences in how the informational cues were rated in regards of femininity, which was central to distinguish between the different degrees of perceived masculinity and femininity (Saunders et al., 2016, p. 458).

### 5.2.2 Results from the Pretest

The data from the pretest contained 14 men (35 %) and 25 women (62.5 %) and one who did not answer (2.5%). Analyzing and interpreting the data collected, we sought to find a significant difference between the perceived femininity of the different informational cues to find variations in degrees of femininity.

We used one-way ANOVA to compare the means of the informational cues. First, the mean differences of perceived femininity/masculinity between the taglines were tested, which will be the "headlines" of the product labels. Then the mean differences were compared for all informational cues, which are represented by the tagline and three statements regarding the green attributes of the products. The results when comparing the taglines and informational cues for *the feminine communication, highly masculine communication* and *moderately masculine communication will* are presented below.

## Taglines

A one-way ANOVA was conducted to test the set of taglines for mean differences, looking at the differences in *perceived femininity* between *feminine communication* (*M* = 2.80, *SD* = 1.22), *highly masculine communication* (*M* = 7.18, *SD* = 1.58) and *moderately masculine communication* (*M* = 5.03, *SD* = 1.74). The scores were statistically significantly different between the taglines at the 95% level, F (2, 117) = 81., p < .001. The mean differences are presented in Table 5.2.

| | Std. error | 95% CI | t-statistic | DF | Sig. level | Mean difference |
|---|---|---|---|---|---|---|
| Feminine - Highly Masculine | 0.316 | 3.745, 5,005 | 13.833 | 78 | p < 0.001 | 4.375** |
| Feminine - Moderately Masculine | 0.335 | 1.556, 2.894 | 6.621 | 78 | p < 0.001 | 2.225** |
| Highly Masculine - Moderately Masculine | 0.372 | -2.890, -1.410 | -5.782 | 78 | p < 0.001 | -2.150** |

Significant at 0.05 level*
Significant at 0,01 level **

Table 5.2: *Table of Mean Differences: Taglines*

The results presented in the table discover significant differences between all three taglines within degree of perceived femininity at the 99% level in the assumed direction.

## Informational Cues

A one-way ANOVA was conducted to test the set of informational cues for mean differences, looking at the differences in *perceived femininity* between *feminine communication (M* = 14.64, *SD* = 3.25), *highly masculine communication* (*M* = 24.69, *SD* = 4.23) and *moderately masculine communication* (*M* = 22.49, *SD* = 4.52). The femininity score was statistically significantly different between the groups at the 95% level, F (2, 114)

= 66.818, p < .001. The mean differences between the informational cues are presented in Table 5.3. Deriving from the table, the informational cues are significantly different from each at the 95% level in the assumed direction.

| | Std. er | 95% CI | t-statistic | DF | Sig. level | Mean difference |
|---|---|---|---|---|---|---|
| Feminine - Highly Masculine | 0.854 | 8.350, 11.753 | 11.767 | 76 | p < 0.001 | 10.051** |
| Feminine - Moderately Masculine | 0.891 | 6.072, 9.621 | 8.805 | 76 | p < 0.001 | 7.846** |
| Highly Masculine - Moderately Masculine | 0.991 | -4.179, -.231 | -2.225 | 76 | p = 0.029 | -2.205* |

Significant at 0.05 level*
Significant at 0,01 level **

Table 5.3: *Table of Mean Differences: Informational Cues*

Based on these results, the assumptions regarding differences in perceived femininity between the informational cues were confirmed, and further used to develop the stimuli for our main study. The three green products will therefore respectively be referred to as; *feminine communication, highly masculine communication* and *moderately masculine communication.*

*Feminine communication* includes the informational cues perceived as most feminine. *Highly masculine communication* includes of the informational cues perceived as most masculine. *Moderately masculine communication* includes informational cues that was perceived as less masculine than the masculine informational cues but less feminine than the feminine informational cues. All three products with the presented informational cues are presented more thoroughly in 5.3.2 Visualization of Products.

## 5.3 Stimuli

Based on the results deriving from the pretest, the informational cues make the basis for the stimuli presented in this section. These were made to represent different degrees of femininity in the communication of a products' green attributes, and were developed to be the manipulated products given to the respondents. The three mock-up products used in the artificial field experiment will be described and visualized in the following section.

### 5.3.1 Products

A mock-up of a product series called SERA was used as the stimuli given to the respondents. SERA is a made-up brand developed in prior master theses within the research project "Circular Economy and Green Consumer Behavior". The products were neutrally designed to represent a standard drain opener, to prevent influencing the participants in favoring any existing brand based on inherent associations. The product's standard design includes a picture of a drain, the product title "drain opener" and the text "opens clogged pipes" to add credibility to the products. The survey introduction included information about the products being in development and therefore could be perceived as unfinished.

In addition to the described standard product design, the green products were manipulated with a tagline and three statements describing the products' green attributes (Illustrated in Appendix B). There were in total three different green products manipulated with different informational cues, all presenting the product as an environmentally friendly option. The cues on the different manipulations are indented to be equal in regard to informational value but will differ in word usage and interpretation regarding femininity to create a difference in how the product is perceived. All information on the product is presented in Norwegian, as this was considered to be most responsive for the Norwegian participants of the study. The informational used are therefore hereby translated to English. All three products are presented in the following section, and a list including the Norwegian translation is presented in Appendix B.

#### *Non-Green Product: Baseline*

The baseline of our study present a non-green standard SERA drain opener with no added informational cues, and is used as a reference component as a part of the within-subject design, when comparing the between-subject manipulated green products. Illustration follows in section 5.3.2, Illustration 5.1.

#### *Green Product with Feminine Communication*

The first green product was created to represent a typical environmentally friendly product. The informational cues include a tagline, "naturlig omtanke" which can be translated to "natural consideration". The three statements, "omtanke for naturen", "nøye utvalgte

ingredienser" and "gjenbrukt materiale" can be translated to "care for the nature", "carefully chosen ingredients and "reused materials". All information that is presented exists on products in the Norwegian home-care market, and was through the pretest scored by the respondents as words with feminine associations. Illustration follows in section 5.3.2, Illustration 5.2.

### *Green Product with Highly Masculine Communication*

The second green product was modified to present informational cues focusing on masculine associations. The informational cues include a tagline, "grønn råskap" and three statements, "beskytter naturen", "ny teknologisk formel" and "resirkulert materiale". This can be translated to "green wildness", "protect the nature" "new technological formula" and "recycled materials". The statements were pretested and scored as the least feminine associated statements when compared in the pretest. Illustration follows in section 5.3.2, Illustration 5.3.

### *Green Product with Moderately Masculine Communication*

The third green product is also modified to present informational cues focusing on masculine associations. The product includes the same masculine statements as the product with *highly masculine communication* but with a different tagline. The tagline "beskytter naturen" can be translated to "protect the nature". The informational cues were scored as less masculine than for the product with *highly masculine communication* and more masculine than the product with *feminine communication*. The green product with *moderately masculine communication* was included to add nuances to the experiment and be able to distinguish possible arising differences. Illustration follows in section 5.3.2, Illustration 5.4.

## 5.3.2 Visualisation of Products

The manipulated products and labels used in the study are illustrated below:


*Illustration 5.1: Baseline: The Non-Green Product*


*Illustration 5.2: The Green Product with Feminine Communication*


*Illustration 5.3: The Green Product with Highly Masculine Communication*


*Illustration 5.4: The Green Product with Moderately Masculine Communication*

| | **Tagline** | **Statement** | **Statement** (product related attribute) | **Statement** (non-product related attribute) |
|---|---|---|---|---|
| **Feminine Communication** | Natural consideration | Consideration for nature | Carefully chosen ingredients | Reused material |
| **Highly Masculine Communication** | Green rawness | Protecting nature | New technological formula | Recycled material |
| **Moderately Masculine Communication** | Protecting nature | Protecting nature | New technological formula | Recycled material |

*Table 5.4: Table of Translations of Informational Cues presented on Products*

### 5.3.3 Treatments

For the artificial field experiment, the manipulated products were presented for the respondents to evaluate. Each respondent was presented to three boxes and randomly assigned to open one of them. Each box contained a non-green baseline product and one out of the three manipulated green products. The product combinations for the respective boxes are presented below:

Box A contained the *feminine green product* and a *non-green baseline product*. A visualization of the product combination in box A is presented in illustration 5.5:


*Illustration 5.5: Visualization of Box A with Feminine Communication*

Box B contained *the highly masculine green product* and the *non-green baseline product*. A visualization of the product combination is presented in illustration 5.6:


*Illustration 5.6: Visualization of Box B with Highly Masculine Communication*

Box C contained the *moderately masculine product* and the *non-green baseline* product. A visualization of the product combination in box C is presented in illustration 5.7:

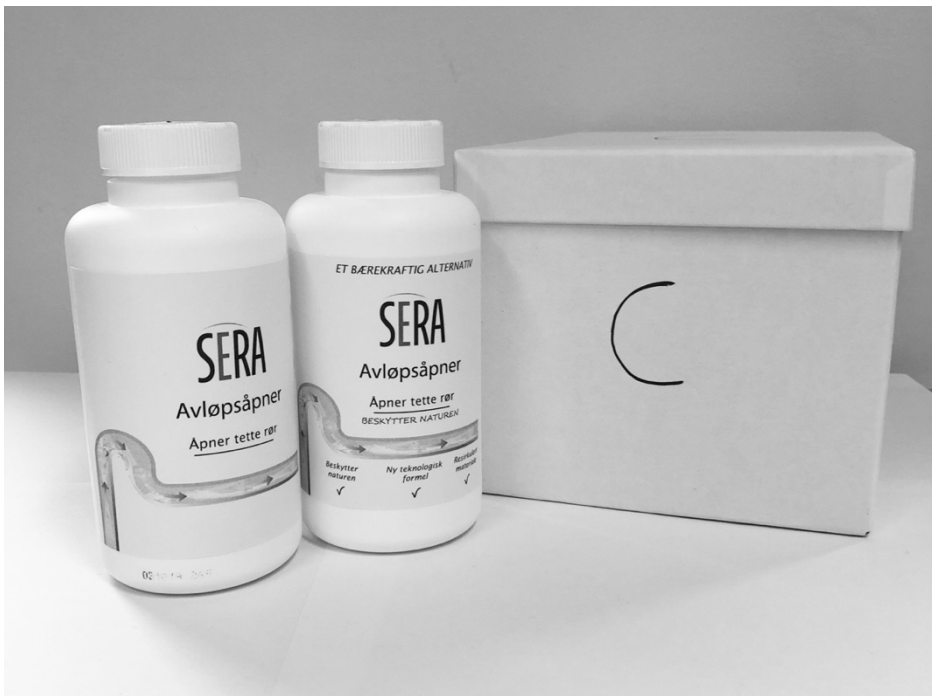



*Illustration 5.7: Visualization of Box C with Moderately Masculine Communication*

## 5.4 Survey and Measures

The stimuli presented was evaluated by the respondents using a questionnaire developed in the software Qualtrics. The questionnaire duration was approximately ten minutes and consisted of 33 question. The survey was conducted in Norwegian due to it being the respondents' native language. Hence, the following descriptions and measures are hereby translated. The questionnaire is presented in full in Appendix D.

The questions were designed to gain information on the respondents' opinions regarding the manipulated products presented. The respondents were asked to rate the *purchase intention, perceived femininity* and *perceived effectiveness* of the product, as well as how *environmentally friendly* the product appeared. General questions were included, addressing the attitudes and opinions of the respondents regarding their commitment for the environment, and the importance of different factors when choosing a drain opener. These questions were included as control variables. In addition, questions regarding the respondent's demographics was included to gain insight into the composition of the sample.

The questions in the questionnaire were reported using a Likert Scale. This method is well suited as it allows the opinions and perspectives of the respondents to be presented in a quantitative form, which can be processed statistically (Beech, 2015, p. 101). The design of the survey originates from previous questionnaires developed within this research project, in line with the studies of Bjorvatn & Bjarnadottir (2018) and Jerndahl & Næss (2018). The questionnaire is altered with some variations to make it better suit the study's research question, as well as some adjustments in the construction of the questions. The advantage of building on the existing questions and well-established measures is to increase the internal validity of the study (Saunders et al., 2016). To avoid major errors in the study, a pilot survey was carried out prior to launching the survey, strengthening the internal validity of the study (Saunders et al., 2016). Questions with ambiguous communication were then adjusted to prevent incorrect interpretations of the questions.

On the first page of the survey the respondent was presented with information regarding the structure of the survey. All respondents were assured their answers would be completely anonymous, and treated confidentially. After reading the introduction, the respondents were

asked to confirm voluntary participation in the study before they were randomly assigned to one of the three boxes; A, B or C. After confirming the assigned box, the respondents were provided with information on how to interpret the products, as well as how to carry out the survey. The text emphasized to only open the assigned box, as well as closely study the products and have them present during the completion of the survey. The respondents were asked to imagine purchasing the products presented. The randomization function in Qualtrics was used to randomly assign the respondents to their respective box. This was done to control for and reduce the possible effects of a planned intervention and further eliminate threats to internal validity (Saunders et al., 2016).

The first part of the questionnaire was included in order to get an understanding of the purchase intention for the respective products assigned to the respondents. As *purchase intention* is the dependent variable of the study, this question was asked in the beginning to prevent respondents modifying their answers with the latter questions. The respondents were asked how likely they were to purchase the respective drain openers presented, on a scale from "very unlikely" to "very likely". This question derives from research from Newman et al. (2014). The respondents were also asked to choose their preferred product which is anchored from Luchs et al. (2010) research, with an absolute choice between the non-green baseline and the green product. As this question gives less statistical freedom, it will not be used as a main construct. A free text question was also included where the respondents were asked to specify the reason for their choice.

The second part of the questionnaire addresses how the respondents perceived the *environmental friendliness* of the products, as this is a central topic within the study. The respondents were asked to what extent they perceived the products as environmentally friendly. The respondents answered this question for both products presented; "to what extent do you believe that the product is an environmentally friendly product". The question was based on the studies of Gershoff & Frels (2015) and the respondents answered on a 7-point Likert scale from "to a very small extent" to "to a very large extent".

Further, the respondents were asked to rate the *perceived femininity* of the products to substantiate whether the respondents actually perceived the different stimuli as representing different degrees of femininity. The respondents were asked how feminine the products were perceived on a 7-point Likert scale from "not feminine at all" to "very feminine". The

question is derived from a study developed by Lieven et al. (2015), but modified to a non-bipolar scale.

To investigate the mediating effect on how the respondents perceived the effectiveness of the products, a question on *perceived effectiveness* was included. The question is based on the framework developed by Newman et al. (2014).The respondents were asked how effective they perceived the products as well as how they would rate the products' ability to unclog clogged pipes". The effectiveness was rated on a scale from "very ineffective" to "very effective". As many people also see it important that a drain opener is gentle to your pipes, a question for gentleness was conducted on the same basis as for perceived effectiveness.

To control for variables that might disturb our results, several control variables were included. The questions were answered on a 7-point Likert scale from "to a very little extent" to "to a very large extent" and included a series of claims. The claims mainly focused on the respondents' personal environmentally consciousness and criteria considered in a purchasing decision of a drain opener. Among these were claims such as "I see myself as an environmentally conscious person" and "I am willing to sacrifice quality for environmental friendliness". To understand what the respondents defined as important aspects when purchasing a drain opener, the respondents were asked to rate the importance of different qualities such as "price", "gentleness", "recommendation by others" and "effectiveness of a drain opener". These questions were in line with previous research within this project Jerndahl & Næss (2018) and the respondents answered on a 7 - point Likert scale from "to a very little extent" to "to a very large extent".

It is important to understand the sample and assess whether the data is representative for the population (Saunders et al., 2016, p. 445). Therefore, a section of demographics was included to get an understanding of the obtained sample's composition. These questions included gender, age, education and occupation, as well as a question regarding perceived gender identity on a 7-point Likert scale from "very feminine" to "very masculine".

For the last part of the survey a practical test was included to get a practical measure on the perceived effectiveness of the manipulated product. The respondents were instructed to pour the amount they believed was needed to open a completely clogged drain of their assigned green drain opener, into a measuring cup. The variable was named *estimated amount.* The

respondents were asked to register the amount on a measuring scale from 0 to 500 ml. The purpose of this practical test was to discover the true amount the respondents found necessary, to see whether the respondents subconsciously perceived the product's effectiveness differently than stated in the effectiveness question. To prevent any bias, the respondents were told that this already had been tested in a laboratory, and that there was a correct amount to be guessed. An incentive of winning a cinema gift card was added for one respondent that managed to guess the correct amount. The procedure derives from research done by Lin & Chang (2012). The complete overview of the measures is shown in the table below.

| Construct | Measures* | Based on |
|---|---|---|
| Purchase Intention | *How likely is it that you would choose each of the different drain openers in a purchase situation?* | Newman et al., (2014) |
| Perceived Environmently Friendliness | *To what extent do you believe that the products are environmentally friendly?* | Gershoff & Frels (2015) |
| Perceived Femininity | *To what extent do you perceive these products as feminine?* | Lieven et al.,(2014)(2015) |
| Perceived Effectiveness | *To what extent do you perceive this products as effective?* | Newman et al., (2014) |
| Perceived Gentleness | *To what extent do you perceive this products as gentle?* | Newman et al., (2014) |
| **Control variables** | | |
| Environmentally conscious | *To what extent do you perceive yourself as being a environmentally conscious person?* | |
| Importance | *To what extent do you agree that it is important that the products you purhcase is environmentally friendly?* | |
| Guilt | *To what extent do you agree that you would feel guilty i you chose the least environmentally friendly alternative?* | |
| Recycle | *To what extent do you agree that you recycle as often as possible?* | |
| Quality | *To what extent do you agree that an environmentally friendly products has lower quality than a non-environmentally friendly product?* | |
| Sacrifice | *To what extent do you agree that you are willing to sacrifice quality for environmentally friendliness?* | |
| Importance of Price | *To what extent is price important to you when buying a drain opener?* | |
| Importance of Effectiveness | *To what extent is effectiveness important to you when buying a drain opener?* | |
| Importance of Recommendation | *To what extent is recommendations from others important to you when buying a drain opener?* | |
| Importance of Environmentally firendliness | *To what extent is environmentally friendliness important to you when buying a drain opener?* | |
| Importance of Damage on pipes | *To what extent is little damage on pipes important to you when buying a drain opener?* | |

* The measures are rephrased to better fit the presentation of the table. Some measures are translated from Norwegian to English.

*Table 5.5: Overview of Constructs and Measures*

### 5.4.1 Sampling and Recruitment

As this study seeks to explore Norwegian consumers, this will accordingly be the relevant population. The experiment was conducted at a shopping mall in Bergen, Norway. This was done to get a sample representative for the average population, which we argue a shopping mall would provide. The sample consisted of 280 respondents, all completing the whole survey with no non-response errors for the main constructs. There were 113 men (40 %) and 167 women (60 %) completing the survey, and the respondents were quite evenly distributed in age from 13 to 80 years old ($M$ = 39.40 years). The respondents varied in both occupation, educational level and income and we argue the sample provide a good representative of the population. The complete list of respondent demographics is represented in full in Table 5.6.

| Demographics | | | | | |
|---|---|---|---|---|---|
| | Participants | Percentage | | Participants | Percentage |
| **N participants** | 280 | 100 % | **Occupation** | | |
| | | | Student | 47 | 16,8 % |
| **Gender** | | | Employed | 185 | 66,1 % |
| Female | 167 | 59,6 % | Unemployed | 21 | 7,5 % |
| Male | 113 | 40,4 % | Retiree | 27 | 9,6 % |
| Total | 280 | 100,0 % | Total | 280 | 100,0 % |
| **Highest Level of Education** | | | **Income** | | |
| Secondary School | 30 | 10,7 % | Less than 250.000NOK | 74 | 26,4 % |
| High School | 108 | 38,6 % | Between 250.000 and 500.000NOK | 77 | 27,5 % |
| Bachelor`s degree | 86 | 30,7 % | Between 500.000 and 750.000NOK | 95 | 33,9 % |
| Master`s degree | 49 | 17,5 % | Between 750.000 and 1.000.000NOK | 26 | 9,3 % |
| Doctor`s degree | 7 | 2,5 % | More than 1.000.000NOK | 8 | 2,9 % |
| Total | 280 | 100,0 % | Total | 280 | 100,0 % |

*Table 5.6: Demographics*

### 5.4.2 Procedure

The artificial field experiment was conducted over three days, Thursday 21st of March, Friday 22nd and Saturday 23rd of March, at Åsane Storsenter in Bergen, Norway. Since this master thesis builds on prior theses within a research project, the infrastructure had already been tested and was therefore easily transferable to this project. This provided us with a well-established and consistent framework to help us carry out the study.

The experiment was conducted next to one of the main entrances at the shopping mall. Five stalls were set up in which the respondents could participate in the study. The survey was conducted on varying days of the week and at different hours of the days. This was done to ensure the respondents represented a varied selection of age, gender and life situation, to give a fair representation of the average population, aiming to strengthen the study's external validity. The stalls were placed with sufficient space in between, to make sure all respondents were separated. Each stall was installed with three boxes with the letters A, B and C. The stalls were also installed with laptops to complete the survey in addition to a measuring cup for the experiment's practical test.

In the experiment area, a roll-up with the logo of Norwegian School of Economics and printed posters with the text "Help us with our master thesis, receive a gift card" was set up. This was done to add credibility to our study, as well as to attract potential respondents. All people passing the stand were asked to participate to the survey, and thus had the same probability of being chosen, strengthening the external validity of the study. After consenting

to participate in the study, each respondent got a short run-through with information on how to complete the survey. The importance of only opening the assigned box was emphasized, in addition to the importance of reading all information provided. The respondents were encouraged to contact us for any questions or technical problems occurring during the experiment. After completing the survey, each respondent received a gift card of 75 NOK as a gift for completing the survey.

## 5.5 Statistical Analysis

In this chapter, the analyses used to answer our hypotheses will be presented. First, a one-way ANOVA is conducted to test the direct effect on our hypotheses. Then, a simple mediation model is presented to test the second set of hypotheses, followed by a moderated mediation analysis to test our last set of hypotheses. Control variables used in the study is thereafter presented. At the end of this chapter, a test of assumptions for the characteristics of the data collected is presented, assessing possible violations that could lead to changes in the conclusion of the research or interpretation of the results.

### 5.5.1 Direct Effects

To test our first set of hypotheses, $H_{1a}$, $H_{1b}$ and $H_{1c}$, a one-way ANOVA was conducted. This test is used to determine whether there are any statistically significant differences between the means of two or more independent groups (LaerdStatistics, 2017). The test was conducted to determine if *purchase intention* for a green product varies when the green attributes were communicated through different degrees of *feminine communication, highly masculine communication* and *moderately masculine communication*. The result of this test determines whether there is a significant difference in the mean score across the three groups (Pallant, 2013). A post-hoc test will be conducted, using Least Significant Difference (LSD) to pairwise compare the groups for mean differences in the ANOVA. Although Tukey HSD (Honestly Significant Difference) is recognized as a stricter post-hoc test, we have chosen to use LSD post-hoc test throughout the analyses based on the connection to the mediation model presented.

### 5.5.2 Simple Mediation Analysis

For our second set of hypotheses, $H_{2a}$, $H_{2b}$ and $H_{2c}$ a simple mediation model was done to investigate how the causal variable X influences Y indirectly, rather than the direct causal relationship between X and Y (Hayes, 2018). The mediation model seeks to explain the relationship between an independent variable (X) and a dependent variable (Y) through a third variable, known as the mediating variable of the model (M). The SPSS macro, PROCESS by (Hayes, 2018), was used to carry out this analysis. To investigate the direct, indirect and total effect for X on Y through M, Model 4 in the PROCESS macro was used. The macro uses bootstrapping to test if these effects exists, and the indirect effect of the model is significant when the bootstrap interval does not include zero (Hayes, 2018). We want to investigate if some of the effect on purchase intention (the dependent variable) from the degree of femininity in the communication of a green product (the independent variable) can be explained through the perceived effectiveness of the product (the mediator). There are two pathways the independent variable X can influence the dependent variable Y; directly, or indirectly through a mediator M. In our model we tested how *purchase intention* (Y) was affected by the variation of different types of stimuli, *feminine communication, highly masculine communication* or *moderate masculine communication* (X), and how *perceived effectiveness* (M) mediated these relationships.

### 5.5.3 Moderated Mediation Analysis

To test our third set of hypotheses we wanted to investigate whether the degree of femininity in communication of a green product has an impact on purchase intention through perceived effectiveness, and whether this relation is moderated by gender. To test the hypotheses $H_{3a}$, $H_{3b}$ and $H_{3c}$, a moderated mediation model was conducted (Hayes, 2018). This test was conducted by using Model 7 in the PROCESS macro for SPSS. Model 7 in PROCESS tests the conditional direct and indirect effects of the independent variable on the dependent variable. The test further provides a moderated mediation index that tests the moderation of the indirect effect (Hayes, 2018). The macro uses bootstrapping confidence intervals to test whether the effect (presented in the simple mediation model) is moderated by gender. The moderation on the indirect effect is statistically significant when the bootstrap interval does not include zero (Hayes, 2018). Since this thesis addresses differences in perceived femininity, we want to address and explore any gender differences between the different

degrees of femininity in communication and perceived effectiveness. As addressed earlier in the thesis, research shows that men and women have different attitudes towards environmental issues and green consumerism. It is therefore interesting to explore these differences, and further look into what the effect gender might present in the model.

### 5.5.4 Control Variables

A set of control variables in the analysis was included, and kept constant to avoid them influencing the relationship between the independent and the dependent variable (Saunders et al., 2016). A Spearman's correlation analysis was conducted to measure the strength and direction in the linear relationship between each control variable and the dependent variable, strengthening internal validity of the study (LaerdStatistics, 2018; Saunders et al., 2016). The value $r_s$ indicates the correlation coefficient which can be any value between +1 and -1, where +1 indicates a perfect positive correlation and -1 indicates a perfect negative correlation, while 0 represent no correlation between the variables (LaerdStatistics, 2018; Saunders et al., 2016). The control variables were based on the respondent's perceptions of themselves related to environmental issues, as well as their rated importance of different drain opener attributes. The control variables are presented in Table 5.5.

### 5.5.5 Test of Assumptions

For the following analyses, we are going to use several statistical tests including a paired t-test as well as an analyses of variances (ANOVA). These tests have some general assumptions that must be present in order to trust the analyses (Pallant, 2013, p. 213), and will be discussed in the following section.

#### Level of Measurement

The parametric approaches assume that the dependent variable is measured using a continuous scale. The dependent variable presented in our research model is "Purchase intention for buying a green product", and was answered using a 7-point Likert scale, which is a discrete scale. Previous research publications, such as Lieven et al. (2015), show that it is possible to use variables on ordinal levels. The assumption regarding level of measurement is thereby argued to be met.

## Independence of Observation

To fulfill the requirements of independence of observation, all respondents must be independent of each other, thus not be influenced by any other respondent (Pallant, 2013, p. 213). To ensure independence of observation, we made sure that there was no relationship of interaction between the respondents during the survey (LaerdStatistics, 2017). When collecting the data, each stall where the respondents were placed, had sufficient space in between to prevent interaction among the responders. When collecting the data, it was also emphasized to each respondent not to open any of the other boxes than the one randomly assigned to them. The data collected is therefore argued to be independent of observation.

## Normal Distribution

To measure the assumption of normal distribution, we tested kurtosis and skewness for each of the independent variable categories on the dependent variable *purchase intention.* The skewness variable indicates how the symmetry of the distribution lies, and the kurtosis gives an indication on how peaked the distribution is (Pallant, 2013, p. 59). If the value is 0 it means the distribution is perfectly normal. Positive values of kurtosis indicate a peaked distribution, clustered in the center, while negative kurtosis values indicate a rather flat distribution (Pallant, 2013, p. 59). The data is assumed to be approximately normally distributed when the skewness and the kurtosis lies within -2 and +2 (Khan, 2015). There are no violations of this criteria on the variables, and it can therefore be argued that the assumption of normal distribution is met. The full table containing skewness and kurtosis of the variables is presented in Table E.1 (Appendix E).

## Homogeneity of Variance

This assumption has to be met in order to ensure that the population variance for each group of the independent variable is the same (LaerdStatistics, 2017). The sample sizes of each independent variable category are approximately equal to each other, for box A ($n$ = 96), box B ($n$ = 94) and box C ($n$ = 90). To calculate the homogeneity of variance, Levene's test of equality of variances is conducted while doing a one-way ANOVA. The tests are presented in Table F.1 (Appendix F), and shows that the Levene’s score for all the variables is greater than .05, indicating that it is not significant. One can therefore argue that the assumption of homogeneity of variance is met (Pallant, 2013, pp. 214-215).

# 6. Results

In this chapter the results from this study´s analyses will be presented. First, we will look into the descriptive statistics to get an overview of information emerging from the data set. The main constructs will be analyzed both between- and within subjects to build ground for the main analyses. The constructs that will be addressed are; *greenness, femininity, effectiveness, gentleness* and *purchase intention.* These main results will then be presented to answer the hypotheses of the study. We address the direct effects through a one-way ANOVA, followed by the indirect effects from the mediation analysis and the conditional effects from the moderated mediation analysis. Finally, an analysis of control variables is presented, followed by the additional findings emerging from the dataset.

## 6.1 Descriptive Statistics

Through the descriptive statistics the main constructs will be presented; *perceived greenness, perceived femininity, perceived effectiveness* and *perceived gentleness* of the product, followed by briefly addressing the *purchase intention* and *choice of product* variables. The results are gathered through our experimental survey, and presents a foundation for further statistical tests. First, a t-test comparing the manipulated green product relative to the non-green baseline was conducted. Then, a one-way ANOVA was done to compare the green products across the boxes. To combine both factors, a two-way repeated measures ANOVA was done to visually present the within- and between-factor connections (Figures 6.1-6.4). All descriptive statistics are presented in Table E.1 (Appendix E).

### Perceived Greenness of the Product

This project seeks to understand the differences in how environmentally perceived products can be manipulated to be appealing to a greater part of the population. Therefore, it was important to get an understanding of to what extent the products were *perceived as environmentally friendly.* To investigate the difference in perceived environmental friendliness of the products, a paired t-test was conducted to look at the differences within each box, to investigate if the green product actually was perceived as more environmentally

friendly than the non-green product. Box A with *feminine communication*: Respondents rated the *non-green baseline* (*M* = 2.41, *SD* = 1.26) lower on environmental friendliness than the *green product* (*M* = 5.03, *SD* = 1.50), a statistically significant mean decrease of -2.625, 95% CI [-3.047, -2.203], *t*(95) = -12.343, *p* < .001, *d* = -1.26. Box B, with *masculine communication*: Respondents rated the *non-green baseline* (*M* =2.53 , *SD* = 1.57) lower on environmental friendliness than the *green product* (*M* = 4.70, *SD* = 1.70), a statistically significant mean decrease of -2.170 , 95% CI [-2.639, -1.701], *t*(93) = -9.192, *p* < .001, *d* = -0.95. Box C with *moderately masculine communication*: Respondents rated the *non-green baseline* (*M* = 2.50, *SD* = 1.40) lower on environmental friendliness than the *green product* (*M* = 4.94, *SD* = 1.49), a statistically significant mean decrease of -2.444 , 95% CI [-2.926, -1.963], *t*(89) = -10.089, *p* < .001, *d* = -1.06. As expected the results showed a statistically significant difference in each of the three boxes, stating that all three *green products* were perceived as more environmentally friendly than the *non-green baseline* product.

By conducting a one-way ANOVA with a post-hoc test, the differences in *perceived environmental friendliness* between the green products of the groups; *feminine communication* (*M* = 5.03*, SD* = 1.50), *highly masculine communication* (*M* = 4.70, *SD* = 1.70) and *moderately masculine communication* (*M* = 4.94, *SD* = 1.49) are investigated. There were no significant differences between the green products, F(2,277) = .202, p = .817. LSD post-hoc analysis shows that there were no statistically significant pairwise group differences. The results show that all the three green products are seen as more environmentally friendly than the non-green baseline product. There is no significant difference between the different green products. The differences in *perceived greenness* between the green products relative to the baseline are illustrated in Figure 6.1:

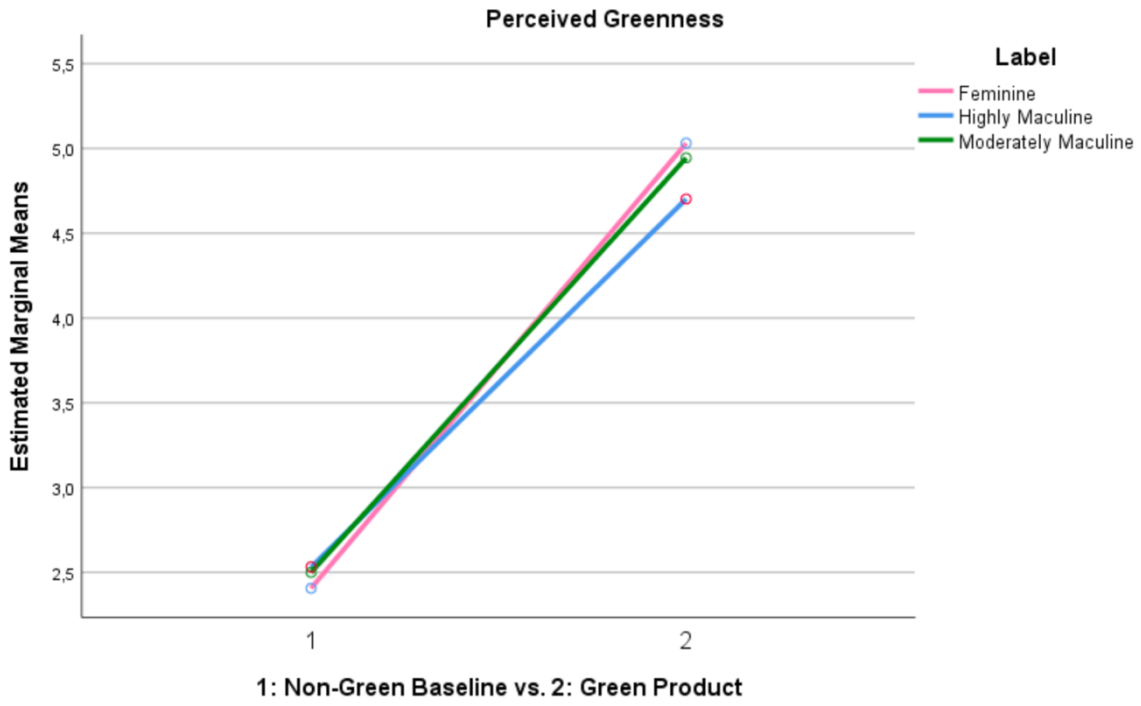



*Figure 6.1: Perceived Greenness*

## Perceived Femininity of the Product

As addressed in the literature review, environmentally friendly products are often perceived as being more feminine than non-environmentally friendly products (Brough et al., 2016; Huang & Wan, 2015). A central concern when developing the different stimuli was that the different manipulated green products were perceived as distinctly different in terms of perceived femininity.

A one-way ANOVA with an LSD post-hoc test was done to investigate the difference between the manipulated products. The differences between the green manipulated products in relation to *perceived femininity* between the green products of the groups *feminine communication* ($M$ = 2.58, $SD$ = 1.53), *highly masculine communication* ($M$ = 2.37, $SD$ = 1.41) and *moderately masculine communication* ($M$ = 2.39, $SD$ = 1.54), revealed no statistically significant differences between the groups, $F(2, 277) = .586$, $p = .557$. An LSD post-hoc analysis was done as a follow up and shows no statistically significant pairwise group differences (Table E.2, Appendix E).

The lack of significant difference in perceived femininity between the different manipulations conflict with the original assumptions. The pretest discovered that the *highly*

*masculine* and *moderately masculine* informational cues were perceived as significantly more masculine than the feminine statements. However, there is no significant difference between the green products (containing the same informational cues) for the main study. When looking into the mean differences, the mean score for the product with *feminine communication* is rated higher than the product with *highly masculine communication* and *moderately masculine communication*. We will throughout the thesis continue to use the green product names; *feminine communication*, *highly masculine communication* and *moderately masculine communication,* as descriptions for the manipulations. However, we emphasize that there are no significant results dividing the green products in perceived femininity and, thus, any potential findings cannot be explained by a difference in degree of feminine communication. The differences in *perceived femininity* between the green products relative to the baseline are illustrated in Figure 6.2:

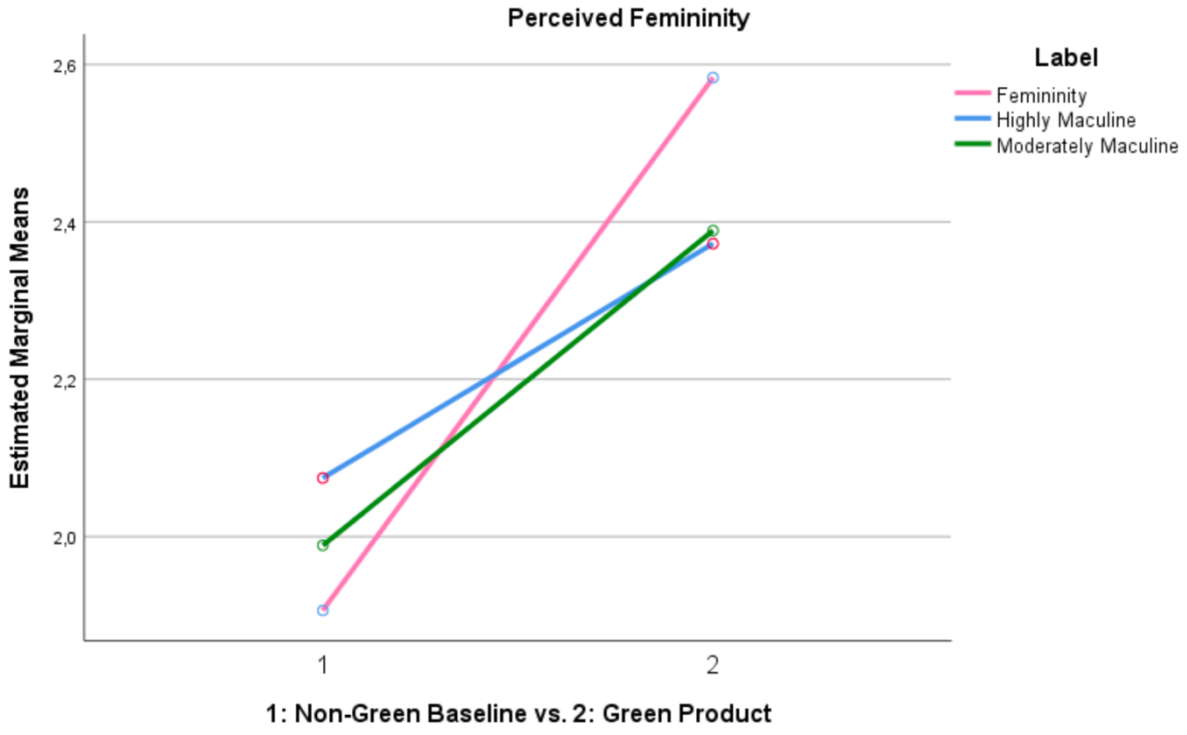



*Figure 6.2: Perceived Femininity*

## Perceived Effectiveness of the Product

Effectiveness is seen as an important factor when purchasing a "strong" product such as a drain opener. One of the main barriers to green consumption discovered in the theory presented was the assumption that environmentally friendly products does not hold the same quality as non-environmentally friendly products (Brough et al., 2016; Luchs et al., 2010).

Further we want to investigate whether a change in degree of feminine communication will have an impact on the perceived effectiveness of the product.

By doing a one-way ANOVA with a post-hoc test, the study addresses the differences in *perceived effectiveness* between the green products of the groups *feminine communication* (*M* = 4.32*, SD* = 1.36), *highly masculine communication* (*M* = 4.76, *SD* = 1.34) and *moderately masculine communication* (*M* = 4.43, *SD* = 1.29), there are no significant differences between the groups at the 95% level, F(2, 277) = 2.692, p = .069. LSD post-hoc analysis shows that there was a statistically significant mean difference at the .05 level between the *feminine communication* and *highly masculine communication* (*MD* = -.432, p = .03). This states that the respondents rate the *perceived effectiveness* of the *feminine communication* 0.432 units lower than when presented with *highly masculine communication* (Table E.2, Appendix E).

A paired t-test was done to investigate if the green products within the different boxes were perceived as more or less *effective* than the non-green products. Box A with *feminine communication*: Respondents rated the *non-green baseline* (*M* = 4.31, *SD* = 1.61) lower on *perceived effectiveness* than the *green product* (*M* = 4.32, *SD* = 1.36), a mean decrease of -0.010, 95% CI [-.351, .331], *t*(95) = -.061, *p* = .952, *d* = -.01 which means this is not statistically significant. Box B with *highly masculine communication*: Respondents rated the *non-green baseline* (*M* =4.14 , *SD* = 1.62) lower on *perceived effectiveness* than the *green product* (*M* = 4.76, *SD* = 1.34), a statistically significant mean decrease of -.617, 95% CI [-.971, -.263], *t*(93) = -3.459, *p* = .001, *d* = -0.36. Box C, with *moderately masculine communication*: Respondents rated the *non-green baseline* (*M* = 4.03, *SD* = 1.35) lower on *perceived effectiveness* than the *green product* (*M* = 4.43, *SD* = 1.29), a statistically significant mean decrease of -.400, 95% CI [-.693, -.107], *t*(89) = -2.717, *p* = .008, *d* = -0.29.

From these results, no statistically significant difference was found between the green and non-green product in perceived effectiveness when presented to the green product with *feminine communication*. However, for the *moderately masculine* and *highly masculine* communication, significant differences in perceived effectiveness were found between the green and non-green product, but in the opposite direction of the predictions. This is inconsistent with the literature, where green products often are perceived as being less

effective than non-green products (Gleim et al., 2013). The differences in *perceived effectiveness* between the green products relative to the baseline are illustrated in Figure 6.3:

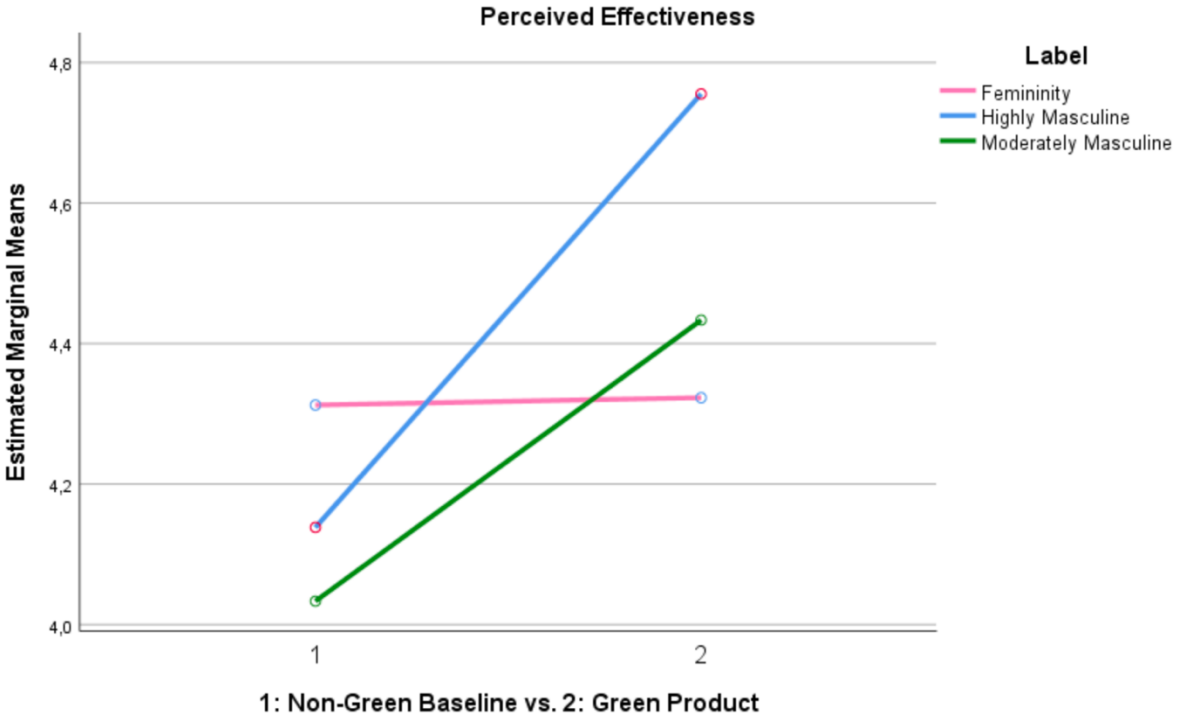



*Figure 6.3: Perceived Effectiveness*

## Perceived Gentleness of the Products

In addition to effectiveness, another important factor when purchasing a drain opener is that the pipes do not get damaged using the product, and gentleness is thus an important factor. It is therefore interesting to find out whether *perceived gentleness* is rated differently across the manipulated green products and if the degree of femininity in communication affects the respondents' perception. We predicted that the feminine communicated drain opener would be perceived as more gentle than the *highly masculine* and *moderately masculine* drain openers.

By doing a one-way ANOVA with a post-hoc test the differences in *perceived gentleness* between the green products of the groups: *feminine communication* ($M$ = 4.81, $SD$ = 1.45), *highly masculine communication* ($M$ = 4.37, $SD$ = 1.59) and *moderately masculine communication* ($M$ = 4.79, $SD$ = 1.35) were investigated. There were no significant differences between the groups at the 95% level, F (2, 277) = 2.675, p = .071. LSD post-hoc analysis shows that there was a statistically significant mean difference at the .05 level

between the *feminine communication* and *highly masculine communication* (*MD* = .440, p = .04). This states that the respondents rate the *perceived gentleness* of the *feminine communication* 0.440 units higher than when presented with *highly masculine communication* (Table E.2, Appendix E).

To investigate the difference in *perceived gentleness* between the green and non-green product within each box, a paired t-test was done. Box A with *feminine communication*: Respondents rated the *non-green baseline* (*M* = 2.27, *SD* = 1.18) lower on *perceived gentleness* than the *green product* (*M* = 4.81, *SD* = 1.45), a statistically significant mean decrease of -2.094, 95% CI [-2.477, -1.710], $t(95) = -10.841$, $p < .001$, $d = -1.11$. Box B with *masculine communication*: Respondents rated the *non-green baseline* (*M* =2.86 , *SD* = 1.26) lower on *perceived gentleness* than the *green product* (*M* = 4.37, *SD* = 1.59), a statistically significant mean decrease of -1.511, 95% CI [-1.910, -1.111], $t(93) = -7.512$, $p < .001$, $d = -.77$. Box C with *moderately masculine communication*: Respondents rated the *non-green baseline* (*M* = 2,76, *SD* = 1.25) lower on *perceived gentleness* than the *green product* (*M* = 4.79, *SD* = 1.35), a statistically significant mean decrease of -2.033, 95% CI [-2.434, -1.633], $t(89) = -10.096$, $p < .001$, $d = -1.06$.

All of the manipulated green products were significantly perceived as more gentle when compared to the non-green baseline. The green product with feminine communication was perceived as significantly more gentle than the product with highly masculine communication. The differences in *perceived gentleness* between the green products relative to the baseline are illustrated in Figure 6.4:


*Figure 6.4: Perceived Gentleness*

## Purchase Intention for the Products

A simple introduction of the variables *purchase intention* and *choice* will briefly be presented in this section. Since the purchase intention is the dependent variable of our study, it will be further addressed in the main analysis. Deriving from the dataset, the respondents seem to prefer the green product ($n$ = 245) when compared to the non-green baseline ($n$ = 35) regardless of the degree of femininity in communication (Figure 6.5). The findings show marginal differences in purchase intention between the different green stimuli (Figure 6.6).

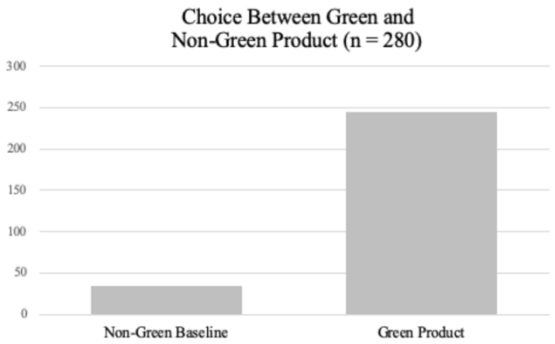



*Figure 6.5: Choice*

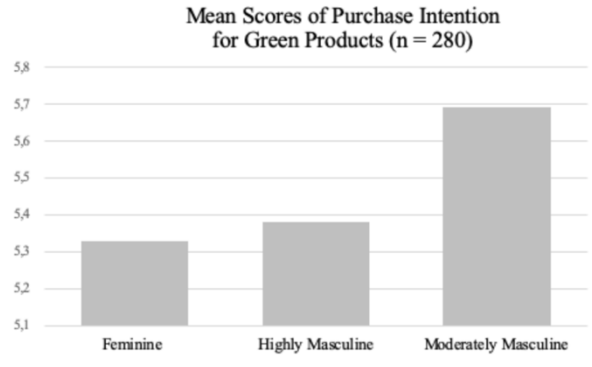



*Figure 6.6: Mean Scores of Purchase Intention*

When asking the respondent to elaborate the reason for the choice of product between the green and non-green baseline, we discovered that many answered that they chose the green product because there was a larger amount of information provided on the label (Figure 6.7), compared to the non-green baseline. The *choice* variable will be further addressed in the limitation section, and the *purchase intention* will be addressed in the following sections as the dependent variable of our study.

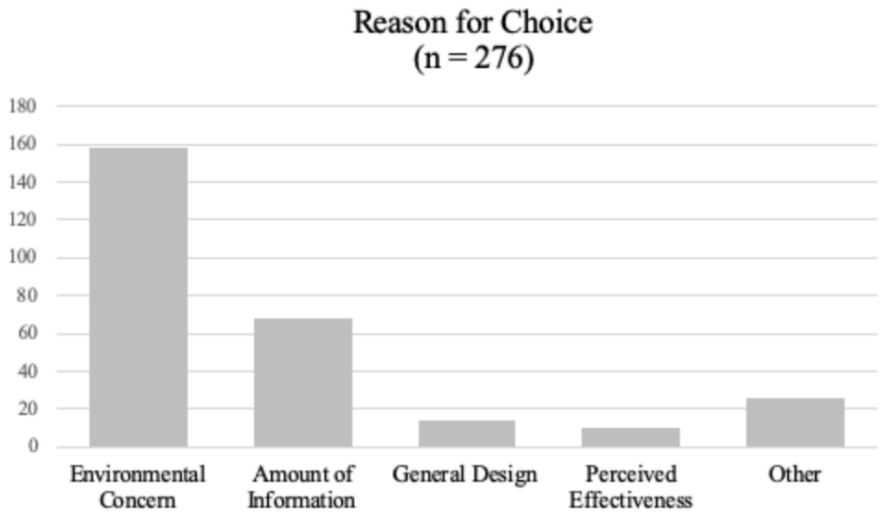



*Figure 6.7: Reason for Choice*

## 6.2 Direct Effects

A one-way analysis of variance (ANOVA) was conducted to answer the first set of hypotheses:

> $H_{1a}$: *Consumers have a higher purchase intention for the green product with highly masculine communication than for the green product with feminine communication*

> $H_{1b}$: *Consumers have a higher purchase intention for the green product with moderately masculine communication than for the green product with feminine communication*

$H_{1c}$: *Consumers have a higher purchase intention for the green product with highly masculine communication than for the green product with moderately masculine communication*

The analysis was conducted to determine if purchase intention for a green product was different when the green attributes were communicated through different degrees of femininity. The conditions compared were *feminine* communication ($M$ = 5.33, SD = 1.61), *highly masculine* communication ($M$ = 5.38, $SD$ = 1.65) and *moderately masculine* communication ($M$ = 5.69, $SD$ = 1.59). The ANOVA revealed no statistically significant differences between the groups at the $p < .05$ in purchase intention between the three green manipulations: $F$ (2, 277) = 1.297, $p$ = .275. The effect size, calculated using eta squared, was .009. Post-hoc comparison using the LSD test indicated that the mean differences when comparing the groups pairwise, there were no statistically significant differences between the groups in purchase intention. Thus, there is no support for $H_{1a}$, $H_{1b}$ or $H_{1c}$. The results are presented in Table G.1 (Appendix G).

## 6.3 Mediating Effects

A simple mediation analysis was conducted to answer the second set of hypotheses:

$H_{2a}$: *The effect postulated in* $H_{1a}$ *is mediated by perceived effectiveness*

$H_{2b}$: *The effect postulated in* $H_{1b}$ *is mediated by perceived effectiveness*

$H_{2c}$: *The effect postulated in* $H_{1c}$ *is mediated by perceived effectiveness*

The hypotheses were based upon the main effects regarding purchase intention from the first set of hypotheses. The results from the ANOVA did not lend support for any of the direct effects, but we will argue that the hypotheses of $H_2$ still can be supported by detecting a statistically significant indirect effect. This means that the indirect effect on purchase intention through perceived effectiveness can be present even in the absence of the direct relationship between X and Y. Hayes (2009) argues that there could be lack of a total effect

due to several paths of influence working in opposite directions, and therefore are cancelling each other out, and that some of these may not be a part of the proposed research model. This can be one of the reasons to finding a significant indirect effect while the total effect is non-significant (Hayes, 2009).

In the mediation analysis, for $H_{2a}$, the conditions *feminine communication* vs. *highly masculine communication* on *purchase intention* through *perceived effectiveness* were tested. A significant indirect effect was found through *perceived effectiveness* (effect = .239, 95% BootCI = {.022, .504}). There was no support for the direct effect (c' = -.190, $p$ = .377) nor the total effect (c = .050, $p$ = .834). This indicates a complete mediated model (Table H.1, Appendix H). The results indicate that the participants who were exposed to the green drain opener with the *feminine communication* on average rated their purchase intention .239 units lower than the respondents exposed to the green drain opener with highly *masculine communication*, when looking at the relation through *perceived effectiveness*. This supports that there is a mediating effect on perceived effectiveness, thus hypothesis $H_{2a}$ is supported.

For hypothesis $H_{2b}$, the conditions *feminine communication* vs. *moderately masculine communication* on *purchase intention* through *perceived effectiveness* were tested. The results showed no significant effects for the indirect effect (effect = .058, 95% BootCI = {-.144, .271}), nor for the direct effect (c' = .298, $p$ = .163) or total effect (c = .356, $p$ = .132) of our model (Table H.1, Appendix H). This lends to no support for $H_{2b}$. The postulation that *moderately masculine communication* gives a larger impact on purchase intention than *feminine communication* through *perceived effectiveness* is not supported.

Further, for hypothesis $H_{2c}$, the conditions *highly masculine communication* vs. *moderately masculine communication* on *purchase intention* through *perceived effectiveness*. There was no significant indirect effect (effect = -.155, 95% BootCI = {-.357, .029}), nor did we find a significant total effect (c = .306, $p$ = .203) in the model (Table H.1, Appendix H). There was a significant direct effect (c' = 0,461, $p$ = .040), however there are no mediating effects discovered. There is therefore no support for hypothesis $H_{2c}$. Thus, the postulation that *highly masculine communication* gives a larger impact on purchase intention than *moderately masculine communication* through *perceived effectiveness* is not supported.

The detailed process adding up to the model is presented in Figure 6.8. The mediation model presents two distinct pathways. The first pathway is the direct effect (c') which is the independent variable represented by the different degrees of feminine communication on *purchase intention*. The second pathway represents the indirect effect (*ab*) of the degree of feminine communication through the mediator *perceived effectiveness* to the dependent variable *purchase intention.* From Figure 6.8 we find that *feminine communication* is perceived to be less effective than *highly masculine communication* (*a* = .432*) and that *perceived effectiveness* has a significant effect on purchase intention (*b* = .553**). When looking at the differences between *feminine communication* and *moderately masculine communication* (*a* = .110) and between *highly masculine communication* and *moderately masculine communication* (*a* = -.322)*,* no significant mean differences were found between the groups in *perceived effectiveness.* Figure 6.8 shows that perceived effectiveness has a significant effect on *purchase intention* (*b)* at the p < .01 level in all of the three groups.

Despite of the lack of significant findings on the main effect in $H_{1a}$, we argue that hypothesis $H_{2a}$ is supported by the significant indirect effect presented above. There is no support for $H_{2b}$ or $H_{2c}$.

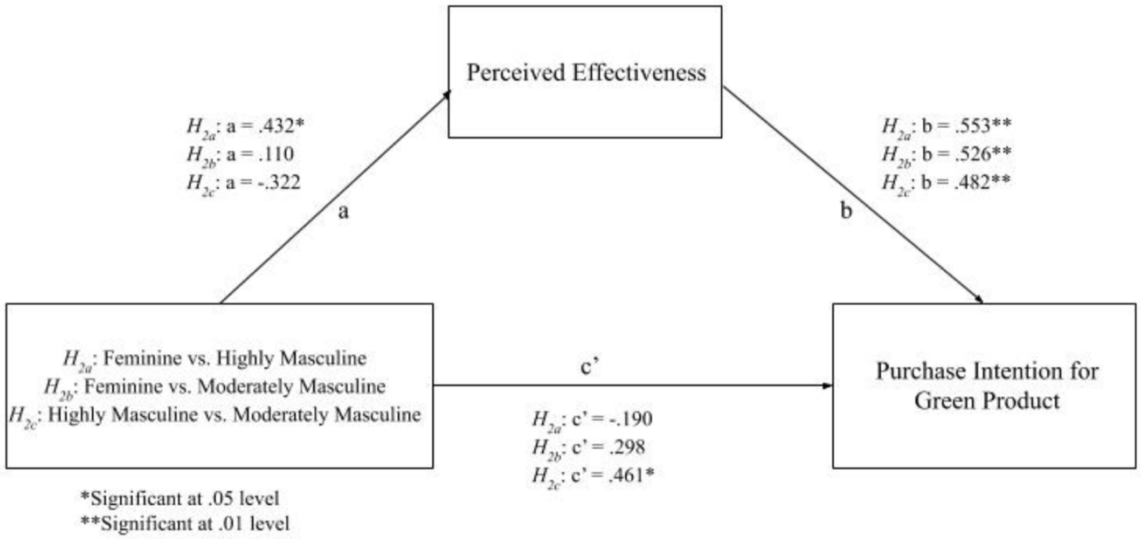



*Figure 6.8: Detailed Process of the Simple Mediation Model*

## 6.4 Moderated Mediation Effect

A moderated mediation analysis was conducted to answer the final set of hypotheses:

$H_{3a}$: *The effect postulated in $H_{2a}$ is moderated by gender*

$H_{3b}$: *The effect postulated in $H_{2b}$ is moderated by gender*

$H_{3c}$: *The effect postulated in $H_{2c}$ is moderated by gender*

The aim is to investigate whether *gender,* as a moderator, has an impact on the relationship described in the simple mediating model presented in the last section. Results from the three hypotheses are presented in Figure 6.9.

First, we tested if *gender* moderates the conditions *feminine communication* vs. *highly masculine communication* on the *purchase intention* through *perceived effectiveness*. There were no significant findings supporting the moderated mediation model (Index = -.112, 95% BootCI = {-.527, .319}), and thus, hypothesis $H_{3a}$ is not supported. Further, the test shows that there is a significant conditional indirect effect for women (effect = .293, 95% BootCI = {.008, .612}). The conditional indirect effect was not significant for men (effect = .182, 95% BootCI = {-.140, .571}). This indicates that women tend to perceive a green product with *highly masculine* communication as more effective than when presented with feminine communication, but since there is no statistically significant effect between woman and men, there is no support for the hypothesis (Table I.1, Appendix I). Looking at the detailed model of results (Figure 6.9), neither degree of femininity in communication on perceived effectiveness ($a_1$), gender on perceived effectiveness ($a_2$) nor the interaction of gender and degree of femininity in communication ($a_3$) were significant. Perceived effectiveness on purchase intention is significant ($b$ = .553**) as presented in the results of the simple mediation analysis.

Secondly, we tested if *gender* moderates the conditions feminine *communication* vs. *moderately communication* on the *purchase intention* through *perceived effectiveness.* There were no significant findings supporting the moderated mediation model (Index = .003, 95%

BootCI = {-.390, .421}), and thus, hypothesis $H_{3b}$ is not supported. When investigating the detailed model of results (Figure 6.9), neither degree of femininity in communication on perceived effectiveness ($a_1$), gender on perceived effectiveness ($a_2$) nor the interaction of gender and degree of femininity in communication ($a_3$) were significant. Perceived effectiveness on purchase intention is significant ($b$ = .526**) as presented in the results of the simple mediation analysis. Further, the test shows that there are no significant conditional indirect effects neither for women (effect = .055, 95% BootCI = {-.207, .323}) nor for men (effect = .058, 95% BootCI = {-.245, .393}) (Table I.1, Appendix I). The conditions *feminine communication* vs. *moderately communication* show no significant results on the conditional indirect effect of gender.

Finally, we tested if *gender* moderates the conditions *highly masculine communication* vs. *moderately masculine communication* on the *purchase intention* through *perceived effectiveness*. Again, there were no significant findings supporting the moderated mediation model (Index = .100, 95% BootCI = {-.275, .479}), and hypothesis $H_{3c}$ is not supported. Further, when looking at the detailed model of results (figure 6.9), neither degree of femininity in communication on perceived effectiveness ($a_1$), gender on perceived effectiveness ($a_2$) nor the interaction of gender and degree of femininity in communication ($a_3$) were significant. Perceived effectiveness on purchase intention is again significant ($b$ = .482**) as presented in the results of the simple mediation analysis. Further, the test shows that there are no significant conditional indirect effects neither for women (effect = -.205, 95% BootCI = {-.472, .037}) nor for men (effect = -.105, 95% BootCI = {.402, .177}) (Table I.1, Appendix I). The conditions *highly masculine communication* vs. *moderately masculine communication* show no significant results on the conditional indirect effect of *gender*.

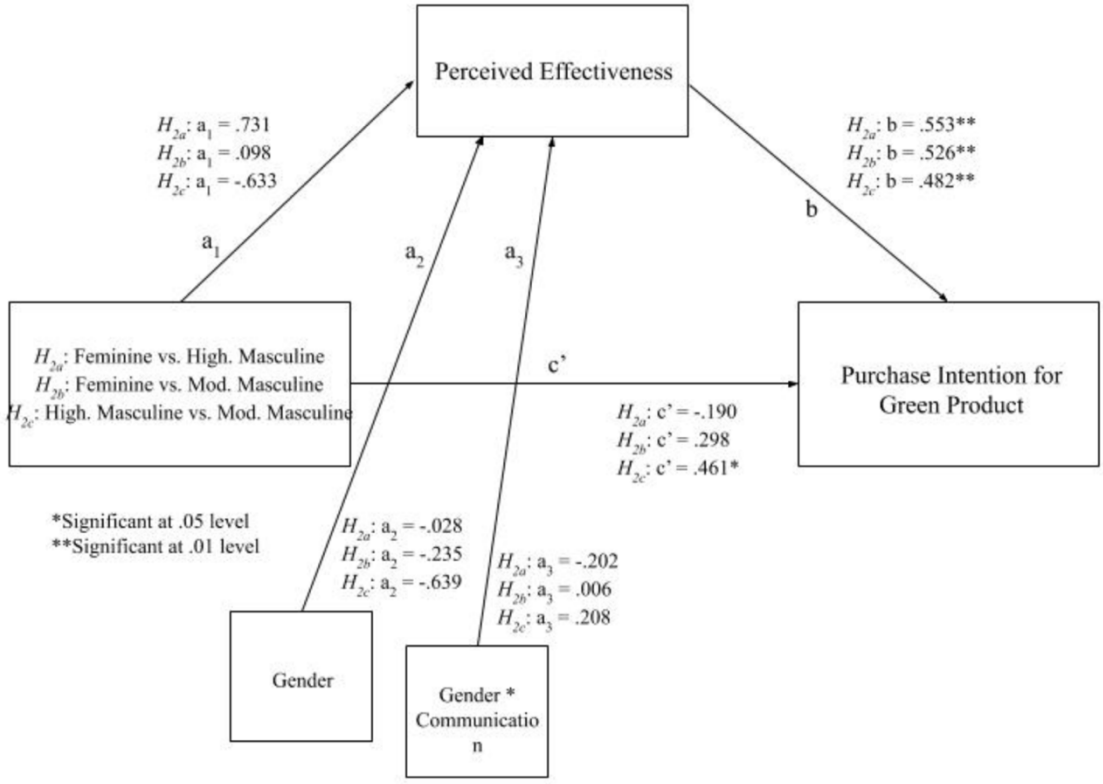



*Figure 6.9: Detailed Process of the Moderated Mediation Model*

## 6.5 Control Variables

A Spearman's correlation was done to test for the different control variables on the dependent variable purchase intention.

| | **Dependent variable** |
|---|---|
| **Control variables** | *Purchase intention* |
| Environmentally Concious | .219** |
| Importance | .202** |
| Guilt | .217** |
| Recycle | .159** |
| Quality | -.003 |
| Sacrifice | .070 |
| Importance of Price | .000 |
| Importance of Effectiveness | .110 |
| Importance of Recommandation | .125* |
| Importance of Environmentally Frien | .266** |
| Importance of Damage on Pipes | .149* |

Significant at 0.05 level*
Significant at 0,01 level **

*Table 6.1: Spearman Correlation Between the Control Variables and Purchase Intention*

The results from the analysis shows a weak positive correlation between *importance* and purchase intention, $r_s(278) = .202$, $p = .001$ as well as a weak positive correlation between *environmentally conscious* and purchase intention, $r_s(278) = .219$, $p < .001$. This indicates that consumers that find it important to buy green products, and consumers that believe they are environmentally conscious, will have a higher purchase intention for a green drain opener. A weak positive correlation was also found between *guilt* and purchase intention, $r_s(278) = .217$, $p < .001$. This finding indicates that people that feels guilt over choosing the least environmentally friendly alternative also have a higher purchase intention for the green drain opener. A minimal positive correlation between *recycle* and purchase intention was found, $r_s(278) = .159$, $p = .008$. This indicates that consumers that report that they recycle also tend to have a higher purchase intention for the green drain opener.

When controlling for the variables for the rated importance of different drain opener attributes we found a minimal positive correlation between *importance of recommendation from others* and purchase intention, $r_s(273) = .125$, $p = .038$ and a minimal positive correlation between *gentleness on pipes* and purchase intention, $r_s(274) = .149$, $p = .013$. A weak positive correlation was also found, between *importance of environmental friendliness* and purchase intention, $r_s(277) = .266$, $p < .001$. This indicates that consumers rating that environmental friendliness is an important attribute when purchasing a drain opener also tend to have a higher purchase intention for the green alternative.

## 6.6 Additional Findings

When conducting the experiment, a large amount of data was gathered, and several relations have not been addressed through our research question or hypotheses. Therefore, some additional findings arising from the dataset will be presented. These include a practical test of effectiveness which is done to further investigate the underlying perceptions of effectiveness. We will also introduce *perceived gentleness* as a proposed mediator for the simple mediation model, to see whether an indirect effect is found on purchase intention. We emphasize that these analyzes are of an exploratory nature as they are not related to the main research question of our study.

### 6.6.1 Practical Test of Perceived Effectiveness

A practical test was included in the survey to substantiate the results from perceived effectiveness, which is a central part of the thesis. The practical test builds on the research of (Lin & Chang, 2012), which found that consumers used a larger amount when exposed to a green product that when exposed to a non-green product. They point out that this most likely was done to compensate for the supposedly reduced effect of the green product (Lin & Chang, 2012). We want to see whether this logic is transferable to our study. More specifically, whether the *estimated amount* differs with different degrees of femininity in the communication of a green drain opener and thus, if there can be found differences in perceived effectiveness across the green products.

To answer this question, a one-way ANOVA was conducted with an LSD post-hoc test. The differences in *estimated amount* (based on the poured amount of the respondents in the practical test) was tested for mean differences. Between the green products of *feminine communication* (*M* = 149.93, *SD* = 106,90), *highly masculine communication* (*M* = 121.40, *SD* = 81.94) and *moderately masculine communication* (*M* = 135,97, *SD* = 108.22), there are no significant difference across these three groups at the 95% level, F(2, 277) = 1.945, p = .145. However, the post-hoc analysis shows that there was a statistically significant mean difference at the .05 level between the *feminine communication* and *highly masculine communication* in *estimated amount.* This states that when the respondent is presented with a green product with feminine *communication,* the respondents on average pours 28.52 ml more drain opener into the measuring cup than when presented with *highly masculine communication* (*MD* = 28.52, p = .05). This corresponds with our suppositions based on theory and previous reasoning, and can indicate that respondents have less faith in the product with *feminine communication* than the product with *masculine communication,* and therefore feel the need to use a larger amount of the product to compensate. The results are presented in full in Table J.1 (Appendix J).

### 6.6.2 Perceived Gentleness as a Mediator

Luchs et al. (2010) states that the green attributes of a product are positively associated with gentleness-related attributes, and negatively associated with strength-related attributes. As expected *importance of effectiveness* (*M* = 5.87, *SD* = 1.12) scored high on importance when

buying a drain opener, however that *importance of gentleness* (*M* = 5.90, *SD* = 1.18) was also a highly valued factor when comparing the means of importance when buying a drain opener. The numbers can be found in Table E.1 (Appendix E). When addressing the different attributes of importance in a purchase decision of a drain opener, the respondents rate the importance of effectiveness and gentleness very similar, indicating that both phenomena are important to the consumers. The positive effect of a product's greenness on consumer preference is reduced when strength-related attributes are valued (Luchs et al., 2010). This can result in a preference for non-green products. Conversely, preference for green products increases when gentleness-related attributes are valued. It was therefore interesting to further investigate this gentleness-effectiveness connection.

A simple mediation analysis was conducted with *perceived gentleness* as the mediator to see if it can lead to higher purchase intention for the green products. We chose to only look at the connection between the green products with *the feminine communication* and *the highly masculine communication*, because this was the only significant indirect effect present for the connection with *perceived effectiveness* as the mediator. The simple mediation model is presented below:

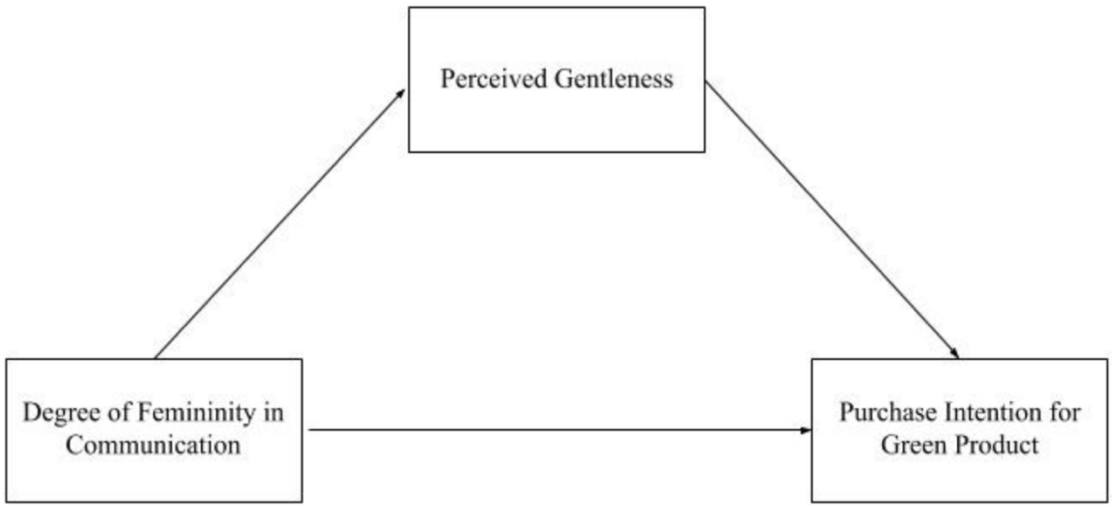



*Figure 6.10: Simple Mediation Model: Perceived Gentleness*

Through the mediating analysis, the conditions *feminine communication* vs. *highly masculine communication* on the *purchase intention* through *perceived gentleness* was tested for. A significant indirect effect (effect = -.151, 95% BootCI = {-.335, -.001}) was found.

There was no support for the direct effect (c' = .200, $p$ = .380) or the total effect (c = .050, $p$ = .834) of our model, indicating a complete mediated model (Table J.2, Appendix J). From Figure 6.11 we find that *feminine communication* is perceived to be more gentle than *highly masculine communication* ($a$ = -.440*) and that *perceived gentleness* has a significant effect on purchase intention ($b$ = .342**). This indicates that the participants that were exposed to the green drain opener with the *feminine communication* were on average .151 units higher in rating of their purchase intention then those who received the product with the *highly masculine communication*, through the *perceived gentleness*.

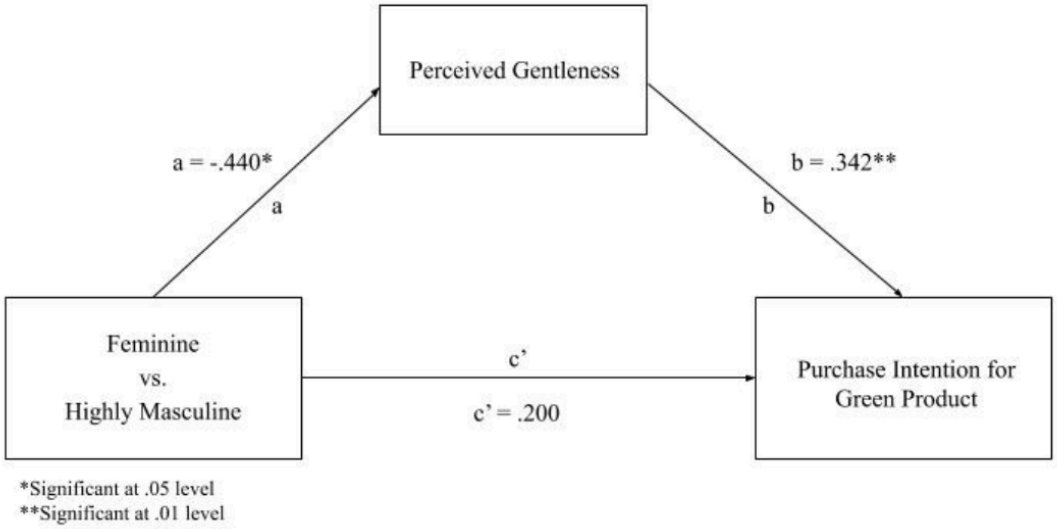



*Figure 6.11: Detailed Process of the Simple Mediation Model: Perceived Gentleness*

# 7. Summary of Results and Discussion

In this chapter we will discuss the results of our study. In the first section, the results of the statistical analyzes are summarized and discussed. A general discussion based on overall findings of our study is thereafter presented, providing possible explanations for the findings and assessing possible factors that might have an impact on the findings before a conclusion is drawn in chapter 8.

| **Hypothesis** | **Result** |
|---|---|
| $H_{1a}$ Consumers have a higher purchase intention for the green product with highly masculine communication than for the green product with feminine communication | Not supported |
| $H_{1b}$: Consumers have a higher purchase intention for the green product with moderately masculine communication than for the green product with feminine communication | Not supported |
| $H_{1c}$: Consumers have a higher purchase intention for the green product with highly masculine communication than for the green product with moderately masculine communication | Not supported |
| $H_{2a}$: The effect postulated in H1a is mediated by perceived effectiveness. | Supported |
| $H_{2b}$: The effect postulated in H1b is mediated by perceived effectiveness. | Not supported |
| $H_{2c}$: The effect postulated in H1c is mediated by perceived effectiveness. | Not supported |
| $H_{3a}$: The effect postulated in H2a is moderated by gender | Not supported |
| $H_{3b}$: The effect postulated in H2b is moderated by gender. | Not supported |
| $H_{3c}$: The effect postulated in H2c is moderated by gender. | Not supported |

*Table 7.1: Overview of Hypotheses and Results from the Study*

## 7.1 Discussion of Results

### 7.1.1 Direct Effects

The results deriving from the analysis showed that masculine communication of green attributes of a drain opener did not result in a higher purchase intention than when these attributes were communicated with feminine communication. There was no significant effect between the different degrees of feminine communication and thus, no support for hypothesis; $H_{1a}$, $H_{1b}$or $H_{1c}$. The lack of significant findings may derive from that the manipulations did not manage to significantly differ in regards of perceived femininity. This can be a reason for why the stimuli did not give a sufficient difference and hence, did not affect the purchase intention of the green drain openers as expected. Therefore, research is still needed in this field to succeed to manipulate the stimuli as significantly different in masculinity and femininity and draw further conclusions.

### 7.1.2 Mediating Effects

When investigating how perceived effectiveness mediated the relation of the different degrees of feminine communication on purchase intention, no significant total effects were discovered. A significant indirect effect was found between *feminine communication* vs. *highly masculine communication* on purchase intention through perceived effectiveness. This indicates a complete mediation model, which means the effect on purchase intention is explained by the change in perceived effectiveness and thus gives support for $H_{2a}$. Further, there was no significant indirect effect when comparing *feminine communication* vs. *moderately masculine communication,* nor for *highly masculine communication* vs. *moderately masculine communication* and further there was no support for $H_{2b}$and $H_{2c}$.

When investigating the detailed connection behind the mediation model, the analysis shows that the *perceived effectiveness* of a green product is higher when the green attributes of the products are communicated through *highly masculine communication* than when they are communicated through *feminine communication,* which is consistent with our prior assumptions. This could indicate that a higher degree of masculinity in communication increases the respondents perceived effectiveness of a product and thus, the purchase intention. In addition, the analysis show that perceived effectiveness generally has a

significant positive effect on purchase intention, which shows that when a drain opener is perceived as effective, this leads to an increased purchase intention, which is consistent with prior research.

However, as emphasized earlier, there was not found a significant difference between the degrees of femininity in communication, which prevent us to draw conclusions based on the actual perceived femininity of the products. This can be one the reasons for the lack of findings for the $H_{2b}$ and $H_{2c}$, due to the manipulations of the communication of the masculinity/femininity not being adequately extreme. There were only differences found when looking at the most differentiated manipulations, the *moderately masculine communication* did not present any differences when compared to the other manipulations with supports the theory that the manipulations did not succeed in being adequately extreme.

### 7.1.3 Moderating Mediation Effects

To test for the interference of gender as a moderator in our mediation model, a moderated mediation analysis was conducted. No significant effects were found when investigating if gender moderates the relationship of purchase intention through perceived effectiveness, thus leading to no support for $H_{3a}$, $H_{3b}$ or $H_{3c}$. This was expected since the second set of hypotheses was not supported when testing for the simple mediating analysis. Further, we found that the conditional indirect effect was significant for women when investigated within the conditions of *feminine communication* vs. *highly masculine communication*. This indicates that women perceived the green drain opener with *highly masculine communication* as more effective than the green drain opener with *feminine communication.* This was an unexpected finding since prior research show that when manipulating a product to be perceived as more masculine, this mainly affected men (Brough et al., 2016). This is accordingly interesting, and may enlarge the opportunity deriving from understanding the connections between green products and effectiveness, and leads to an increased interest in further research for these connections.

### 7.1.4 Control Variables

The correlation analysis found several significant correlations between the variable tested for, and the purchase intention. The correlations were only weak and minimal positively correlated connections, and no strong correlations were identified. This indicates that the connections found do not give an alternative explanation to change in purchase intention. The highest correlation found was between *importance of environmental friendliness* and *purchase intention*, which is an expected finding since rating environmental friendliness as an important attribute would also imply a higher purchase intention for a green drain opener. This reasoning would also apply to the other control variables since the questions asked are regarding the respondents' focus on environmental friendliness, and purchasing the green drain opener is an environmentally friendly choice.

### 7.1.5 Additional Findings

#### *7.1.5.1 Practical Test of Perceived Effectiveness*

Interpreting the results from the ANOVA for the practical test, the findings revealed that respondents seem to compensate when using the green product with *feminine communication*. The findings show a statistically significant difference between the product with *feminine communication* vs. *highly masculine communication*. This indicates that respondents seem to have less faith in the *feminine* version of the product than when presented to the most masculine version and therefore feel the need to use more of the product to compensate. This support the findings from the respondents reported perceived effectiveness. The respondents exposed to the *highly masculine* manipulation both rated and acted differently that those exposed to the feminine manipulation, thus indicating a perceived difference between the two products. Although, we are not able to pinpoint the exact reason for this connection.

#### *7.1.5.2 Gentleness as a Mediator*

Gentleness is found as an important attribute for the respondents when purchasing a drain opener, and it was therefore interesting to see how *perceived gentleness* mediated the connection between degree of feminine communication and purchase intention for a green drain opener. Interpreting the additional findings from the simple mediation model, a significant indirect effect on purchase intention through *perceived gentleness* is found when

comparing the products; *feminine communication* and *highly masculine communication*. This indicates that the green product with *feminine* communication (vs. *highly masculine* communication) score higher on gentleness which again decreases the meditation effect on purchase intention. Again, a difference is found between the most differentiated manipulations, indicating a that the *feminine* manipulation is perceived as more gentle than the *highly masculine* manipulation, which is consistent with the assumptions from the prior findings.

## 7.2 General Discussion

The purpose of the thesis was to investigate the impact of different degrees of femininity in communication of a product's green attributes and how these influence consumers' purchase intention through perceived effectiveness. The research question composed was:

*RQ:* Do different *degrees of feminine communication* of a green product affect the *purchase intention* towards the product, and is this mediated by the *perceived effectiveness* of the product.

The results revealed that difference in the presented manipulations did not affect the purchase intention of the green product. The analysis did however indicate that there was differences between the most differentiated green products in perceived effectiveness. An indirect effect between the *feminine* and the *highly masculine* manipulations of feminine communication, stating that a more masculine communication increases the purchase intention for a green product, through perceived effectiveness. This indicate that the difference in communication has an effect on the perceived effectiveness of the product, thus leading to a higher purchase intention for the masculine product. A moderating effect was also found suggesting a difference for woman in this relation, although no significant difference between the genders was found. Thus, leading to the understanding that for women, the product with *highly masculine communication* (vs. *feminine communication*) leads to a higher perceived effectiveness of the product. This is interesting since most literature only can report positive findings for men when manipulating a product design to a more masculine version.

As mentioned throughout the thesis, it is important to emphasize that the different manipulations did not significantly differ in regard to perceived femininity. This further make us unable to conclude that any of the hypotheses are a result of a difference in perceived femininity of the manipulations. We suspect one of the reasons for these results, was that the stimuli were not distinctly differentiated when presented on the label of the drain opener. One reason for this could be that the manipulations fell through in the experimental setting when labelled on a real product, and thus lost the isolated significant differences found in the pretest. Looking beyond the lack of major findings from the main analysis we will look closer into the descriptive and additional findings in our analysis that might contribute to reveal possible links for further understanding the connections proposed.

One of the most interesting findings was found when comparing the green products in regard to perceived effectiveness. We found that both masculine green products are perceived as more effective compared to their non-green baseline. As discussed earlier this may be caused by the within-subject factors not containing an equal amount of information, and that the respondents therefore perceived the green product as the most effective. On the other hand, the feminine communicated product was rated as nearly identical in perceived effectiveness compared to the non-green baseline. This may cause an indication that the two masculine manipulations were perceived as more effective, although the respondents did not admit to having a more masculine perception towards these. A possible reason for this is that the respondents subconsciously sense a difference between the different manipulations, although they are not able to distinctly differ when explicitly asked in a survey.

This connection can also be found when investigating the results from the practical test of perceived effectiveness, in the additional findings. When further investigating the post hoc test, the results revealed that the respondents exposed to the feminine version significantly used more of the product content than those exposed to the *highly masculine* communicated version. This could indicate that there is an existing, underlying perception that the product with feminine communication is less able to “get the job done”, and that a larger amount of the product content is needed. When further looking at the model with gentleness as a mediator, a difference is found between the same variables indicating a perceived difference. Thus, the most differentiated models do manage to express differences in both perceived gentleness and effectiveness, although we are not able to pinpoint what the underlying factors for what the differences are caused by. One possible reason could be that there exists

a difference between the respondents underlying perceptions and what actually the rate when exposed to a question. This could indicate that consumers are not always able to communicate their underlying perceptions. A different reason for the lack of difference between the manipulations could be that there is some other existing factor present that is not explicitly tested for.

The mediation model did however reveal the connection that perceived effectiveness is positively affecting the purchase intention. This leads to the connection that effectiveness seems to be an important factor for the consumers' purchase intention. A change to manipulating green products to be perceived as more effective could therefore be one of the factors that could increase the purchase intention for green products and is still an important factor to further explore.

# 8. Conclusion and Implications

The first section of this final chapter will present a review of the study's limitations by addressing the validity and reliability. Then, the implications of the study will be presented adding up to a suggestion of directions for further research, before drawing a conclusion based on the general discussion of our thesis.

## 8.1 Limitations

Possible limitations related to the study are here identified, regarding the sample, questionnaire and how the field experiment setting was carried out. Validity will be the main focus of discussion for this thesis and both validity and reliability are addressed continuously throughout the thesis. However, the main limitations will be discussed in this section. Addressing validity and reliability is important in order to reduce the possibility that the results and drawn conclusions are wrong (Saunders et al., 2016). This is especially important when gathering primary data (Beech, 2015, p. 91).

The validity of a study addresses whether one measures what actually is intended to be measured (Saunders et al., 2016). Measurement validity addresses to what extent the scales and measuring instruments presented actually measures the phenomenon intended (Saunders et al., 2016). Measures, scales and constructs are based on prior research, strengthening the construct validity of the study (Saunders et al., 2016).

One of the main limitations of this study is that the stimuli manipulated in our main survey did not sufficiently differ in perceived femininity. Despite the fact that the informational cues differed significantly within the pretest, there were only discovered minor, non-significant, differences in the main survey (however in the presumed direction). It seems like the green associations of the complete label on the drain opener overwrite the masculine associations, which lead to the stimuli not being manipulated sufficiently in the matter intended. Consequently, this prevents us from drawing conclusions based on femininity of

the manipulated green products in the results of the main questionnaire. This could be a threat to the measurement validity of the study.

A problem arising during the experiment was that the non-green baseline was not manipulated to contain any additional text, resulting in a difference in amount of communication delivered between the green- and the non-green product. It is natural to assume that a product containing a lot of information on its product's attributes would be preferable compared to a product containing close to no information. From the results of the questionnaire, 24.6 % of the respondents answered the reason for choosing the green product was due to the product label containing more information (all reasons are presented in figure 6.7). Thus, this might lead to the respondents favoring the green product when rating the purchase intention. This could be a threat to the validity of our study.

*Internal validity* addresses whether the causal relationships between two variables is accurately demonstrated through the research (Saunders et al., 2016). Our study addresses internal validity by testing for control variables, where only weak correlations were discovered. However, it is not possible to control for all possible effects, and there might be other confounding variables affecting the relationship which are not tested for, which could be a threat to the internal validity.

In the time around the conduction of the field experiment, there had been a great amount of media coverage regarding the climate debate, much due to an ongoing international school strike for climate (NRK, 2019). This event could pose a threat to the internal validity of the study, and may lead to the respondents reporting different answers than they would under "normal" circumstances. This has led to an increased environmental awareness and, further, an increased focus on making environmentally conscious choices as a consumer. Whether these attitudes are permanent or transient, or even affect the result of this study, is uncertain and difficult to measure. However, one can draw lines to this being one of the reasons to the large proportion of respondents choosing the green option, regardless of which stimuli they were presented to.

To be able to transfer the findings of the study into other settings or groups, one must ensure external validity. *External validity* addresses whether the results can be generalized, in other words, whether the sample is representative of an entire population (Saunders et al., 2016).

The study received relatively many respondents (n = 280), and used both within- and between subjects, which implies a need for fewer respondents than with a between-subjects design. Tabachnick & Fidell as cited in Pallant, (2010) suggest that a sample of over 200 observations is adequate for this type of study. The sample consisted of 40% males (n = 113) and 60% females (n = 167). The gender distribution in the sample was not optimal, but adequate. The age of the respondents was quite evenly distributed between 13 and 80 years (*M* = 39.40 years). One can therefore argue that the sample could be recognized as generalizable, which strengthen the external validity of the study.

Reliability assesses whether the results of a study would be the same if the same survey had been performed at another point of time or by other researchers (Saunders et al., 2016). The study was developed and analyzed by two researchers which helps strengthen the internal reliability of the study. Since it reduces the researcher error, which is "any factor which alters the researcher's interpretation" (Saunders et al., 2016, p. 203) and researcher bias "Any factor which includes bias in the researcher's recording of responses" (Saunders et al., 2016, p. 203). During the experiment we had to interact with the respondents in order to guide them through the experiment. Her lies a risk of influencing the respondents' response, known as respondent bias (Saunders et al., 2016). To avoid this bias, we made sure to provide the same line of information to all respondents, keeping the interaction as neutral and similar as possible. The study was conducted in a busy shopping center, where people tend to be in a hurry at certain hours of the day. In order to reduce the chance of participant errors, which are factors that can alter the way the respondent performs (Saunders et al., 2016, p. 203), the data was collected over three days and on different hours during the day, to avoid times when people would normally be in a hurry.

## 8.2 Implications

This master thesis cannot assert contributing to theory within feminine communication, but do contribute with some insight in the field of green consumerism and consumer preferences.

Due to few significant findings deriving from our data, the results may not be able to give a concrete course of direction for actions to be taken for Orkla, or for marketers in general.

However, our findings can be a contribution, knowing that there are barriers preventing consumers to purchase green products, while simultaneously having positive attitudes towards them. This can further be used by companies to understand how communication of a product can increase purchase intentions towards green consumption, and thus contribute to a shift towards choosing green products.

We see that it is important for consumers that the products they purchase are effective. A connection between purchase intention and perceived effectiveness of the drain opener is found. Our thesis discusses the perceived effectiveness of a green product, and whether the perceived femininity of the communication alters this. Therefore, it is important to further investigate how green products are communicated and whether another form of gender related communication can have an impact on the perceived effectiveness. A shift towards a greater focus on the product's attributes related to effectiveness rather than the green- and gender related attributes, might positively increase the perception of a green product within the “strong” product category.

Lu et al. (2013) designates the green consumers as being the force behind the green industry. There are indicators pointing towards consumers being increasingly concerned with environment. Both due to the increased focus towards the climate and shown in our findings where most respondents preferred the green product over the non-green product. Consequently, this might increase the willingness among consumers toward a greener consumption pattern. It is accordingly important for marketers to closely monitor changes in consumer preferences, and adjust their marketing thereafter. It is hereby important to take this into account when developing new promotional strategies for green products.

## 8.3 Further Research

Deriving from our research we find that effectiveness as a barrier to green consumption is still an important area for further exploration. New ways of communicating a product as both green and effective are therefore still needed.

Since this thesis did not manage to sufficiently change the perceived femininity, we would encourage researchers to further investigate this matter. Due to time constraints of a master thesis, we have been unable to go as deep into the researched material of femininity and masculinity as we would like to. The manipulations of our study may have suffered from this, and would have benefitted from being developed and enhanced further. Therefore, we would recommend for further research to explore this topic through a more comprehensive study containing more resources and an extended time frame.

Knowing that distinctly feminine and distinctly masculine marketed products are more attractive (Luchs et al., 2010), this may be a topic for further exploration. To differentiate the green products into products containing more stereotypical masculine and feminine communication, would be an interesting approach. In our study there was of great importance that the products contained the same information, to be able to extract what factors of manipulation that led to potential changes. This issue might have a different solution. It would be possible to investigate more "extreme" versions of the manipulations, creating a more distinct difference. Prior research shows that a product's attributes should focus more on the effectiveness of the product and less on the environmental friendliness since this often implies that there is a lower effectiveness (Newman et al., 2014). Although, due to an increased focus for the environment, this could also reduce the likelihood of choosing the product. It would therefore be interesting to research the implications of a shift in communication. Hence, towards focusing on effectiveness of the product attributes in favor to the greenness, and how this will further affect the purchase intention for green products. It is accordingly interesting to investigate whether this will differ between men and women.

This study explored the differences in communication for the strong product category, where environmental friendliness is not necessarily seen as an asset (Luchs et al., 2010). The impact of manipulating products to be perceived as more masculine within the "gentle product category" would also be interesting to explore, due to the environmental friendliness to a larger extent is seen as an asset. This to see whether a change in gendered communication affect the perceived effectiveness of the product, and if the connection will change the perceived greenness, resulting in a lower purchase intention.

## 8.4 Conclusion

As Greta Thunberg expressed in her speech, we have to act fast. Companies need to take responsibility and action through making their business models sustainable for the future generations. An increased focus towards environmental issues increases the importance of companies adapting sustainable production to meet the demands of both society and their customers, which creates great opportunities for exploring this further. Companies need to act, in order to meet the demands for tomorrow and to reach the Sustainable Development Goals by 2030. An increased focus in all parts of the supply chain is therefore needed, from the producer to the final consumer. It is essential for companies to understand their customers' preferences and behavior and exploring this further to expand today's targeted group of consumers.

The purpose of the thesis was to explore how different degrees of femininity in communication of a product's green attributes could influence consumers' perception of green products, and lead to an increased purchase intention. This is done by investigating how more masculine centered communication can have an impact on increasing purchase intention towards green consumption, and if this could alter the perceived effectiveness of the green product, possibly reducing the quality barrier. The results showed no significant differences in purchase intention when exposed to different degrees of feminine communication of the green drain opener, and only for the most differentiated versions did it influence the perceived effectiveness between the products. There were no findings in regard to gender differences in perceived effectiveness of the product between men and women. The findings indicate that there might be another underlying factor, or that the degrees of gendered communication need to be distinctly differentiated, to provide a difference in purchase intention for the green product.

In conclusion, the results disprove that the difference of communication of the manipulated products impacts purchase intention for a green product. Although the findings give no basis to establish whether this is due to degree of femininity or not. A study with a more dominant difference in gendered communication is needed to reveal the total connection. Overall the study has contributed with researching the connection between femininity in communication and effectiveness of a green product, although no direct connections were found. Further

investigation is therefore needed to explore the connections between gendered communication, perceived effectiveness and greenness to uncover the underlying factors eliminating the barriers for green consumption.

# 9. References

Banerjee, S., Gulas, C. S., & Iyer, E. (1995). Shades of green: A multidimensional analysis of environmental advertising. *Journal of Advertising, 24*(2), 21-31. doi:10.1080/00913367.1995.10673473

Beech, J. (2015). *Doing your business research project*. London: Sage.

Belk, R. W. (1988). Possessions and the extended self. *Journal of Consumer Research, 15*(2), 139-168. doi:https://doi.org/10.1086/209154

Bjorvatn, E. E., & Bjarnadottir, Å. N. (2018). *Does Eco-frendliness Come at the Expense of Quality?* (Master thesis), Norwegian School of Economics, Bergen.

Brough, A. R., Gal, D., Isaac, M. S., Ma, J., & Wilkie, J. E. B. (2016). Is Eco-Friendly Unmanly? The Green-Feminine Stereotype and Its Effect on Sustainable Consumption. *Journal of Consumer Research, 43*(4), 567-582. doi:10.1093/jcr/ucw044

Epley, N., Waytz, A., & Cacioppo, J. T. (2007). On seeing human: a three-factor theory of anthropomorphism. *Psychological review, 114*(4), 864. doi:http://dx.doi.org/10.1037/0033-295X.114.4.864

Gabler, C. B., Butler, T. D., & Adams, F. G. (2013). The environmental belief-behaviour gap: Exploring barriers to green consumerism. *Journal of Customer Behaviour, 12*(2-3), 159-176. doi:https://doi.org/10.1362/147539213X13832198548292

Gershoff, A. D., & Frels, J. K. (2015). What makes it green? The role of centrality of green attributes in evaluations of the greenness of products. *Journal of Marketing, 79*(1), 97-110. doi:https://doi.org/10.1509/jm.13.0303

Gleim, M. R., Smith, J. S., Andrews, D., & Cronin Jr, J. J. (2013). Against the green: a multi-method examination of the barriers to green consumption. *Journal of retailing, 89*(1), 44-61. doi:https://doi.org/10.1016/j.jretai.2012.10.001

Grohmann, B. (2009). Gender dimensions of brand personality. *Journal of marketing research, 46*(1), 105-119. doi:https://doi.org/10.1509/jmkr.46.1.105

Handayani, W. (2017). Green Consumerism: an Eco-Friendly Behaviour Form Through The Green Product Consumption and Green Marketing. *Sinergi: Jurnal Ilmiah Ilmu Manajemen, 7*(2). doi:http://dx.doi.org/10.25139/sng.v7i2.364

Handeland, S., & Skogholt, J. V. (2018). *Betyr miljøvennlighet lavere kvalitet? En eksperimentell studie av forbrukeres valg og holdninger til grønne produktattributter.* (Master Thesis), Norwegian School of Economics, Bergen.

Harrison, G. W., & List, J. A. (2004). Field experiments. *Journal of Economic literature, 42*(4), 1009-1055. doi:10.1257/0022051043004577

Hayes, A. F. (2018). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach* (2nd edition ed.): Guilford Publications.

Huang, Y., & Wan, E. (2015). Going Green, Going Feminine: How Green Appeal Influences Products Targeting Consumers of Different Genders. *ACR North American Advances*.

Jerndahl, S. R., & Næss, S. H. (2018). *Addressing Gender Differences in Green Consumption; Does Communication of Effectiveness Make a Difference?* (Master Thesis), Norwegian School of Economics, Bergen.

Joshi, Y., & Rahman, Z. (2015). Factors affecting green purchase behaviour and future research directions. *International Strategic management review, 3*(1-2), 128-143. doi:https://doi.org/10.1016/j.ism.2015.04.001

Jørgensen, S., & Pedersen, L. J. T. (2018). *Restart Sustainable Business Model Innovation*. In. doi:10.1007/978-3-319-91971-3

Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing, 57*(1), 1-22. doi:https://doi.org/10.1177/002224299305700101

Khan, A. F. (2015). *Assessment of Midlife Career Stress on Indian Managers.* (Ph.D), Aligarh Muslim University, Aligarh.

Kherad-Pajouh, S., & Renaud, O. (2015). A general permutation approach for analyzing repeated measures ANOVA and mixed-model designs. *Statistical Papers, 56*(4), 947-967. doi:10.1007/s00362-014-0617-3

Klar. (2019). Tøyvask hjem. Retrieved from https://klardag.no/produkter/toyvaskmiddel/

Klatzky, R. L., Lederman, S. J., & Reed, C. (1987). There's more to touch than meets the eye: The salience of object attributes for haptics with and without vision. *Journal of experimental psychology: general, 116*(4), 356. doi:http://dx.doi.org/10.1037/0096-3445.116.4.356

Kolonial.no. (2019). Organic Circle. Retrieved from https://kolonial.no/produkter/merke/1228-organic-circle/

LaerdStatistics. (2017). One-way ANOVA using SPSS Statistics. Statistical tutorials and software guides. Retrieved from https://statistics.laerd.com/

LaerdStatistics. (2018). Spearman's correlation using SPSS Statistics. Statistical tutorials and software guides. Retrieved from https://statistics.laerd.com/

Lieven, T., Grohmann, B., Herrmann, A., Landwehr, J. R., & Van Tilburg, M. (2014). The effect of brand gender on brand equity. *Psychology & Marketing, 31*(5), 371-385. doi:https://doi.org/10.1002/mar.20701

Lieven, T., Grohmann, B., Herrmann, A., Landwehr, J. R., & Van Tilburg, M. (2015). The effect of brand design on brand gender perceptions and brand preference. *European Journal of Marketing, 49*(1/2), 146-169. doi:https://doi.org/10.1108/EJM-08-2012-0456

Lin, Y.-C., & Chang, C.-c. A. (2012). Double standard: The role of environmental consciousness in green product usage. *Journal of Marketing, 76*(5), 125-134. doi:https://doi.org/10.1509/jm.11.0264

Lu, L., Bock, D., & Joseph, M. (2013). Green marketing: what the Millennials buy. *Journal of Business Strategy, 34*(6), 3-10. doi:https://doi.org/10.1108/JBS-05-2013-0036

Luchs, M. G., Naylor, R. W., Irwin, J. R., & Raghunathan, R. (2010). The sustainability liability: Potential negative effects of ethicality on product preference. *Journal of Marketing, 74*(5), 18-31. doi:https://doi.org/10.1509/jmkg.74.5.18

Narula, S. A., & Desore, A. (2016). Framing green consumer behaviour research: opportunities and challenges. *Social Responsibility Journal, 12*(1), 1-22. doi:https://doi.org/10.1108/SRJ-08-2014-0112

Newman, G. E., Gorlin, M., & Dhar, R. (2014). When going green backfires: How firm intentions shape the evaluation of socially beneficial product enhancements. *Journal of Consumer Research, 41*(3), 823-839. doi:https://doi.org/10.1086/677841

Nidumolu, R., Prahalad, C. K., & Rangaswami, M. R. (2009). Why sustainability is now the key driver of innovation. *Harvard business review, 87*(9), 56-64.

Nivea. (2019). Hudpleie for menn - Nivea. Retrieved from https://www.nivea.no/produkter/menn

NRK. (2019). Skolestreik for klimaet. *NRK*. Retrieved from https://www.nrk.no/nyheter/skolestreik-for-klimaet-1.14409620

Pallant, J. (2010). *SPSS Survival Manual: A step by step guide to data analysis using SPSS* (4th edition ed.): Open University Press.

Pallant, J. (2013). *SPSS Survival Manual* (5th edition ed.): Open University Press.

Peattie, K., & Peattie, S. (2009). Social marketing: A pathway to consumption reduction? *Journal of Business Research, 62*(2), 260-268. doi:https://doi.org/10.1016/j.jbusres.2008.01.033

Sachdeva, S., Jordan, J., & Mazar, N. (2015). Green consumerism: moral motivations to a sustainable future. *Current Opinion in Psychology, 6*, 60-65. doi:https://doi.org/10.1016/j.copsyc.2015.03.029

Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research Methods for Business Students* (7th edition ed.). England: Pearson Education Limited.

Shang, J., & Peloza, J. (2016). Can "real" men consume ethically? How ethical consumption leads to unintended observer inference. . *Journal of business ethics, 139*(1), 129-145. doi:https://doi.org/10.1007/s10551-015-2627-z

Shrum, L., McCarty, J. A., & Lowrey, T. M. (1995). Buyer characteristics of the green consumer and their implications for advertising strategy. *Journal of Advertising, 24*(2), 71-82. doi:https://doi.org/10.1080/00913367.1995.10673477

Sustainable Development Goals, K. P. (2019). Sustainable Development Goals. Retrieved from https://sustainabledevelopment.un.org/?menu=1300

Thunberg, G. (2019). Our House is on Fire Retrieved from https://www.fridaysforfuture.org/greta-speeches#greta_speech_jan25_2019

Tilburg, M. v., Lieven, T., Herrmann, A., & Townsend, C. (2015). Beyond "Pink It and Shrink It" Perceived Product Gender, Aesthetics, and Product Evaluation. *Wiley Online Library*. doi:https://doi.org/10.1002/mar.20789

UnitedNations. (2018). Sustainable Development Goal 12; Ensure sustainable consumption and production patterns. Retrieved from https://sustainabledevelopment.un.org/sdg12

UnitedNations. (2019). Goal 12: Ensure sustainable consumption and production patterns. Retrieved from https://www.un.org/sustainabledevelopment/sustainable-consumption-production/

Walsh, M. F., Page Winterich, K., & Mittal, V. (2010). Do logo redesigns help or hurt your brand? The role of brand commitment. *Journal of Product & Brand Management, 19*(2), 76-84. doi:https://doi.org/10.1108/10610421011033421

Zuckerman, M., & Kuhlman, D. M. (2000). Personality and risk-taking: common bisocial factors. *Journal of personality, 68*(6), 999-1029. doi: https://doi.org/10.1111/1467-6494.00124

Aaker, J. L. (1997). Dimensions of brand personality. *Journal of marketing research, 34*(3), 347-356. doi:https://doi.org/10.1177/002224379703400304

# 10. Appendices

## Appendix A: Pretest Questionnaire

NHH

**Spørreundersøkelse**

Spørreundersøkelsen nedenfor er en del av et eksperiment og utføres i forbindelse med vår masteroppgave ved Norges Handelshøyskole. Undersøkelsen vil ta maksimalt 3 minutter. Alle svar vil bli behandlet anonymt.

Vi ber deg om å lese utsagnene nøye før du svarer.

Tusen takk for din tid!

**Produktets maskulinitet/femininitet**

Se for deg at du skal kjøpe en avløpsrens. På etiketten står utsagnet under presentert. På en skala fra 1-10, i hvilken grad assosierer du utsagnet nedenfor som **feminint** eller **maskulint**? 1 = svært feminint, 10 = svært maskulint. (Med avløpsrens menes et produkt til å åpne tette sluk, tette rør og avløp fra vask, badekar og dusj).

| | Svært feminint | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Svært maskulint |
|---|---|---|---|---|---|---|---|---|---|---|
| "Beskytter naturen" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Omtanke for naturen" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Ny teknologisk formel" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Nøye utvalgte ingredienser" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Resirkulert materiale" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Gjenvunnet materiale" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Gjenvunnet emballasje" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**Produktets maskulinitet/femininitet**

Se for deg at du skal kjøpe en avløpsrens. På etiketten står utsagnet under presentert. På en skala fra 1-10, i hvilken grad oppfatter du utsagnet som **feminint** eller **maskulint**? 1 = svært feminint, 10 = svært maskulint.

| | Svært feminint | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Svært maskulint |
|---|---|---|---|---|---|---|---|---|---|---|
| "Naturlig omtanke" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Beskyttende grønn" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Naturlig beskyttende" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Grønn råskap" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Beskytter naturen" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Naturens beskytter" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**Produktets effektivitet**

Se for deg at du skal kjøpe en avløpsrens. På etiketten står utsagnet under presentert. På en skala fra 1-10, i hvilken grad assosierer du utsagnet nedenfor som **ineffektivt** eller **effektivt**? 1 = svært ineffektivt, 10 = svært effektivt.

| | Svært ineffektivt | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Svært effektivt |
|---|---|---|---|---|---|---|---|---|---|---|
| "Beskytter naturen" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Omtanke for naturen" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Ny teknologisk formel" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Nøye utvalgte ingredienser" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Resirkulert materiale" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Gjenvunnet materiale" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Gjenvunnet emballasje" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**Produktets effektivitet**

Se for deg at du skal kjøpe en avløpsrens. På etiketten står utsagnet under presentert. På en skala fra 1-10, i hvilken grad assosierer du utsagnet nedenfor som **ineffektivt** eller **effektivt**? 1 = svært ineffektivt, 10 = svært effektivt.

| | Svært ineffektivt | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Svært effektivt |
|---|---|---|---|---|---|---|---|---|---|---|
| "Naturlig omtanke" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Beskyttende grønn" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Naturlig beskyttende" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Grønn råskap" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Beskytter naturen" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| "Naturens beskytter" | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Kjønn

- Mann
- Kvinne
- Vil ikke svare

Alder

NHH

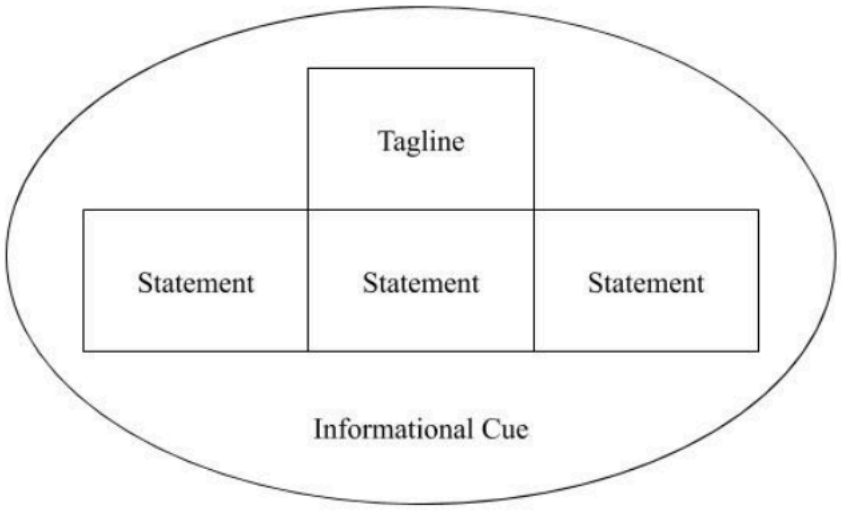
Takk for at du tok deg tid til å ta denne spørreundersøkelsen.
Svaret ditt er registrert.

# Appendix B: Concepts

## Table B.1: Taglines and Statement for Stimuli

| | | | |
|---|---|---|---|
| **Tagline** | | | |
| Feminine tagline: | "Naturlig omtanke" | → | "Natural consideration" |
| Masculine tagline: | "Grønn råskap" | → | "Green rawness" |
| | "Beskytter naturen" | → | "Protecting nature" |
| **Statements** | | | |
| Feminine statements: | "Omtanke for naturen" | → | "Consideration for nature" |
| | "Nøye utvalgte ingredienser" | → | "Carefully chosen ingredients" |
| | "Gjenbrukt materiale" | → | "Reused material" |
| Masculine statements: | "Beskytter naturen" | → | "Protecting nature" |
| | "Ny teknologisk formel" | → | "New technological formula" |
| | "Resirkulert materiale" | → | "Recycled material" |

## Table B.2: Simple Illustration of Manipulation Build Up



# Appendix C: Pretest Results

## Table C.1: Means of the Taglines: Perceived Femininity

| Tagline | N | Minimum | Maximum | Mean | Std. deviation |
|---|---|---|---|---|---|
| Feminine Tagline | 40 | 1 | 5 | 2.800 | 1.2237 |
| Highly Masculine Tagline | 40 | 4 | 10 | 7.175 | 1.58337 |
| Moderately Masculine Tagline | 40 | 2 | 9 | 5.025 | 1.7387 |

1=Very feminine, 10=Very masculine

Note: See Table B.1 (Appendix B) for the taglines translated from Norwegian.

## Table C.2: Means of Informational Cues: Perceived Femininity

| Informational Cue | N | Minimum | Maximum | Mean | Std. deviation |
|---|---|---|---|---|---|
| Feminine Informational Cues | 39 | 7 | 20 | 14.6410 | 3.24838 |
| Highly Masculine Informational Cues | 39 | 17 | 35 | 24.6923 | 4.23117 |
| Moderately Masculine Informational Cues | 39 | 11 | 34 | 22.4872 | 4.51822 |

1=Very feminine, 10=Very masculine

Note: The table shows mean scores of the informational cues, which consist of the tagline and the statements summarized to represent the total communication of the stimuli. See table B.1 (Appendix B).

# Appendix D: Questionnaire


**Spørreundersøkelse**

Denne undersøkelsen er en del av masteroppgaven vår ved Norges Handelshøyskole og vil ta ca. 10 minutter å gjennomføre. Vi setter stor pris på at du tar deg tid til å delta - svarene dine er verdifulle for oss! Du vil motta et sentergavekort på 75 kr som takk for hjelpen etter å ha fullført undersøkelsen. Du vil snart bli presentert for to ulike avløpsåpnere*, og vi kommer til å stille deg noen enkle spørsmål om hva du synes om produktene. Du skal kun åpne den esken du har fått beskjed om å åpne. Dersom du opplever tekniske problemer underveis i undersøkelsen, må du bare ta kontakt. Svarene dine er helt anonyme og alle opplysninger du oppgir vil bli behandlet konfidensielt. Det er frivillig å delta i undersøkelsen, og du kan når som helst trekke samtykket ditt uten å oppgi noen grunn. Dersom du trekker deg vil alle opplysninger om deg bli slettet.

*Med avløpsåpner menes et produkt til å åpne tette sluk, tette rør og avløp fra vask, badekar og dusj.

Dersom du bekrefter at du har lest informasjonen over, og gir samtykke til å frivillig delta i undersøkelsen, velg "ja"

- ○ Ja, jeg ønsker å delta.
- ○ Nei, jeg ønsker ikke å delta.

0% 100%

Åpne boks **C** og ta ut de to avløpsåpnerne. Forestill deg at du skal kjøpe en avløpsåpner og at du skal vurdere de to alternativene foran deg.

*Produktet som er merket med "1" på korken betegnes heretter som "Avløpsåpner 1", og produktet merket med "2" på korken betegnes som "Avløpsåpner 2".*

Produktene er fortsatt under utvikling og kan derfor se noe uferdige ut. **Vi ønsker at du ser nøye på produktene og leser all eventuell tekst. Du må gjerne ta ut produktene og ha dem foran deg gjennom undersøkelsen.** I de neste stegene vil vi stille deg noen spørsmål angående produktene og du velger det alternativet som passer best for deg.

Åpne boksen og trykk på pilen under når du er klar til å starte undersøkelsen.

0% 100%

Bekreft hvilken boks du åpnet nedenfor:

- ○ Boks A
- ○ Boks B
- ○ Boks C

**Kjøpsintensjon**

| | 1 = Svært usannsynlig | 2 | 3 | 4 | 5 | 6 | 7 = Svært sannsynlig |
|---|---|---|---|---|---|---|---|
| Hvor sannsynlig er det at du hadde valgt Avløpsåpner1 i en kjøpssituasjon? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Hvor sannsynlig er det at du hadde valgt Avløpsåpner2 i en kjøpssituasjon? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Hvis du må velge mellom disse to avløpsåpnerne, hvilken ville du valgt?

- ○ Avløpsåpner 1
- ○ Avløpsåpner 2

Skriv med få ord hvorfor du ville ha valgt den avløpsåpneren du valgte i spørsmålet over:

Hvor sannsynlig tror du det er at disse produktene vil bli en suksess på markedet?

| | 1 = Svært usannsynlig | 2 | 3 | 4 | 5 | 6 | 7 = Svært sannsynlig |
|---|---|---|---|---|---|---|---|
| Avløpsåpner 1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Avløpsåpner 2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Tror du det er prisforskjell mellom de to ulike avløpsåpnerne?

- ○ Ja
- ○ Nei

Hvilken avløpsåpner tror du er dyrest?

- ○ Avløpsåpner 1
- ○ Avløpsåpner 2

I hvor stor grad mener du produktene har egenskaper som er listet i tabellene nedenfor?

**Avløpsåpner 1**

| | 1 = I svært liten grad | 2 | 3 | 4 | 5 | 6 | 7 = I svært stor grad |
|---|---|---|---|---|---|---|---|
| I hvor stor grad tror du denne avløpsåpneren er miljøvennlig? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I hvor stor grad er å kjøpe dette produktet er et miljøbevisst valg? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**Avløpsåpner 2**

| | 1 = I svært liten grad | 2 | 3 | 4 | 5 | 6 | 7 = I svært stor grad |
|---|---|---|---|---|---|---|---|
| I hvor stor grad tror du denne avløpsåpneren er miljøvennlig? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I hvor stor grad er å kjøpe dette produktet er et miljøbevisst valg? | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

I hvilken grad oppfatter du disse produktene som feminine?

| | 1 =Ikke feminint i det hele tatt | 2 | 3 | 4 | 5 | 6 | 7 = Svært feminint |
|---|---|---|---|---|---|---|---|
| Avløpsåpner 1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Avløpsåpner 2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

I hvilken grad oppfatter du disse produktene som maskuline?

| | 1 = Ikke maskulin i det hele tatt | 2 | 3 | 4 | 5 | 6 | 7 = Svært maskulin |
|---|---|---|---|---|---|---|---|
| Avløpsåpner 1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Avløpsåpner 2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Tror du det er flest kvinner eller menn som velger Avløpsåpner 1?

- ○ Flest kvinner
- ○ Flest menn
- ○ Ingen forskjell

Tror du det er flest kvinner eller menn som velger Avløpsåpner 2?

- ○ Flest kvinner
- ○ Flest menn
- ○ Ingen forskjell

**Effektivitet**

Hvordan oppfatter du effektiviteten på disse avløpsåpnerne?

| | 1 = Svært ineffektiv | 2 | 3 | 4 | 5 | 6 | 7 = Svært effektiv |
|---|---|---|---|---|---|---|---|
| Avløpsåpner 1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Avløpsåpner 2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Se for deg at du har tette rør på badet og derfor trenger en avløpsåpner. Hvordan vil du vurdere evnen til disse avløpsåpnerene til å åpne de tette rørene?

| | 1 = Svært lav | 2 | 3 | 4 | 5 | 6 | 7 = Svært høy |
|---|---|---|---|---|---|---|---|
| Avløpsåpner 1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Avløpsåpner 2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**Skånsomhet**

Hvordan oppfatter du skånsomheten på disse avløpsåpnerene?

| | 1 = Svært lite skånsom | 2 | 3 | 4 | 5 | 6 | 7 = Svært skånsom |
|---|---|---|---|---|---|---|---|
| Avløpsåpner 1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Avløpsåpner 2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

I hvilken grad er du enig i følgende påstander?

| | 1 = I svært liten grad | 2 | 3 | 4 | 5 | 6 | 7 = I svært stor grad |
|---|---|---|---|---|---|---|---|
| Jeg anser meg selv som en miljøbevisst person | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Det er viktig for meg at produktene jeg kjøper er miljøvennlige | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Jeg ville følt meg skyldig dersom jeg hadde valgt det minst miljøvennlige alternativet | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Jeg oppfatter generelt miljøvennlige produkter som mindre effektive | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Jeg resirkulerer så ofte jeg har muligheten til det | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Jeg oppfatter generelt at miljøvennlige produkter har lavere kvalitet enn ikke-miljøvennlige produkter | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Jeg er villig til å ofre kvalitet til fordel for miljøvennlighet | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

I hvilken grad er følgende punkter viktig for deg når du skal kjøpe en avløpsåpner?

| | 1= I svært liten grad | 2 | 3 | 4 | 5 | 6 | 7= I svært stor grad |
|---|---|---|---|---|---|---|---|
| Pris | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Effektivitet | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Lite skade på rør | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Anbefaling fra andre | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Miljøvennlighet | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Kjønn

- ○ Kvinne
- ○ Mann

Alder

Hva er ditt høyeste nivå av utdanning du har fullført, eller er i gang med å utføre?

- ○ Ungdomskole
- ○ Videregående skole
- ○ Bachelorgrad
- ○ Mastergrad
- ○ Doktorgrad

Hva er din yrkesstatus?

- ○ Student
- ○ Pensjonist
- ○ Yrkesaktiv
- ○ Ikke i jobb

Hva er din årlige inntekt?

- ◯ Mindre enn 250.000 NOK
- ◯ Mellom 250.00 og 500.000 NOK
- ◯ Mellom 500.000 og 750.000 NOK
- ◯ Mellom 750.000 og 1.000.000 NOK
- ◯ Mer enn 1.000.000 NOK

Hvem har hovedansvaret for handling av dagligvarer i husholdningen din?

- ◯ Jeg har hovedsakelig ansvaret
- ◯ En annen har hovedsakelig ansvaret
- ◯ Delt ansvar

**Kjønnsidentitet**

Vi ønsker å vite hvordan du rangerer deg selv når det kommer til maskulinitet og femininitet. Fullfør setningene nedenfor med valgalternativet som passer best for deg.

| | 1 = Svært feminin | 2 | 3 | 4 | 5 | 6 | 7 = Svært maskulin |
|---|---|---|---|---|---|---|---|
| Jeg anser meg selv som... | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |
| Andre vil trolig oppfatte meg som.. | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |

**Praktisk test**

Se for deg at du skal åpne et fullstendig tett avløp. Du skal nå anslå hvor mye avløpsåpner du trenger for å løse opp det tette avløpet. Bruk målebegeret ved siden av og hell oppi så mye du tenker du trenger av produktet fra **Avløpsåpner 2**. Vi ber deg helle oppi tilsvarende mengde du ville brukt i en reell situasjon.

Det har blitt gjort tester i laboratorium på hvor mye som trengs av dette produktet for å åpne et fullstendig tett avløp innen 15 minutter. Vi ønsker at du skal gjette denne mengden. Den som kommer nærmest riktig dosering vinner to kinobilletter. Du vil få muligheten til å legge inn epostadressen din under, og denne vil ikke knyttes til dine svar i spørreundersøkelsen.

Dersom det er noe du lurer på angående oppmålingen, er det bare å ta kontakt. *Til informasjon: 100 ml = 1 dl

På grunn av din helse har vi valgt å bruke en produkterstatter, slik at du slipper å være redd for kjemikalier etc.

Hvor mange ml helte du?

0 50 100 150 200 250 300 350 400 450 500

Mengde i ml

Vil du være med i trekningen av to kinobilletter?
Denne vil ikke knyttes til dine svar på spørreundersøkelsen.

- ◯ Ja
- ◯ Nei

Dine svar er registrert!
Vi takker deg for tiden du har brukt på å svare på denne spørreundersøkelsen.
Ta kontakt med oss for å få utdelt ditt gavekort.

# Appendix E: Descriptive Statistics

## Table E.1: Descriptive Statistics for Dependent Variable, Mediator and Control Variables

| | N | Mean | Std. Dev | Skewness | | Kurtiosis | |
|---|---|---|---|---|---|---|---|
| **Variable** | | | | Statistic | Std. Error | Statistic | Std. Error |
| Purchase Intention | 280 | 5,46 | 1,622 | −1,018 | 0,146 | 0,368 | 0,29 |
| Perceived Environmental Friendliness | 280 | 4,89 | 1,571 | −0,609 | 0,146 | −0,182 | 0,29 |
| Perceived Femininity | 280 | 2,45 | 1,490 | 0,717 | 0,146 | −0,337 | 0,29 |
| Perceived Effectiveness | 280 | 4,50 | 1,339 | 0,024 | 0,146 | −0,309 | 0,29 |
| Perceived Gentleness | 280 | 4,66 | 1,475 | −0,264 | 0,146 | −0,456 | 0,29 |
| Gender | 280 | 1,40 | 0,491 | 0,395 | 0,146 | −1,857 | 0,29 |
| Environmentally Concious | 280 | 4,58 | 1,242 | −0,546 | 0,146 | 0,580 | 0,29 |
| Guilt | 280 | 4,06 | 1,836 | −0,146 | 0,146 | −1,036 | 0,29 |
| Recycle | 280 | 5,41 | 1,595 | −0,959 | 0,146 | 0,112 | 0,29 |
| Quality | 280 | 3,15 | 1,587 | 0,347 | 0,146 | −0,73 | 0,29 |
| Sacrifice | 280 | 3,95 | 1,581 | −0,032 | 0,146 | −0,629 | 0,29 |
| Importance of Price | 279 | 4,32 | 1,652 | −0,222 | 0,146 | −0,662 | 0,291 |
| Importance of Effectiveness | 275 | 5,87 | 1,117 | −1,092 | 0,147 | 1,484 | 0,293 |
| Importance of Gentleness | 276 | 5,90 | 1,183 | −1,234 | 0,147 | 1,820 | 0,292 |
| Importance of Environmental Friendliness | 279 | 4,95 | 1,511 | −0,671 | 0,146 | 0,095 | 0,291 |
| Importance of Recommendation | 275 | 4,93 | 1,538 | −0,647 | 0,147 | −0,045 | 0,293 |

Note: Values in bold are violations of the normality assumption.

## Table E.2: Pairwise Comparisons (I-J) for Descriptive Measurement, One-Way ANOVA

| Variable | Condition (I-J) | Mean Difference (I-J) | Standard Error | Sig. |
|---|---|---|---|---|
| Purchase Intention | Feminine - Highly Masculine | -.050 | .235 | .833 |
| | Feminine - Moderately Masculine | -.356 | .238 | .136 |
| | Highly Masculine - Moderately Masculine | -.306 | .239 | .201 |
| Percieved Greenness | Feminine - Highly Masculine | .329 | .228 | .150 |
| | Feminine - Moderately Masculine | .087 | .230 | .707 |
| | Highly Masculine - Moderately Masculine | -.242 | .232 | .296 |
| Perceived Effectiveness | Feminine - Highly Masculine | -.432* | .193 | .026 |
| | Feminine - Moderately Masculine | -.110 | .195 | .572 |
| | Highly Masculine - Moderately Masculine | .322 | .196 | .102 |
| Perceived Femininity | Feminine - Highly Masculine | .211 | .217 | .331 |
| | Feminine - Moderately Masculine | .194 | .219 | .375 |
| | Highly Masculine - Moderately Masculine | -.017 | .220 | .940 |
| Perceived Gentleness | Feminine - Highly Masculine | .440* | .213 | .039 |
| | Feminine - Moderately Masculine | .024 | .215 | .913 |
| | Highly Masculine - Moderately Masculine | -.417 | .216 | .055 |

Note: Values with * are significant at the .05 level

# Appendix F: Test of Assumptions

## Table F.1: Test for Homogeneity of Variance, One-Way ANOVA

| Variable | Grouping | Levene's test |
|---|---|---|
| Purchase Intention | Degrees of Feminine Communication | .869 |
| Perceived Femininity | Degrees of Feminine Communication | .826 |
| Perceived Greenness | Degrees of Feminine Communication | .141 |
| Perceived Effectiveness | Degrees of Feminine Communication | .994 |
| Perceived Gentleness | Degrees of Feminine Communication | .340 |
| Estimated Amount | Degrees of Feminine Communication | .186 |

Values in bold are violations of the homogenity of variance assumption

# Appendix G: Results - Direct Effects

## Table G.1: One-Way ANOVA

| Dependent Variable | Independent Variable Conditions (I-J) | Condition (I) Mean Score | Condition (I) Std. deviation | Condition (J) Mean Score | Condition (J) Std. deviation | Mean Difference (I-J) | Standard Error |
|---|---|---|---|---|---|---|---|
| Purchase Intention | Feminine - Highly Masculine | 5.33 | 1.614 | 5.38 | 1.653 | -.050 | .235 |
| Purchase Intention | Feminine - Moderately Masculine | 5.33 | 1.614 | 5.69 | 1.591 | -.356 | .238 |
| Purchase Intention | Highly Masculine - Moderately Masculine | 5.38 | 1.653 | 5.69 | 1.591 | -.306 | .239 |

Note: Values in bold are significant at the .05 level

# Appendix H: Results - Mediating Effects

## Table H.1: Simple Mediation Model Analysis

| Independent Variable (X) | Dependent Variable (Y) | Mediator (M) | Total effect (c) Effect | 95% CI (LL, UP) | Direct effect (c') Effect | 95% CI (LL, UP) | Indirect effect (ab) Effect | 95% CI (LL, UP) |
|---|---|---|---|---|---|---|---|---|
| Feminine - Highly Masculine | Purchase Intention | Perceived Effectiveness | .050 | -.418, .517 | −.190 | −.612, .233 | **.239** | .022, .504 |
| Feminine - Moderately Masculine | Purchase Intention | Perceived Effectiveness | .356 | -.108, .820 | .298 | -.122, .717 | .058 | -.144, .271 |
| Highly Masculine - Moderately Masculine | Purchase Intention | Perceived Effectiveness | .306 | -.166, .778 | **.461** | .022, .900 | -.155 | -.357, .029 |

Note: Values in bold are significant at the .05 level

# Appendix I: Results - Moderated Mediation Effects

## Table I.1: Moderated Mediation Model Analysis

| Independent Variable | Dependent Variable | Mediator | Total effect Index | 95% CI (LL, UP) | Direct effect Effect | 95% CI (LL, UP) | Indirect effect Female Effect | Female 95% CI (LL, UP) | Male Effect | Male 95% CI (LL, UP) |
|---|---|---|---|---|---|---|---|---|---|---|
| Feminine - Highly Masculine | Purchase Intention | Perceived Effectiveness | -.1116 | -.5266, .3194 | −.1897 | −.6119, .2326 | **.2931** | .0080, .6119 | .1815 | -.1404, .5713 |
| Feminine - Moderately Masculine | Purchase Intention | Perceived Effectiveness | .0031 | -.3902, .4211 | .2975 | -.1218, .7169 | .0547 | -.2066, .3226 | .0578 | -.2451, .3929 |
| Feminine - Moderately Masculine | Purchase Intention | Perceived Effectiveness | .0999 | -.2746, .4786 | **.4610** | .0217, .9003 | -.2050 | -.4723, .0371 | -.1050 | -.4016, .1765 |

Note: Values in bold are significant at the .05 level

# Appendix J: Additional Findings

## Table J.1: Practical Test of Perceived Effectiveness, One-Way ANOVA

| Independent Variable | Condition (I-J) | Mean Difference (I-J) | Standard Error | Sig |
|---|---|---|---|---|
| Estimated Amount | Feminine - Highly Masculine | **28.523*** | 14.464 | .050 |
| Estimated Amount | Feminine - Moderately Masculine | 13.960 | 14.625 | .341 |
| Estimated Amount | Highly Masculine - Moderately Masculine | -14.562 | 14.700 | .323 |

Note: Values in bold are significant at the .05 level

## Table J.2: Perceived Gentleness, Simple Mediation Model Analysis

| | | | Total effect (c) | | Direct effect (c') | | Indirect effect (ab) | |
|---|---|---|---|---|---|---|---|---|
| **Independent Variable (X)** | **Dependent Variable (Y)** | **Mediator (M)** | Effect | 95% CI (LL, UP) | Effect | 95% CI (LL, UP) | Effect | 95% CI (LL, UP) |
| Feminine - Highly Masculine | Purchase Intention | Perceived Gentleness | .050 | -.418, .517 | .200 | -.249, .649 | **-.151** | -.335, -.001 |
| Feminine - Moderately Masculine | Purchase Intention | Perceived Gentleness | .356 | -.108, .820 | .366 | -.066, .797 | -.010 | -.196, .158 |
| Highly Masculine - Moderately Masculine | Purchase Intention | Perceived Gentleness | .306 | -.166, .778 | .193 | -.270, .657 | .113 | -.005, .265 |

Note: Values in bold are significant at the .05 level