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The green last mile: How does providing a sustainable delivery method affect purchase intentions in B2C e-commerce?

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Liv Nordgarden and Ida Mathisen

Abstract

The thesis highlights an understanding of the green last mile, and how providing a sustainable delivery method affect purchase intentions in B2C e-commerce. The study examined consumers purchase intentions in different treatment conditions where one group had the ability to choose a sustainable delivery method, the other group did not. In addition, the groups were split into four, with only half of the respondents having sustainable products in their shopping bags. Mediating effects potentially explaining the relationship between sustainable delivery method and purchase intentions analyzed was environmental consciousness, inconvenience, anticipated guilt and perceived sense of responsibility, including a possible moderator; sustainability level of products. Our thesis discovered that the ability to choose a sustainable delivery method did not increase purchase intentions. To make home deliveries more sustainable, it might be a necessity to create legislation demanding this effort from online retailers, and not place the responsibility on the end consumer.

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Introduction

The green consumerism trend is growing as consumer awareness towards combating natural resource degradation has been placed on the global agenda (Yeon Kim & Chung, 2011). A consumer demand for environmentally responsible choices has driven market change towards a sustainability focus and expansion of green product categories. Many logistics firms handling the delivery from warehouse to end consumer, also known as the last mile, has embraced this consumer demand, in what is now known as the green last mile. This option ranges from physical delivery in regard to the delivery trucks, to the option of offsetting carbon footprint of the purchase by adding a green delivery method (Bring, 2019).

Procter & Gamble (P&G) defines sustainability as *"ensuring a better quality of life for everyone, now and for generations to come",* and this definition creates an anchor for further sustainable practice discussions throughout our thesis (P&G Sustainability Report, 2010). With the current sense of urgency for businesses to reduce climate impact and also create innovative strategies to compete in sustainable fields, the United Nations Sustainable Development goals, has by many become a guide towards a greener future. The United Nations Sustainable Development goals where written in 2015 as a blueprint for a strategic plan towards creating a more sustainable global future. The report consists of seventeen goals, which are all interconnected, with the objective of being achieved by 2030 (UN, 2019). The objective of this thesis is to develop an understanding of how a firm can use sustainability in their last mile logistics operations, to affect the purchase intentions of consumers within e-commerce.

In early 2020, while investigating this thesis, the World Health Organization declared the Covid-19 virus as a pandemic, with unprecedented impact. Measures like social distancing, quarantine, implementation of working remotely and limiting nonessential travel was implemented worldwide (World health organization, 2020). These measures where not only vital for delaying and assimilating the impact of the virus, they changed shopping habits drastically, and started a process of a new global recession. The World Economic Forum used China as an example of how the coronavirus could be stopped through containments, however, at a significant economic cost, and the economic shock was severe even compared to the 2007-08

financial crisis (World Economic Forum, 2020). With signs of the economic situation is China normalizing, the fear of a second wave of outbreak remains, and currently it is undetermined how and when the world economy will recover (World Economic Forum, 2020). As a result of Covid-19, consumer demand for home deliveries has strongly increased, and the research performed in this thesis on the green last mile logistics operations will, therefore, anticipatorily develop into eminent knowledge for retailers selling goods online to end consumers (Bring, 2020).

Research question

Based on the information provided the following research question is presented: *How does a sustainable logistic "green last mile" affect consumers online purchase intentions?*

Theoretical and managerial contributions

The motivation behind this study of sustainable last mile logistics is the growing interest in green consumerism, when e-commerce is increasingly taking over from brick and mortar retail. The theoretical contribution will deliver an understanding of whether sustainable logistic practices, in particular last mile delivery methods, affects consumers purchase intentions. This understanding will also entail the difference in purchase intentions, when the moderating effect of sustainability level of products is included. Furthermore, the understanding will incorporate how mediators like environmental consciousness, anticipated guilt, inconvenience, and perceived sense of responsibility could have an effect. The managerial contributions will provide online retailers with an understanding of the relevance and the potential importance for the consumer to have the ability to choose a sustainable last mile delivery. Furthermore, with sustainable logistics perceived as a challenge in B2C e-commerce, the research will discuss whether sustainable delivery is an option online retailer's should prioritize (Buldeo Rai, Verlinde & Macharis, 2019).

Theoretical background

Sustainability logistics and the green last mile

Logistics implicates *"the activities to obtain incoming materials and distribute finished products to the proper place, at the desired time, and in the optimal quantities"* (Markley & Davis, 2007, p. 767). The logistic process as a whole consists of raw material sourcing, production, distribution and consumption (Dey, LaGuardia & Srinivasan, 2011). The focus of this research paper will be the sustainability aspect within the last mile, meaning the operations involved in delivering the finished goods from firm to consumer. To ensure that the green last mile of the supply chain do not add to the growing greenhouse gas emission problem, the mode of transportation is becoming an important decision for logistic managers. Furthermore, the role of sustainability within the logistics supply chain is currently deficient of research to comprehend its complete relevance. Extensive research has been performed on the effect of labels and green marketing, meaning marketing giving information about products sustainability, but ignoring other forms of green marketing including the forms of logistics (Cerri, Testa & Rizzi, 2018). For many online retailers the logistics costs rank second to the cost of goods sold, and according to the "International Monetary Fund" logistics costs represents 12 percent of the yearly worldwide gross domestic products (Bin & Chaoyuan, 2005; Ballou, 2004). Furthermore, the last mile logistic operations can account for up to 75 percent of a firm's carbon footprint (The Council of Supply Chain Management Professionals, 2008). Therefore, to identify and eliminate carbon footprint and inefficiencies in a firm's sustainability strategies, the logistics aspect should be in the forefront (Dey, LaGuardia & Srinivasan, 2011). It is no longer enough to build logistics operations with only financial benefits in mind, but the greater focus should be on social responsibility. The rise of the conscious consumer and green consumerism has made adding sustainability logistics into the corporate strategy, an expectation from not only investors, but also stakeholders (Prokesch, 2010). A 2008 survey of CEO's in large third-party logistic online retailers established the top five reasons for introducing sustainability into their logistics strategy, and the assessment revealed the vital aspects to be pressure from customers, the desire to do the right thing, to enhance company image, attract green customers and adhere to competitive pressures (Lieb & Lieb, 2010). Online retailers are now using sustainability as a way to differentiate their offers from competitors

and improve their current services. Due to the monetary and environmental aspects of a firm's logistics, exploring how to enhance sustainability of the last mile service is a key area for further research.

Green and sustainable logistics (G&SL) has grown to ease the environmental impact of supply chain management. Ren, Hu, Dong, Chen & Chen (2019) explains how research regarding the triple bottom line has been performed thoroughly, and the reasoning behind managers involving green logistics decisions within their bottom line is decided by their personal environmental attitude, subjective norms and perceived behavioral control. Currently the strategies to build green and sustainable logistics have focused on public investment, and imposing taxes on carbon footprint (Ren, Hu, Dong, Chen & Chen, 2019). However, Ren, Hu, Dong, Chen & Chen discovered gaps in the research on how to create global collaboration, dynamic relationships focusing on sustainability goals, and how green logistics innovation would be beneficial for G&SL promotion (Ren, Hu, Dong, Chen & Chen, 2019). Previous innovative solutions by the logistics industry include co-creating value with consumer participation using automated package stations. Furthermore, consumer cognition, attitudes and effects has been examined. For a consumer to perceive value in the last mile logistics co-creation, the critical aspects are offering enjoyable, assuring and secure service experiences (Ren, Hu, Dong, Chen & Chen, 2019).

There are several ways a firm can focus on creating a sustainable green last mile option for their consumers. The global logistics company UPS has been focusing on sustainable logistics in implemented programs including; carbon neutral shipping, alternative fuel delivery vehicles, reducing noise and carbon from air fleets, and attaining a fuel-efficient delivery by leveraging the delivery network (Dey, LaGuardia & Srinivasan, 2011). FedEx is working with the Environmental Defense fund to improve sustainability for the standard delivery trucks, and the firm has an all hybrid station in New York, and another 330 hybrid electric delivery vehicles. Using hybrid electric trucks reduces greenhouse gas emissions by 25% (Dey, LaGuardia & Srinivasan, 2011). According to DHL consumers increasingly consider sustainability during their purchase decisions. Therefore, DHL provides

green optimization services, and a climate neutral service to offset the unavoidable last mile emissions. This includes their GoGreen initiative, which DHL promote as a competitive factor of their business (DHL GoGreen solutions, 2020). Another firm which focuses on reducing environmental footprint is the Norwegian organization Chooose, which is a platform for a positive climate movement. Chooose functions as a monthly subscription for both individuals and online retailers to select plans in order to offset CO_2 footprint. The money for the subscription goes directly into CO_2 reducing projects in developing countries, replacing oil and gas with renewable energy, all through programs verified by the United Nations (Chooose, 2020a). Chooose is also one of the first providers in the world of carbon removal. This means producing biochar, a solid and stable form of carbon, planting trees and making sustainably grown wood (Chooose, 2020a). The projects by Chooose correspond with the UN sustainability goals of providing clean power, clean water, improve sanitary conditions and job creation. Chooose is therefore, a method of making it easier for firms to reduce not only their own, but also their customers climate footprint, and the Chooose has partners like Tise, Santander, and Telia (Chooose, 2020b). Chooose is used as an integrated part of e-commerce transactions, manufacturing and transportation, and the partnered firms give their customers the option to carbon balance out their shopping cart when making a purchase (Chooose, 2020b). Chooose, however, provides a different way of contributing positively to the climate movement, than UPS, FedEx and DHL, as they are not involved physically in the last mile delivery.

Sustainability effect on purchase decisions

With online retailers increasingly offering sustainable choices to their consumers, it is beneficial to build an understanding of how sustainability affects a consumer's purchase decision. Carrington, Neville & Whitwell (2010) studied the insights on how the intentions-behavior gap influence ethical purchase decisions. In the study performed, the researchers had ethically concerned consumers visualize a situation and respond corresponding to how the consumer would act in an actual purchase situation in-store, and out-of-store. Carrington, Neville & Whitwell (2010) used intention as the mediating effect between the consumers attitude and behavior, as a holistic framework that would represent real life situations. The study concluded that regardless of an ethical conscious mind and purchase intention, the consumer

rarely placed ethical products in their shopping carts (Carrington, Neville & Whitwell, 2010). However, the intentions-behavior gap within ethical consumerism is badly understood, as researchers fail to realize that intentions are not necessarily a proxy for actual purchase behavior (Carrington, Neville & Whitwell, 2010). Furthermore, Moroz & Polkowski (2016) studied ethical attitudes and behavior especially concerning generation Y's (millennials) online purchase habits, and their findings revealed that the consumer was willing to pay more for sustainable options. However, in the context of their research on the green last mile issue of parcel machines, the consumers did not view this option as sustainable. The study showed that financial benefits and convenience was more important for gen Y's delivery method decision, than ecological measures. The delivery points in the study would reduce greenhouse gas emissions, however this was not a persuading factor for the consumers (Moroz & Polkowski, 2016) Additionally, Young, Hwang, McDonald & Oates (2009) studied the ethical purchase process within the attitude-behavior gap, and they found 30% of consumers are worried about environmental issues, however, the research showed that this attitude is not reflected into actual behavior. Acting "green" is revealed as something that the modern day, busy consumer does not prioritize (Young, Hwang, McDonald & Oates, 2009).

Sustainability and online consumer behavior

Sustainable development requires both the supply and demand side to improve current practices. Corporate social responsibility (CSR) has been thoroughly discussed within the supply side, however the social responsibility of the consumer has until now been less prominent (Buerke, Straatmann, Lin-Hi & Müller, 2017). Getting an understanding of how a firm can predict or encourage sustainable consumer behavior is fundamental in regard to our thesis research. Societal responsibility entails the direct drive for sustainability as a community, and personal responsible consumer behavior focuses on the psychology behind choices like striving for self-actualization and personal satisfaction (Buerke et al., 2017). Extensive research has discovered that consumer behavior within sustainability also depends on social context, external costs and situational constraints (Buerke et al., 2017). Choi, Cervellon & Wernerfelt (2012) researched how knowledge content is affecting green fashion, discovering a more objective view and expertise among

consumers and online communities. Furthermore, when focusing on the sustainable supply chain there has been a switch from a focus on green issues towards fashion, and now consumers are more interested in knowing how fashion can be more sustainable rather than how sustainable clothing can be fashion. In the early stages sustainable fashion was considered to be an oxymoron, however, the expectation is now that by focusing on the sustainability aspect in the supply chain over the actual clothing, consumers are more likely to show an environmental concern (Choi, Cervellon & Wernerfelt, 2012). Further, Castaneda, Carmelita, Rodilinia & Banjo (2015) studied the effect of social capital within communities on adoption of environmentally sustainable behavior. The mediating effects of the study was environmental knowledge, pro-environmental attitudes and perceived eco-capability (Castaneda, Carmelita, Rodilinia & Banjo, 2015). The study found support for environmental knowledge and attitude to have a positive effect on eco-capability, which again shapes eco-behaviour (Castaneda, Carmelita, Rodilinia & Banjo (2015). Furthermore, social capital should be used as a resource channel to encourage environmentally responsible consumer behavior, and an interesting extension of the research would be to examine how social capital impact context-specific consumers, such as different delivery methods (Castaneda, Carmelita, Rodilinia & Banjo (2015). Khare & Pandey (2017) investigated the role of green self-identity, green peer influence, service and product quality on consumer´s perceived trust and transaction risk. The study measured consumers attitude towards environmental issues, aiming to see if these components had a significant correlation, in this case towards organic food retailers (Khare & Pandey, 2017). Khare & Panley´s (2017) study resulted in a positive effect of green peer influence on perceived transaction risk, however, a negative influence of green self-identity. This means that a social pressure to choose green options is likely to influence consumers purchase decisions, however, the same pressure will damage their own green self-image as they might perceive the pressure is put on them by their peers believing they are not consciously doing enough for the environment.

Sustainability considerations and developmental knowledge are vital aspects towards retailers supply chain (Wiese, Kellner, Lietke, Toporowski & Zielke, 2012). Provision of green information by fashion retailers is an attempt to educate consumers, increase awareness and stimulate purchase decisions (Shen, Zheng, Chow & Chow, 2014). The last mile delivery has a great impact on sustainability

measures; however, it is costly to organize for logistics service providers, and are considered to be a challenge in B2C e-commerce (Buldeo Rai, Verlinde & Macharis, 2019). Research indicate that one third of consumers have a neutral attitude towards sustainability, meaning consumers have either a low interest or knowledge surrounding the topic. Therefore, it is useful to investigate how sustainability practices affect purchase intentions (Buldeo Rai, Verlinde & Macharis, 2019). Existing retailers benefit from adding online channels because it provides consumers with an overview of products, increase convenience and reduces risk, however, it does not create a large difference in the overall variety of retailers (Zhu, Goraya & Cai, 2018). The increased trend towards e-commerce is forcing online retailers to design and redesign their distribution network infrastructure, and new internet technologies has made online stores both entertaining and convenient (Ma, 2017). For a consumer to make a sustainable choice, in addition it exists a need to trust the source or the institution providing the option. However, consumers are not commonly able to verify sustainability directly, and must therefore rely on claims from the source (Atkinson & Rosenthal, 2014). Furthermore, an enlarged delivery time and free shipping increases customers perceived ambiguity and risk, and the impact of each separate dimension of logistics service quality on customer experiences such as purchase intentions, has yet to be investigated (Ma, 2017).

A research study by Theotokis & Managanari (2014) studied the effectiveness of choice architecture and the different default policies in engaging consumer green behavior. This research is applicable due to the encouragement of consumers to engage in sustainable behavior, such as choosing a sustainable delivery method. However, the research did not investigate what happens when consumers need to sacrifice more in-service quality and service if they decide to switch to a greener option (Theotokis & Managanari, 2014). Mangiaracina, Marchet, Perotti & Tumino (2015) have performed a literature review of B2C e-commerce environmental sustainability from a logistics perspective, suggesting clothing, consumer electronics and similar sectors to be researched further. According to this review there is a lack of environmental implications of B2C e-commerce from a logistics perspective (Mangiaracina, et al, 2015). Nilssen, Bick & Abratt (2019) suggest further research to use a wider sample of retailers and markets, suggesting online retail, and comparing the importance of sustainability to actual consumption

patterns. With omni-channel retailers where consumers have the choice to make a purchase in-store, or make a purchase in their online store, the consumer has the options of getting the package delivered to the store or choose a home delivery. By further focusing on omni-retailers in our research, we intend to gather information which can be generalizable for online retailers regardless of being a solely online store, or also offering brick and mortar locations.

Green purchase intentions within e-commerce

To understand how consumers, make their online purchase decisions, it is vital to have an underlying understanding of consumer behavior. This foundation will increase a firm's efficiency and effectivity (Horner & Swarbrooke, 2016). The primary motivation for consumers to shop online is convenience, which includes eliminating the struggle of transportation, parking, lines and salespeople. Further reasons include the opportunity to discover better prices, availability, variety and saving time. Kim, Kim & Park (2010) identified results suggesting that consumers with high involvement often shop where they can obtain more information, while consumers with low involvement is more influenced by entertainment (Kim, Kim & Park, 2010). Further, Joshi & Rahman (2015) have reviewed inconsistency within the attitude-behavior gap in the context of green purchasing. The various reasons behind inconsistent behavior is individual factors such as *emotions, habits, perceived consumer effectiveness, perceived behavioral control, values and personal norms, trust and knowledge* and situational factors such as *price, product availability, norms, product attributes and quality, store related attributes, brand image, eco labels (*Joshi & Rahman, 2015). Of all the potential factors affecting consumer green purchase behavior is consumers' environmental concern and product functional attributes suggested to be the two main determinants (Joshi & Rahman, 2015).

D´Souza, Taghian & Khosla (2007) investigated how price and quality affect consumers´ green purchase behavior. The study consists of variables such as incorporated knowledge, beliefs, demographic profiles and situations, all indicating that consumers are inclined to want higher priced green products, than compromise on product quality (D´Souza, Taghian & Khosla, 2007). Furthermore, the purchase intention is also affected by customer´s personal characteristics (D´Souza, Taghian & Khosla, 2007). A study by Mostafa (2007) investigated the influence of

consumers ecological knowledge, concern and attitude on gender differences in green purchase behavior. The study confirms different factors affecting purchase behavior, however, most interesting women appear to be less aware of environmental issues, while men is having the biggest concern toward the environment. Furthermore, a potential bias for consumers response is social desirability. From a consumer perspective, a study by Ko, Hwang & Kim (2013) explored the relationship between green marketing, corporate image, and purchase intentions. Corporate image, product image and corporate reputation have a direct effect, however, social responsibility only have an indirect effect (Ko, Hwang & Kim, 2013). A research study by Mohd Suki (2016) found results indicating that green brand knowledge is a significant determinant of green product purchase intention, causing consumers to develop positive awareness toward green products. However, consumer attitude toward green brands does not seem to be affected by green brand knowledge (Mohd Suki, 2016). Worth noticing for further research suggestion is additional contributing factors beyond position, attitude and knowledge (Mohd Suki, 2016). Based on the consumers characteristics, we are interested further, in researching how these factors can influence the significance of choosing a sustainable delivery method.

Research model and statement of hypotheses

To summarize the research question and provide hypotheses, the following section provides a research framework to clarify the relationship and constructs.

The effect of the ability to choose a sustainable delivery

Products differentiation through a sustainable last mile delivery method will give the firm the ability to facilitate a choice for the consumer to make an online purchase in a more environmentally friendly manner (Jaffry, Pickering, Ghulam, Whitmarsh & Wattage, 2004). Traditionally there has not existed an option to choose a sustainable delivery method, rather the focus has been on the delivery time and cost. According to Bring, a Norwegian logistics firm, almost half of Norwegian consumers are asking for information on how online retail stores are contributing towards sustainability and environmentalism. Furthermore, 3/10 of Bring's consumers say they are conscious of sustainability when choosing a delivery method as stated in their e-commerce report (Bring, 2019). Consumers under 40

years are the generation leading this development, they are expected to be demanding when it comes to having the choice of sustainability. Furthermore, as a way of differentiating a firm from the competition, highlighting the environmental offers is imperative. According to Bring, one of the methods to improve the firm's value chain and adhere to consumer demand by giving the consumers the option of reducing environmental impact is expected to be critical for an online retailer to keep up with demand (Bring, 2019). Additionally, researching the impact of each separate dimension of a logistics service like how to increase purchase intentions, is valuable to investigate further (Ma, 2017). Based on the assumption that consumers will be affected when exposed to a sustainable delivery method, we find reason to believe the consumers purchase intention could increase. This is due to the sustainable delivery option which the consumer does not necessarily expect, however, when received is viewed as a positive add on. We define the ability to choose a sustainable delivery method as the additional option including a climate neutral delivery alternative, to regular delivery. Therefore, the following hypothesis was developed:

> H_1: Ability to choose a sustainable delivery method will positively affect consumers purchase intentions.

Mediating effect of inconvenience, responsibility, guilt and environmental consciousness

Ramayah & Mohamad (2010) studied predictors for green purchase decisions, and the researchers found inconvenience to be one of the main barriers to sustainable participation. Even though consumers are actively involved in individual consequences, the perceived inconvenience prevents the consumer from making sustainable purchase choices (Ramayah & Mohamad, 2010). Based on the assumption that the ability to choose sustainable delivery method will positively affect purchase intentions, inconvenience may be an explanation of why the consumers do not prefer to act ethically. Socially responsible behavior for the collective good is not just potentially costly for the individual, but also perceived by the consumer as inconvenient (Cojuharenco, Cornelissen & Karelaia, 2016). For the sake of this research, we define inconvenience as negatively perceived risk, waiting time, price, availability and variety options. With this definition, the assumption is that consumers are less willing to choose a sustainable delivery option

when making an online purchase. In contrast, when a climate neutral option is not offered consumers will not feel the inconvenience, as they do not have an alternative delivery option to compare their environmental impact with. Inconvenience has previously been included in the logistics green last mile research relating to charging electric vehicles (EV), and using smart lockers, however, it has not been used as a mediating effect to the best of our knowledge (Yuen, Wang, Ma & Wong, 2019; Dixon, Andersen, Bell & Træholt, 2020). Therefore, in our research perceived inconvenience by the consumer will act as a mediator in the relationship between the ability to choose sustainable delivery method and purchase intentions:

> H_2: The relationship between the ability to choose a sustainable delivery method and purchase intentions is mediated by inconvenience.

In our research the ability to choose a sustainable delivery method is indented to increase purchase intentions, and further, consumers perceived sense of responsibility may be an explanation for this theory. Perceived sense of responsibility is defined as the consumer's perception of taking personal responsibility for the environmental cost or consequence of the products and services they consume. Consumer demand for environmentally responsible options has created a market change towards expansion of green product categories (Bring, 2019). Further, social responsibility of the consumer has until recently taken up less space than corporate social responsibility practices (Buerke, Straatmann, Lin-Hi, & Müller, 2017; Buerke et al., 2017). Dagher & Itani (2014) investigated four potential factors influencing green purchase behavior, one of them being perceived environmental responsibility. This factor was found to be positive for green purchase behavior (Dagher & Itani, 2014). Additionally, Ramayah, Lee & Mohamad (2010) investigated individual consequences related to intentions, and we argue that feeling responsible for how your choice of delivery method affects the environment, can affect purchase intentions. By this, there is reason to believe that when a consumer is being exposed to a climate neutral delivery the perceived sense of responsibility when performing an online purchase will increase. When not having the ability to choose a sustainable delivery, the consumer is not aware that a delivery method has the possibility of being environmentally friendly, and therefore, the responsibility is not felt in the same manner. Further, when having the ability to perform an environmentally friendly action, and take responsibility as

a consumer, the consumer is more likely to make a purchase. Keeping previous research in mind, we want to investigate perceived sense of responsibility as a mediator in the relationship between the ability to choose sustainable delivery method and purchase intentions.

> H_3: The relationship between the ability to choose a sustainable delivery method and purchase intentions is mediated by perceived sense of responsibility.

With ethical consumerism on the rise, the consumers feeling of guilt has the potential to develop when purchasing products and services. Cotte et al. (2005) define anticipated guilt as *"guilt that arises from contemplating a potential violation of one's own standards".* Anticipated guilt is of interest in the marketing context because of *"the possibility to avoid the unpleasantness creates a potential effect on the behavior"* (Mörk, 2018). Based on previous research we believe having the option to choose a sustainable delivery method can decrease the feeling of guilt, or the thoughts of feeling guilty when making an online purchase. Guilt is found to affect one´s self-regulation, furthermore, affecting consumers in the pro-environmental context, and it has previously been stated that anticipated guilt in fact can predict ethical behaviors (Hartikka & Rubio Labat, 2016). Previous research has acknowledged that consumers avoid behaviors making them feel guilty, however, the effects of anticipated guilt has not been thoroughly investigated (Elgaaied, 2012). The thought behind anticipated guilt is that by guiding the consumer, and offering a climate neutral delivery, the online retailer makes it easier for the consumer to feel morally satisfaction due to their personal actions and lessen their negative environmental impact. Furthermore, guilt is an emotion on the scale of personal congruence, where guilt is experienced when a consumer has acted incongruent in regard to their personal goals (Antonetti & Maklan, 2014). Guilt is by this measure an explanatory mechanism as to why a consumer might chose a sustainable option (Theotokis & Manganari, 2015). We, therefore, investigate anticipated guilt as a potential mediator in the relationship between the ability to choose sustainable delivery method and purchase intentions.

H_4: The relationship between the ability to choose a sustainable delivery method and purchase intentions is mediated by anticipated guilt.

Sustainable consumption entails several attitudinal and behavioral dimensions. Lee (2009) refers to environmental concern as *"an affective attribute that can represent a person´s worries, compassion, likes and dislikes about the environment"*. The norm activation model suggests that altruistic helping behavior occur more likely when individuals are aware of harmful consequences and feel responsible for them, or in other words, act environmentally conscious (Lee, 2009). However, focusing on anticipating feelings, only includes individuals with an already existing environmental concern. Little research has been performed on the interconnectedness between existing level of environmental concern, the information given and the perceived barriers to sustainable choices. Investigating environmental consciousness as a mediating effect is, therefore, valuable to add to previous literature. Environmental consciousness is different from perceived sense of responsibility, in the way that either a consumer has a high or low environmental consciousness. This can still be affected by being exposed to sustainable alternatives. Yeon Kim & Chung's (2011) applied past experiences as a predictor and perceived behavioral control as a moderator, discovering that environmental consciousness and appearing conscious positively influence purchase intentions (Yeon Kim & Chung, 2011). By this offering a sustainable delivery method can make the consumers reminded of their consciousness and then get an increase of purchase intentions. On the other hand, by not being exposed to the sustainable delivery method the consumer is not reminded of the possibility of a sustainable action. Based on how strong the manipulation is, environmental consciousness could have different effects. If offering a sustainable delivery method is the only manipulation consumers are exposed to, it may not be enough in order to change their environmental consciousness. There is still reason to believe the effect exist, however, to a matter of what degree. Therefore, it is used as a mediating effect.

H_5: The relationship between the ability to choose a sustainable delivery method and purchase intentions is mediated by environmental consciousness.

Moderating effect of products

A study by Hofenk, van Birgelen, Bloemer & Semeijn (2019) address how, when, and under which conditions retailers´ sustainability efforts translate into positive consumer responses. Sustainability efforts are valuable, however, there is a research gap regarding the underlying mechanisms and the conditions under which the consumer responses take place, and furthermore, this gap occurs especially in the online retail sector relevant to products offerings. The different sustainability level of products being offered is intended to have an effect on the relationship between delivery method and purchase intentions. This is due to consumers feeling relieved when they at least have to option to choose a climate neutral delivery, to compensate for a non-sustainable product. There is also reason to believe that consumers valuing purchasing environmentally friendly products can develop an increased purchase intention when there is a sustainable delivery option. In our research we utilize this factor as moderating effect. Other gaps discovered for further research is data into why consumers buy green products, and how they perceive green products related to the decision-making process (Narula & Desore, 2016). Furthermore, perceived social force to perform a certain behavior can affect the relationship between purchase intentions and sustainable products, and previous research discovered that attitude towards sustainable products was positively related to purchase intentions (Kumar, Manrai & Manrai, 2017). In our research, we argue that adding a sustainable delivery method to a non-sustainable product, can potentially provide a spillover effect and, therefore, increase purchase intentions to compensate for non-sustainable products (Friedl & Springer, 2011).

> H_6: The relationship between the ability to choose a sustainable delivery method and purchase intentions is moderated by products being non-sustainable.

Based on the assumption that the sustainability level of products can have an effect on the relationship between delivery method and purchase intention, there is reason to believe that products also can moderate the relationship between delivery method and inconvenience. If the consumer is offered a sustainable delivery method, they will feel differently based on the products being sustainable or unsustainable. You will feel more inconvenienced when you have no possibility to make up for your own actions shopping online (Rajamma, Paswan & Hossain, 2009). When only

having the choice of non-sustainable delivery options and the product also is non-sustainable, the consumer will feel inconvenienced by not being able to perform sustainable action - in contrast, when having a climate neutral delivery option and/or the product being sustainable you will feel less inconvenienced. The same concept applies to perceived sense of responsibility. When being exposed to a climate neutral delivery, the consumer may be reminded of their responsibility as a consumer, and feel more obligated to choose a sustainable delivery (Simonson, 1992). This effect will be stronger when the products are non-sustainable. Furthermore, with anticipated guilt when having a sustainable option, the consumer is able to do something to compensate for shopping online (Peloza, White, & Shang, 2013). The consumer could feel a sense of anticipated guilt if products are non-sustainable in addition to the delivery not being climate neutral. Lastly, sustainability level of products can affect the relationship between delivery method and consumers environmental consciousness in a mechanism where sustainable products can make the consumer feel more aware of sustainable actions and, therefore, feel more positive towards make an online purchase.

H_7: The relationship between the ability to choose a sustainable delivery method and inconvenience is moderated by sustainability level of products.

H_8: The relationship between the ability to choose a sustainable delivery method and perceived sense of responsibility is moderated by sustainability level of products.

H_9: The relationship between the ability to choose a sustainable delivery method and guilt is moderated by sustainability level of products.

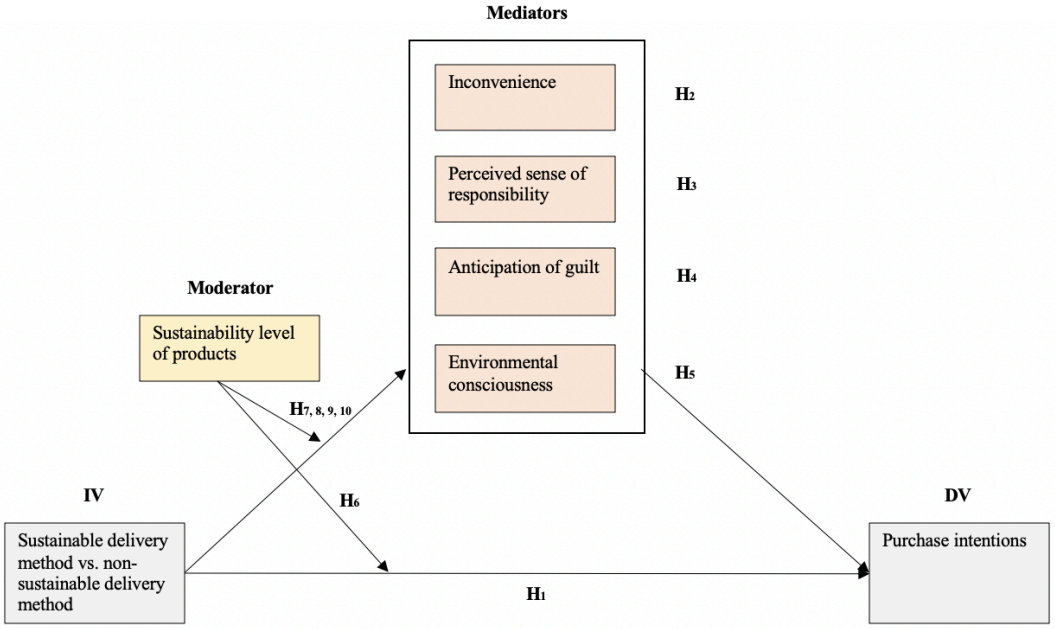
H_{10}: The relationship between the ability to choose a sustainable delivery method and environmental consciousness is moderated by sustainability level of products.

Research framework

Based on these hypotheses, our research framework was developed to present the relationship between the independent variable and the dependent variable. The framework argues for sustainable B2C delivery methods, and how it might

influence purchase intention, within e-commerce. Furthermore, the research was based on the mediating effect of consumers environmentally consciousness level, inconvenience, perceived sense of responsibility and anticipated guilt, and to which extend the sustainability level of products as a moderator effect these relationships.

Figure 1: *Research framework*



Research methodology

Research design

This study functions as an experimental research design with an objective of exploring an online scenario to provide insight into consumers purchase intentions within e-commerce. An experimental research strategy was designed to demonstrate a cause-and-effect relationship between two variables (Gravetter & Forzano, 2015). The research model consisted of one dependent variable; online purchase intentions and one independent variable; delivery method. Furthermore, to be explored, was sustainability level of products as a moderator and environmental consciousness, inconvenience, perceived sense of responsibility, and anticipated guilt as mediators. A between-subject design was conducted aiming to compare scores from separate treatment conditions and groups of respondents.

Manipulations

The variables manipulated in the online experiment was whether the respondents had the ability to choose a sustainable delivery method or not, moderated by the sustainability level of the products. The study utilized a 2 (ability to choose sustainable delivery method (yes vs. no)) x2 (sustainable products vs. non-sustainable products) in-between factorial design and all participants was randomly assigned to one of the four treatment conditions, responding to questions regarding the different mediators: environmental consciousness, inconvenience, perceived sense of responsibility and anticipated guilt.

Data collection

The respondents participating in the study had to be 18 years old or above in order to proceed in the survey, as consumers need to be 18 years old to make an online purchase. Additionally, the survey was constructed in English, to not generate boundaries in regard to country of distribution. The study aimed for 200-300 respondents, to in order to generalize the findings and strengthen the validity (Malhotra, 2010). The online experiment was conducted through Qualtrics and distributed online on Facebook, LinkedIn and other social media or content sharing platforms in an attempt to reach as many respondents as possible. Before presenting the final experiment to the consumers, several pretests were distributed to a test group (n= 28). This was to investigate if the manipulations operated as planned, furthermore, to make conditional corrections. In this manner, we were able to minimize respondents' biases, such as discussing the experiment externally. The final experimental survey was finalized when enough respondents in regard to our intentions was obtained.

The questionnaire

All survey questions used in the study was extracted from previous quantitative surveys with articles published in academic journals. The survey was based on the statements used in these articles, however, the statements have been modified when needed, due to misunderstandings in the pretest. Purchase intention statements such as *"I would consider purchasing these clothes"* and *"I plan on buying these clothes"* was taken from Barber, Kuo, Bishop & Goodman Jr (2012) and Reichelt, Sievert, & Jacob (2014). Questions intended to measure hypothesis 1 and 10 followed the randomized 2x2 in-between factorial design, with the aim of

comparing scores of the four separate groups. The groups were based on the option of having the ability to choose a sustainable delivery method or not, and the option of purchasing sustainable products or not. Purchase intention was expected to be higher, if the consumer was given the option to choose a sustainable delivery method, relating to hypothesis 1. Furthermore, the respondents presented the sustainable products are expected to be more likely to choose the sustainable delivery method, related to hypothesis 10. Questions regarding the mediators was developed as statements, where the respondents replied on a 5-point Likert scale of disagree to agree. This indicates that the respondents state their disagreement or agreement with the statements provided. These data points will be used as interval data, and in further analysis each item can be assigned a numerical score. Using negative and positive statements controls for respondents who tend to click on either side of the scale, without actually reading the statements. The benefits of using a Likert scale is to create statements with an understandability, similar construction and functionality, and for them to be easily distributed as an online survey (Malhotra, 2010). The respondents were also given a definition of environmental sustainability as *"the rate of renewable resource harvest, pollution creation, and nonrenewable resource depletion which can be continued indefinitely without causing harm"* (Hapres, 2020). Then statements in the manner of *"I think that people should have a good environmental awareness for sustainability"*, and *"I make an effort to avoid products or services that cause environmental damage"* was provided (Eren & Yaqub, 2015; Cojuharenco, Cornelissen & Karelaia, 2016). The survey statements related to the factor of inconvenience used as a mediator was inspired by the articles by Ramayah, Lee, & Mohamad (2010) and Lee, Choi, & Koo (2017). Inconvenience was in current literature discovered to be one of the main barriers to sustainable participation, and therefore, including this measurement could potentially explore how inconvenience can prevent a consumer from acting sustainable (Ramayah & Mohamad, 2010). Statements like *"I find buying sustainable products difficult",* and *"I feel inconvenience by buying sustainable products"* was used to measure this mediator (Ramayah, Lee, & Mohamad, 2010; Lee, Choi, & Koo, 2017). Perceived sense of responsibility was measured through statements adapted from Lee (2008) and anticipated guilt from Elgaaied (2012) and Hartikka & Labat (2016). This mediator was expected to affect purchase intention because if a consumer perceives sustainability to be their personal responsibility, this can increase the likelihood of "readiness to be green"

(Tan, Johnstone & Yang, 2016). The statements of perceived sense of responsibility included measures regarding the respondent's consumption habits and beliefs surrounding recycling. Furthermore, the statements regarding anticipated guilt entailed how much guilt the respondents would feel if they did not recycle or buy sustainable products on a regular basis. To measure hypothesis 8, survey statements was adapted from Eren & Yaqub (2015) and Cojuharenco, Cornelissen & Karelaia (2016) to measure environmental consciousness. These statements were chosen as we expect the positive effect of the ability to choose a sustainable delivery method will be stronger for an environmental conscious consumer.

Pretest

As the survey in Qualtrics was developed, a pretest was performed to uncover discrepant conditions and discover if the survey measures the elements intended (Hunt, Sparkman Jr & Wilcox, 1982). The pretest was distributed to 28 respondents during different stages, to minimize response error, misunderstandings in regard to statements, to evaluate the nature of the data to be expected from the final survey, and further potential errors (Malhotra, 2010). The first pretest was distributed to investigate whether the response would vary based on the different products displayed in the survey scenario. At first, two different purchase scenarios were tested at the same time, half of the respondents received an Apple Watch, the other half a t-shirt. Secondly, Oakley Sunglasses replaced the Apple Watch, before shoes replaced the sunglasses. The Apple Watch was expensive and had stronger brand preferences than the other products, furthermore, Oakley Sunglasses was too much of a distinctive product. Shoes was a better fit in regard to t-shirts, however, in that case is did not makes sense to differentiate the products. In the end, the two different scenarios were replaced, with only one scenario including t-shirts, divided into four different treatment conditions. Moving forward with only one scenario was easier and the products were kept neutral. The one aspect differentiating the t-shirts was a label with whether the clothes were sustainable or not. The t-shirts had no brand logo or other possible brand associations in an attempt to avoid the respondents making a choice based on their personal preferences towards a certain brand. A fictional brand could be an alternative solution, however, was not conducted in this study. The t-shirts were a no label product, without brand associations or preferences. Furthermore, the clothes were intended to act as a frequent purchase possibility in order to use products in the scenario the respondents could easily

relate to purchasing without further considerations. Other corrections performed after the final pretest was to remove the option to go back in the survey while answering, as this did not function while including randomization to rule out order effect. We also included forced responses, a view progress function, an attention check, and reformulated statements and definitions. Through performing several pretests, we were able to optimize the survey, before the final distribution.

Procedure

Sample

Table 1: *Descriptive Statistics*

Descriptive Statistics

	N	Mean	Std. Deviation
Con_1	283	4.40	.879
Con_2	283	3.61	1.097
Con_3	283	3.54	1.098
Con_4	283	4.23	.961
Con_5	283	4.53	.822
Con_6	283	3.60	1.412
Inc_1	283	2.52	1.089
Inc_2	283	3.53	1.192
Inc_3	283	2.43	1.101
Inc_4	283	3.87	.970
Inc_5	283	3.33	1.112
Res_1	283	4.57	.849
Res_2	283	4.10	1.094
Res_3	283	3.31	1.574
Res_4	283	4.52	.931
Res_5	283	4.34	1.003
Res_6	283	4.40	1.085
Gui_1	283	3.45	1.429
Gui_2	283	3.44	1.396
Gui_3	283	3.47	1.384
Gui_4	283	2.17	1.125
Gui_5	283	2.19	1.188
Gui_6	283	2.26	1.168
Valid N (listwise)	283		

We received a total of 575 respondents; however, many respondents did not answer all the statements or failed the attention-check, leading to missing values (Gooner, Morgan, & Perreault Jr, 2011). Due to these respondents we had 309 respondents, and further, we concluded with 283 respondents after removing failed respondents on attention check errors. First, a description of variables was created (see appendix A), then frequency table calculations was conducted to obtain descriptives of the

dataset and determine how many respondents were surveyed in each group (Janssens, 2008). Out of 283 respondents, 96 identified as male (33.9%), 186 as female (65.7%), and one as other (0.4%). Furthermore, the largest age bracket with 154 (54.4%) of the respondents where in age group 1: 18-27, and the second largest age bracket was group 2: 28-37 (21.2%). The sample was generally young (M=1.87, SD=1.172). 125 (44.2%) where students, which can reasonably explain the young sample, and the 52 respondents (18.4%) and 32 respondents (11.3%) with an income level of respectively 0-175.000 NOK and 176.000 - 299.000 NOK. The number of respondents which were students, was almost equal to the 133 of the respondents (47%) who work full time. An interesting observation was that the majority of respondents' salary was between 300.000 - 599.999, closely followed by 600.000 - 999.999. It is feasible to assume that the justification for this result was how the survey was distributed; a convenience sampling on various social media platforms, academic networks and several survey groups.

Measurement properties

Table 2: *KMO and Bartlett's test*

KMO and Barlett´s Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.842
Bartlett´s test of Sphericity	Approx. Chi-Square	3539.701
	df	351
	Sig.	.000

In order to assess the validity and reliability of the measurement scales, firstly we performed the KMO measure of sampling adequacy and Bartlett's test of sphericity. These tests measure the meaningfulness of performing a factor analysis (Sarabia, 1996). The p-value for Bartlett's test of sphericity was <.001, which allows us to reject the H_0 hypothesis, all correlations are not 0 and a factor analysis was evaluated as appropriate. The KMO MSA value qualifies variables´ correlation as strong with a value >.50 preferred, meaning the measure of sampling adequacy of .847 is defines as good. Furthermore, as a factor analysis was appropriate, a principal component analysis (see appendix B) was performed. Following Kaiser´s rule, all 6 variables should be kept, with a cumulative explained proportion of the variance of 61.41%. A scree plot analysis performed shows an unclear "elbow", indicating keeping the number of components before the "elbow" in the curve,

therefore, also 6 components (Franke, Reisinger & Hoppe, 2009). The Kaiser criterion and the scree plot performed gave an indication of which components to use further, however we expected 5 underlying dimensions from the beginning, explaining 56.75% of the total variance. Further investigation into the meaning of factor loadings explain the reason for only keeping 5 factors.

A confirmatory factor analysis was performed to determine the correlation between variables and exploring whether they supported our predetermined decision of which variables belonged to the predefined factors. The necessity of performing a confirmatory analysis can be discussed when using variables already established and confirmed by previous research, however, when adopting variables in a relationships with different combinations, it may be beneficial to perform the confirmatory factor analysis to strengthen the data (John & Reve, 1982). The survey probed subjective opinions, and we evaluated the results keeping in mind that consumers can be aware of sustainability and perform environmentally friendly measures, due to social pressures or money back schemes, without necessarily ethically caring. Factors that did not correlate was deleted because this was an indication as to what degree the statements measured the same construct, also known as testing for convergent validity.

Table 3: *Pattern Matrix*

Pattern Matrix

	Components					
	1	2	3	4	5	6
Gui_1	**.840**	.269	-.024	.022	.001	.004
Gui_2	**.821**	.283	-.016	.031	.000	.010
Gui_3	**.858**	.199	-.001	-.004	.002	.021
Gui_4	.242	**.792**	.061	-.104	.137	-.019
Gui_5	.162	**.822**	.031	-.069	.059	-.048
Gui_6	.172	**.798**	.054	-.022	.085	-.105
Pur_1	-.035	-.046	**.848**	.024	.157	-.055
Pur_2	.051	.027	**.863**	-.048	-.080	.017
Pur_3	-.053	.075	**.891**	.012	-.050	.006
Inc_1	-.002	.006	.124	**.661**	-.022	.180
Inc_2	.100	-.149	-.121	**.626**	.082	-.234
Inc_3	-.051	.132	-.010	**.633**	-.096	.138
Inc_4	-.068	.406	-.022	.126	.375	-.124
Inc_5	.024	-.078	-.030	**.695**	.047	-.105
Con_1	.152	-.214	.014	-.018	**.617**	-.064
Con_2	-.034	.172	-.002	.002	**.809**	.075
Con_3	-.004	.167	.028	.012	**.768**	.023
Con_4	.098	-.164	.055	-.128	.491	-.333
Con_5	.497	-.336	.059	-.163	.359	-.013
Con_6	.133	.206	-.002	-.024	.247	-.319
Res_1	.610	-.315	-.013	.054	.118	-.079
Res_2	.356	.014	.025	-.011	-.080	-.348
Res_3	.114	.231	-.106	-.013	-.064	**-.642**
Res_4	.027	-.043	.254	.115	-.013	**-.645**
Res_5	-.008	.051	-.040	-.051	.105	**-.688**
Res_6	-.091	-.038	-.053	-.042	.017	**-.793**

Extraction Method: Principal Component Analysis.

The main contribution of the factor analysis was splitting anticipated guilt into two separate factors, guilt and organic cotton, because the variables was found to measure different subjects. The statements including organic cotton and recycling in this context can be limiting and might not fully explain the factor anticipated guilt appropriately. Divergent validity was controlled for in an attempt to deleted terms that loaded on another construct than intended, which was what happened with anticipated guilt, ending in two factors. The variables for environmental consciousness was also loading notably different as expected when we presented statements with different subjects in regard to sustainability. As briefly mentioned previously, a consumer can be ethically concerned for the environment, however, it does not mean the consumers engages in all aspect of environmental conservation. Therefore, it is meaningful that the factor loadings do not correlate to all aspects, however, they should still be included to potentially be a part of explaining the essence.

Table 4: *Factors and Cronbach's Alpha*

Pattern Matrix		
	Factor	Cronbach´s Alpha
Guilt		.949
Gui_1	.840	
Gui_2	.821	
Gui_3	.858	
Intentions		.848
Pur_1	.848	
Pur_2	.863	
Pur_3	.891	
Inconvenience		.565
Inc_1	.661	
Inc_2	.626	
Inc_3	.633	
Inc_5	.695	
Consciousness		.710
Con_1	.617	
Con_2	.809	
Con_3	.768	
Responsibility		.679
Res_3	-.642	
Res_4	-.645	
Res_5	-.688	
Res_6	-.793	
Organic Cotton		
Gui_3	.792	
Gui_4	.822	
Gui_5	.798	

After the execution of a confirmatory factor analysis we are left with five factors, namely anticipated guilt, purchase intentions, inconvenience, environmental consciousness and perceived sense of responsibility. In order to examine how reliable, the constructed factors are, Cronbach Alpha was used as a measure to illustrate how well the factor satisfied the demand of reliability. Both guilt and purchase intentions had a good Cronbach Alpha's (>.80) of .949 and .848 respectively. Environmental consciousness and perceived sense of responsibility had .710 and .679 which is acceptable (>.60-.70). Inconvenience had a Cronbach Alpha of .565 which was lower than recommended which is higher than .60, however, we continued with inconvenience as a factor recognizing that the statements may not be strongly related to each other (Tavakol & Dennick, 2011). A low Cronbach Alpha can indicate few numbers of statements within the factor, poor inter-relatedness between items or too heterogeneous constructs, signifying that the results could malfunction (Tavakol & Dennick, 2011).

Manipulation check

Table 5: *Manipulation check of products*

Descriptives

Manipulation Check: Products

	N	Mean	Std. Deviation
Non-sustianable	134	2.80	1.095
Sustainable	149	3.12	1.059
Total	283	2.97	1.086

a. Product = Sustainability Level of Product

ANOVA

Manipulation Check: Products

	Sum of Squares	df	Mean Square	F	Sig.
Between groups	7.329	1	7.329	6.329	.012
Within groups	325.385	281	1.158		
Total	332.714	282			

a. Sproduct = Sustainability Level of Product

The last question *"On a scale of 1-5 (non-sustainable to sustainable), how sustainable do you think the clothes in your shopping basket at the beginning was?"* was used as a manipulation check; whether the manipulated treatment conditions worked. Running a manipulation check of the sustainability level of products through an ANOVA analysis, we discovered that the respondents in the treatment condition with sustainable clothing option had a mean of 3.12, and the respondents who received the non-sustainable clothing option had a mean of 2.80. The model

was statistically significant with a p-value= .01. This signified that our manipulation check with this treatment group worked, and that the respondents understood the experimental survey question, believing that the clothes labeled with "organic cotton" was more sustainable, than the clothes without.

Results

Hypothesis 1 is tested through a ANOVA in an attempt to analyze the sustainability level of products and delivery method offered as separate variables, before testing the interaction between them. Due to our theoretical framework layout, a simplification of a regression analysis through the model estimation program PROCESS, an add-on to SPSS was used for further analysis (Hayes & Rockwood, 2017). A mediation analysis was used to test the hypotheses and understand the x effect (deliver method) on y (purchase intentions) with a mediating effect of M and with W, as a moderator. The mediators and moderator in our research framework, was tested through model 8 in PROCESS. The mediators are environmental consciousness, inconvenience, perceived sense of responsibility and anticipated guilt, all measured in separate analyses.

Analysis of variance

Table 6: *ANOVA*

Between-subjects factors

		Value label	N
Delivery method	.00	Offered	132
	1.00	Not offered	151
Product	.00	Sustainable	134
	1.00	Not sustainable	149

Descriptive Statistics

Dependent Variable: Purchase Intentions

Delivery method	Product	Mean	Std. Deviation	N
Not offered	Not sustainable	2.9731	1.26793	62
	Sustainable	3.1714	1.05675	70
	Total	3.0783	1.16046	132
Offred	Not sustainable	3.2037	1.27888	72
	Sustainable	2.2743	1.16546	79
	Total	3.2406	1.21726	151
Total	Not sustainable	3.0970	1.27427	134
	Sustainable	3.2260	1.11317	149
	Total	3.1649	1.19177	283

Tests of Between-Subjects Effects

Dependent Variable: Purchase Intentions

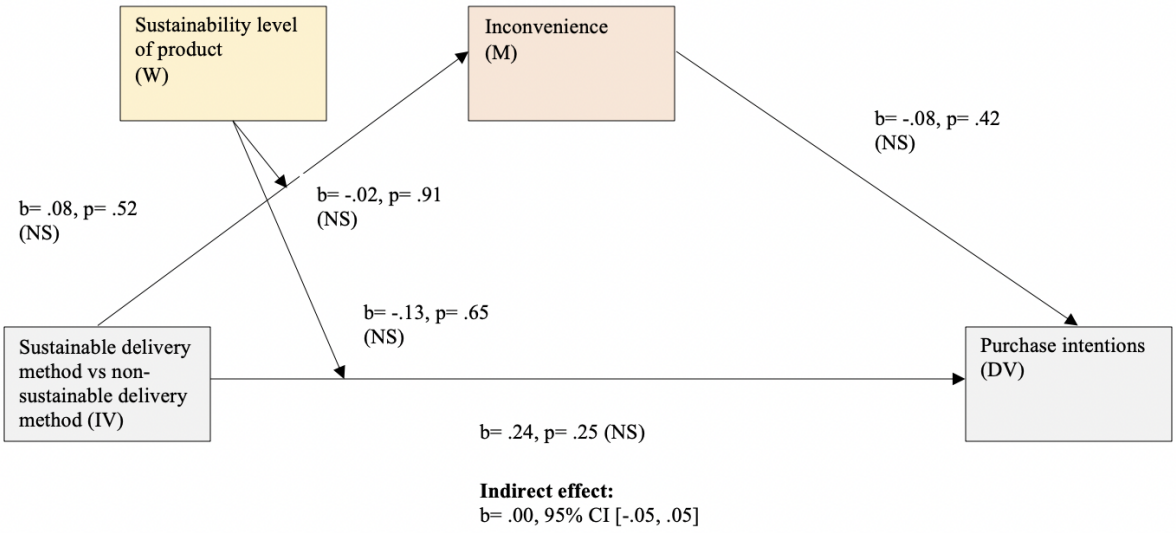
Scource	Mean Square	Sig.
Corrected Model	1.112	.505
Intercept	2797.096	.000
Delivery method	1.952	.243
Product	1.269	.346
Delivery method * Product	.287	.654
Error	1.424	
Total		
Corrected Total		

a. R Squared = .008 (Adjusted R Squared = -.002)

A univariate ANOVA was performed to investigate to which degree the results were statistically significant or if they were attributed to coincidence (Janssens, 2008). The aim was to measure the effect of sustainability level of products (sustainable vs. non sustainable) and delivery method offered (a sustainable delivery methods offered vs. non sustainable delivery methods offered). We created dummy variables of the four treatment conditions (see appendix C) and performed a general linear model, finding no significant results. Hence, we concluded that delivery method, products and the difference between the them do not have an effect on purchase intentions, indicating that we can reject hypothesis 1 and hypothesis 6. The results also indicated that only 8 of 151 respondents had chosen a climate neutral delivery, which again confirms the indication of no statistically significant results for hypothesis 1 or hypothesis 6, both are therefore rejected.

Mediation by inconvenience

Figure 2: *Mediation effect by inconvenience (see appendix D)*

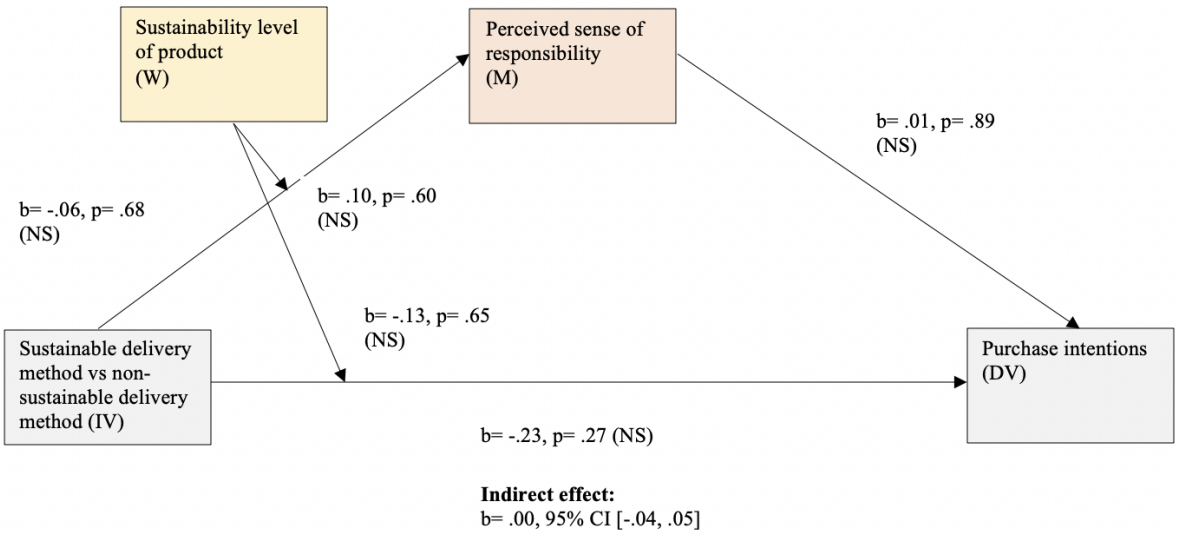


Sustainability level of products was not moderating the relationship between delivery method and inconvenience, due to the insignificant interaction (b=-.02, p= .91). Sustainability level of products was also not moderating the relationship between delivery method and purchase intentions (b= .24, p=.25). There was neither a significant direct effect of delivery method on inconvenience (b= .08 p= .52), or on purchase intentions (b= .24 p= .25), also no effect of inconvenience on purchase intentions (b= -.08, p= .42). The test of the conditional direct effect(s) does not show statistically significant that the effect of delivery method increase as the scale for sustainability level of products increase. For the conditional indirect effect(s), the

moderated mediation was not significant due to the bootstrap confidence interval consisting of the number 0 (b= .00, 95% CI [-.05, .05]). Therefore, hypothesis 2 and 7 was rejected.

Mediation by perceived sense of responsibility

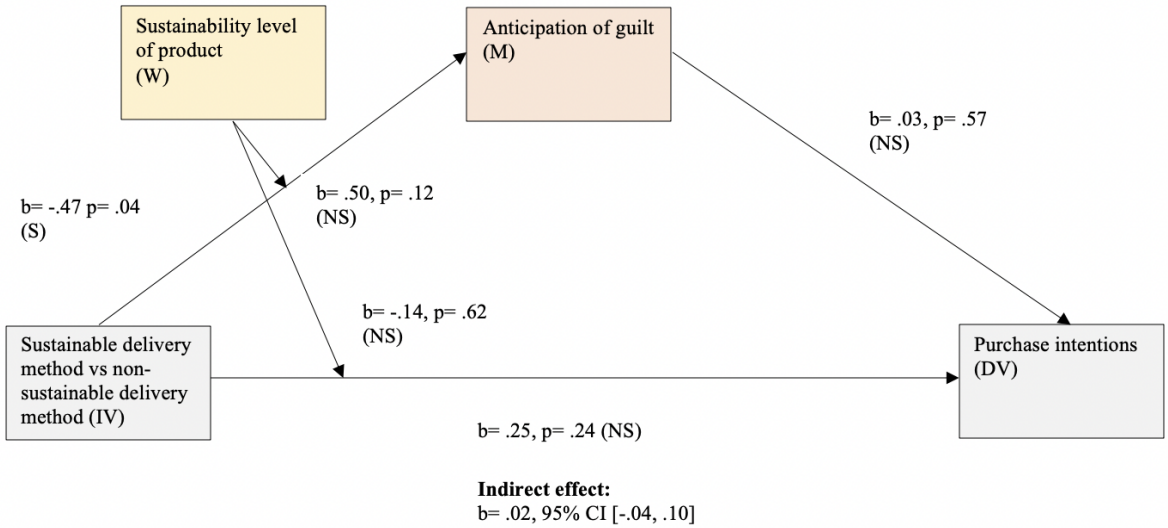
Figure 3: *Moderating effect of perceived sense of responsibility (see appendix E)*



No significant direct effect of delivery method on perceived sense of responsibility is shown(b= -.06, p= .68), neither on purchase intentions (b= .23, p= .27). Furthermore, not significant effect on perceived sense of responsibility on purchase intentions either (b= .01, p= .89). Sustainability level of products was not moderating the relationship between delivery method and perceived sense of responsibility, due to the insignificant interaction (b= .10, p= .60). Furthermore, sustainability level of products was not moderating the relationship between delivery method and purchase intentions (b= -.13, p= .65). When testing for the conditional direct effect(s) for delivery method on purchase intentions with sustainability level of products as moderator, also no impact was shown. The same applies for conditional indirect effect(s). A not significant interaction effect was shown by b = .00, 95% CI [-.04, .05], indicating that the relationship between delivery method and purchase intentions, and the relationship between perceived sense of responsibility and purchase intentions was not moderated by sustainability level of products. Hypothesis 3 and 8 was, therefore, rejected.

Mediation by anticipated guilt

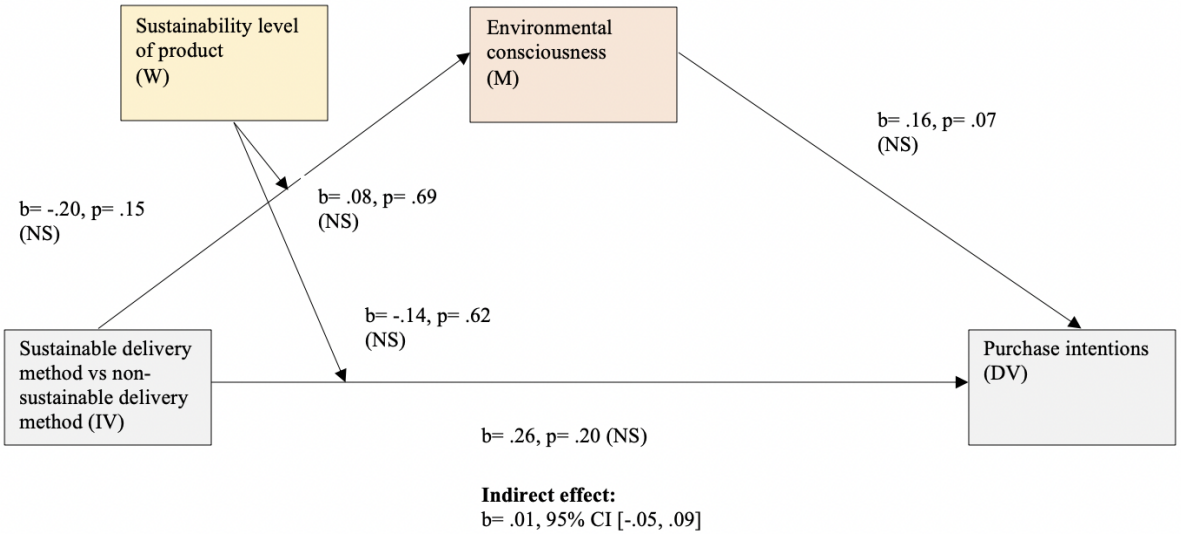
Figure 4: *Mediation effect of anticipated guilt (see appendix F)*



Sustainability level of products was not moderating the relationship between delivery method and anticipated guilt, due to the insignificant interaction (b= .50, p= .12). Sustainability level of products was, furthermore, not moderating the relationship between delivery method and purchase intentions (b= -.14, p= .62). There was neither a significant direct effect of delivery method on purchase intentions (b= .25, p= .24), nor on anticipated guilt on purchase intentions (b= .03, p= .57). The conditional direct effect(s) for delivery method on purchase intentions with sustainability level of products as moderator was not significant. For any value of sustainability level of products, there was no impact of purchase intentions. The conditional indirect effect(s), the moderated mediation was neither significant, as b = .02, 95% CI [-.04, .10]. However, the direct effect of delivery method on anticipated guilt was however significant (b= -.47, p= .04). Hypothesis 4 and 9 was rejected.

Mediation by environmental consciousness

Figure 5: *Mediation effect by environmental consciousness (see appendix G)*



The analysis revealed that delivery method does not show a statistically significant prediction of environmental consciousness (b= −.20, p = .15). Delivery method was slightly predicting purchase intentions when environmental consciousness was included in the model, however, the results was not statistically significant (b= .26, p=.20); environmental consciousness do neither predict purchase intentions (b= .16, p= .07). A positive b for environmental consciousness indicates that as environmental consciousness increase, purchase intention increase, however the results are not significant. Furthermore, the total effect of delivery method on purchase intentions, when the mediator was not present was b= .16, p= .25, however, the results are again not statistically significant. The indirect effect of delivery method on purchase intentions was also not significant due to b= .01, 95% CI [-.05, .09]. When testing for the conditional direct effect(s) for delivery method on purchase intentions at values of the moderator, sustainability level of products, showed no impact. For the conditional indirect effect(s), the moderated mediation was not significant. Hypothesis 5 and 10 is therefore rejected.

Discussion

The Norwegian logistics firm Bring has stated that 3/10 consumers say they are conscious of sustainability when choosing a delivery method, and furthermore, almost half of Norwegian consumers ask for information on how e-commerce is contributing towards sustainability. On this basis our thesis research was created to

provide valuable insights into the current knowledge (Bring, 2019). Critical aspects of a valuable delivery method is offering an enjoyable, assuring and secure service, and building on this, Ma (2017) stated that the separate dimensions of logistics service quality, such as purchase intention has not previously been tested (Ma, 2017; Ren, Hu, Dong, Chen & Chen, 2019). The theoretical background, along with the use of the United Nations Sustainable Development goals created a framework for our belief in the value in this research. Furthermore, the Covid-19 pandemic aggregated the importance of research on how home deliveries options impact purchase intentions. Worth noticing was the respondent's agreement that people should have a good environmental awareness for sustainability, however, this did not translate into purchase intention. This could be due to the previous research discovering that financial benefits and convenience is more important for consumers than sustainability (Moroz & Polkowski, 2016). The main discovery from our research was that having the ability to choose a sustainable delivery method, did not increase purchase intentions. There was not any difference between the group who got the option to choose sustainability, and the group who did not get the option towards purchase intention. The results indicate that when environmental consciousness was included in the model, the model was still not significant. This means that even though the theory states the consumer values sustainability and actively asks for information regarding sustainability within e-commerce, when theory meets reality, the consumer might not be willing to make the necessary adjustments to be able to act sustainable when it comes to delivery methods. This can potentially be due to the perceived financial risk or time aspect, with sustainable delivery often offered at a higher cost, and with a longer delivery time (PwC, 2018). However, it can also be the case that the thesis manipulation and operationalization did not behave as planned.

Moroz & Polkowski (2016) investigated generation Y's (millennials) online purchase habits, and their findings revealed that the younger demographic consumer was willing to pay more for sustainable options. However, though a large number of our respondents where in this millennial demographic, our results did not correspond with Moroz & Polkowski. This could be due to sustainable products and sustainable services, like delivery methods, not performing similarly. Furthermore, previous research has stated that even though consumers are willing to pay a higher price for sustainability, they do not want to compromise on product

quality (D´Souza, Taghian & Khosla, 2007). Additionally, a sustainable delivery option, as a service, might not be viewed by the consumer as increasing the feature of quality. In our survey, the sustainable delivery method was offered at a higher price, and this could have reduced the interest. We also argued adding a sustainable delivery method to non-sustainable products, could potentially provide a spillover effect and, therefore, increase purchase intentions to compensate for non-sustainable products. Our results discovered that even if respondents viewed the products in the scenario as sustainable, it did not spill over into purchase intentions. Therefore, our expectations did not translate into our findings, as the respondents were not significantly more likely to choose the sustainable products option. Furthermore, we expected from previous research that inconvenience would function as a barrier towards green purchase decisions, however, this mediator did not show any effect. Furthermore, we anticipated that the respondents would find buying sustainable products difficult, however, the respondents did not seem to find this troublesome. As an afterthought we believe the reason behind this is the controversy behind choosing organic cotton as a label for sustainability, and that the respondents did not necessarily view organic cotton as sustainable. In theory while consumers state they are interested in executing sustainable choices, when it comes down to paying more for a sustainable service, it is not viewed as valuable. Along these lines, the research also showed that the consumers preferred the "free" delivery option, which gets the products shipped to the store, rather than pay for a regular home delivery.

Green nudges are often implemented by governments, but can also be used by institutions and organizations, like the option by DHL to use their GoGreen solutions or paying an additional fee to offset your carbon footprint with Chooose. Additionally, for a factor to be considered a green nudge, it must fundamentally modify a consumer behavior (Schubert, 2017). Green nudges have been critiqued for being exploitative and manipulative, however, it is often neutralized by claiming the green nudges are for the greater wellbeing of the environment. By harnessing or responding to sustainable biases, in a transparent manner, green nudges are a tool to promote positive environmental action. Online retailers can, therefore, benefit from using green nudging in an attempt to guide the consumers consideration sets in regard to sustainable choices (Schubert, 2017). Furthermore, our research showed that the respondents believed it was equally the government's responsibility

to implement sustainable choices, as their own. This likely decrease personal environmentally friendly actions. Guilt was found in previous research to predict ethical behaviors; however, we discovered a research gap in the effects of anticipated guilt. We, therefore, decided to include this mediator in our research. After the analysis anticipated guilt did not display a statistically significant impact of this factor on purchase intention. This could either be due to the belief that they are already making enough personal efforts, or that they do not, in fact, value environmental protection.

With 97% of climate scientist agreeing that humans are causing global warming and climate change, governments and organizations should focus on educating the average consumer on habitual everyday decisions (Nasa, 2020). A perceived sense of responsibility has been used by previous research as a positive factor for influencing green purchase behavior, however, this factor did not affect our research significantly. We, therefore, want to argue for the responsibility of the government to create stricter legislations, and enlighten the consumers as to how to act more sustainable in their personal lives. These messages should preferably be negatively framed, as this is found to be a more effective method of motivating consumers (Amatulli, De Angelis, Peluso, Soscia & Guido, 2019). Our research discovered that when it came down to the intention of choosing a sustainable delivery method, there were only 8 respondents out of 151 who made this additional effort. This shows that sustainable delivery measures are not a priority for the respondents. It can be argued that shopping online as an activity is valued as a positive experience, with the intention of personal enjoyment and sustainability is, therefore, not on the consumers agenda (Kim, Fiore & Lee 2007). Therefore, facilitating the sustainable logistics transition for the end consumer to make the choice as straightforward and comprehensible as possible can be a valuable investment. In the end this is not intending to increase purchase intentions, but rather to build a sustainable brand image. Furthermore, e-commerce in essence is not a sustainable process, and as much as 1 out of 2 products sold online at retailers like Zalando and Boozt are returned as these online platforms offer favorable return policies (Retailmagasinet, 2020). The result of these returns is a waste of resources through a complex logistics journey. In actuality, by switching online shopping with brick and mortar stores, environmental pollution is cut by 7%. We conclude our research discovering a lack of significance in our sustainability measures, as a

compelling discovery for future research. To make home deliveries more sustainable, it might be a necessity to create legislation demanding this effort from online retailers, and not place the responsibility on the end consumer.

Theoretical contribution

In our theoretical background we discussed the growing interest in green consumerism, within e-commerce, and the purpose behind our study was to contribute to the previous research building an understanding behind how sustainable delivery methods influence purchase intentions. The intentions behavior gap has previously been used as an explanation as to why consumers might state they care about an ethical cause, however, it was not translated into action in our research. Our findings were similar to Carrington, Neville & Whitwell (2010) who states that regardless of environmental consciousness and purchase intention, the consumer rarely places ethical products in their shopping carts. Furthermore, our results support Hwang, McDonald & Oates (2009) in their conclusion within the attitude-behavior gap, that though 30% of consumers are worried about environmental issues, it is not reflected into actual behavior. The majority of research performed on sustainability and purchase behavior is tested in regard to products, and it is likely that using a service like delivery methods can change the sustainability behavior results. Furthermore, previous studies showed that a pro-environmental attitude, could shape eco-behavior (Castaneda, Carmelita, Rodilinia & Banjo, 2015). In our survey it was indisputable that the respondents preferred the "pick up in store" delivery option, which was free, over regular or sustainable delivery. Furthermore, anticipated guilt was included as a mediator as it has been used previously as a tool used to persuade consumer to towards making ethical choices (Antonetti & Maklan, 2014). Our findings discovered that anticipated guilt, however, did not significantly impact purchase decisions. Further, previous research has exhibited perceived sense of responsibility to be positive towards green purchase behavior (Dagher & Itani, 2014; Tan, Johnstone & Yang, 2016). Perceived sense of responsibility in our findings, did in fact, not significantly impact the consumers purchase decisions. Additionally, studies have argued for the usefulness of further investigation of how sustainable practices affect purchase intentions (Buldeo Rai, Verlinde & Macharis, 2019). The purpose would be to explore the different consumers sustainability needs depending on the situation, however as stated by Young, Hwang, McDonald & Oates (2009), acting green is currently not

an objective the busy consumer prioritizes. Our research performed in this thesis has contributed including several questions and options to build future research.

Managerial implications

Organizing logistics services is considered to be a challenge in B2C e-commerce, and with the discovery that the respondents did not value the option of a sustainable delivery, it is not a valuable priority by online retailers in regard to increasing purchase intentions (Buldeo Rai, Verlinde & Macharis, 2019). However, due to the monetary and environmental aspects of an online retailer's logistics, exploring how to enhance sustainability of the last mile has been seen as a key area in future research. Our research was intended to discover how an online retailer can use the option of a sustainable delivery methods as a measure to increase purchase intentions. However, through analysis it was shown that purchase intentions were not affected when the option of a sustainable delivery method was included. Online retailers are currently using sustainability to differentiate their products and services from competitors, however, our research found that this differentiation did not translate into purchase intentions. Facilitating a transition towards a greener identity as an online retailer might currently not be valued enough by the average consumer to make a financial difference, however, it could be argued that with increased consumerism and environmentalism, simplifying and organizing the transition as an online retailer might be a method of getting ahead of their competitors. In the future when green consumerism translates financially, the firm will already have facilitated their transition, and will be able to offer the best sustainable solutions to the consumer as a first mover. Furthermore, online retailers need to act carefully when giving the sole responsibility of acting sustainable to the consumer, as it might negatively influence the consumers green self-identity, and the consumer could perceive the online retailer as stating the consumers are not consciously doing enough for the environment, and further, that they are putting the environmental blame on the individual consumers (Khare & Panley, 2017)

One third of consumers have a neutral attitude or low knowledge of the environmental impact of B2C delivery methods, and it might be necessary for online retailers to create knowledge around this sustainability measure, so the consumer can actively engage (Buldeo Rai, Verlinde & Macharis, 2019). The increased trend towards e-commerce is forcing online retailers to design and

redesign their distribution network infrastructure, online retailers has prioritized making entertaining and convenient (Ma, 2017). However, choosing sustainable options often include having to sacrifice in-service quality. In online purchase habits of generation Y, previous studies have indicated that they are willing to pay more for sustainable options. However, the previous research was performed with sustainable products, and our research discovered that the respondents was not willing to engage in the financial risk to pay more for a sustainable service. Further, our findings revealed that that the respondents were not willing to sacrifice "pick up in store FREE" or a more cost-effective delivery, over a sustainable delivery method (Theotokis & Managanari, 2014). An interesting finding is that the respondents preferred "pick up in store FREE" when choosing this option invests time and effort into the action, over the financial cost of delivery. Previous studies have discovered significant results in regards to consumers wanting to pay a higher price for green products in order to not compromise on product quality, however, there are no significant results in our study indicating that the consumer is willing to pay more for a sustainable delivery method (Moroz & Polkowski, 2016; D´Souza, Taghian & Khosla, 2007).

Limitations and suggestions for further research

As with any study, our research included limitations. By using an experiential approach with different treatment conditions, several limitations were discovered during the analysis, offering suggestions for further research. Our research did not discover any significance contrasted to existing theories, and this raises the challenge of how future research possibly can reconcile these differences, or rather if our research should be built further. When using a scenario-based approach, the external validity is threatened. Even if the different treatment conditions are constructed as realistic as possible, the conditions are nonetheless simplified versions of reality. Our different conditions excluded brand names or logos in order to avoid answers based on brand preferences. Brand preference in this context is the bias a consumer can hold in regard to a certain brand, over other brands in their consideration set. This bias often results in a higher purchase intention towards the favored brand (Chang & Liu, 2009). Labelling has previously been used to provide consumers with clear and easy-to-understand information and have been used to encourage a purchase (Findling, Werth, Musicus, Bragg, Graham & Roberto, 2018). In order to increase external validity, further research could control for

different labels to demonstrate sustainability, or other categories. The effect of only displaying the products on a woman could have influenced the respondent's answers regarding purchase intentions, due to the high interest of gender role portrayal in advertising (Plakoyiannaki & Zotos 2009). Furthemore, the option of choosing a sustainable delivery method might not have been prevalent enough in the scenario, and the respondents might not have paid enough attention towards the sustainable delivery option.

In our treatment conditions aspect of the survey, one of the delivery options was "pick up in store FREE". This option received feedback as being not specific enough, meaning the respondents might have chosen a different delivery method if the store was subjectively too far away from their location. Furthermore, certain respondents did not pay enough attention to their virtual shopping bags in the experimental part of the survey, and this impacted the rest of their survey answers. We believe a potential reason we did not discover any significant findings could be the social context and situational constraints of our framework. It is interesting for further research to investigate the impact, if the web page used in the scenario was either an authentic web store or a complete fictional web store. Furthermore, one of the statements in regard to the construct of perceived sense of responsibility asked if the respondents felt a responsibility towards conserving paper, or to go paperless. This statement received feedback that it was perceived as two constructs in one variable, and the answers might, therefore, not be valid. In addition, another limitation could be how our survey statements was posed, how the construct was used together, and if the statements were negatively or positively loaded. This could have constructed a halo effect. Even though the statements were gathered from previous research using the same factors, when they are used in a new setting, they might be interpreted differently. Additionally, the statements might not measure the factor they were originally intending. Further suggestions are expanding the use of manipulation checks and determine the effectiveness in a better manner. Our manipulation check included how sustainable consumers believed the t-shirt in their virtual shopping bag were, as we wanted to measure the impact of sustainability level of products on purchase intentions. A potential improvement could be to counterbalance the manipulation check, where half of the respondents receives the scenario before the purchase intentions statements (dependent variable) and the other half opposite. Other possibilities are using groups of simulations and not

sending out a digital survey. In addition, supplementary manipulation checks for delivery methods should be examined.

In this research the focus was on measuring purchase intentions, as we were not able to measure actual shopping behavior. As seen in previous research, intentions do not necessarily translate into actual behavior, meaning that additional research could focus on actual behavior (Carrington, Neville & Whitwell, 2010). The respondents also used self-reported measures and are not observed in actual settings. Therefore, a potential bias may occur when consumers report a measure but does not act accordingly in reality. A basis behind the insignificant results in our framework could be that the respondents might turn to certain coping mechanisms, to be able to rationalize their non-sustainable purchase behavior (Jarcho, Berkman & Lieberman, 2011).

Our findings further suggest the benefit of examining additional mediators and moderators in future research, in order to explain how delivery method can affect purchase intentions. Our moderator sustainability level of products, and our mediators' inconvenience, perceived sense of responsibility, anticipation of guilt and environmental consciousness can be used in further compositions, and research frameworks to discover alternative significance. Suggestions for further research in regard to mediating and moderation effect is pride, ethical mindset and social pressure, self-esteem and personality traits, and level of involvement. Pride has previously been studies alongside guilt, this is due to the similarity of the terms, and their consequences in regard to ethical behavior (Antonetti & Maklan, 2014). An ethical mindset is an area for further research, with the knowledge of the intentions-behavior gap, and how an ethical minded consumer, rarely purchases ethically (Carrington, Neville & Whitwell, 2014). Further, social pressure and self-esteem could can be further studied in regard to personality traits, and how for instance neuroticism affects decision making under pressure. Finally, the level of involvement also influences the consumer under social pressure, and further research could include how low or high involvement affects the consumer in sustainable delivery method decisions (Byrne, Silasi-Mansat & Worthy, 2015).

Appendix A

Table: Description of variable names

Description of Variables		
Name	Variable	Statement
Purchase intentions	Pur_1	I would consider purchasing these clothes
	Pur_2	I intend to try these clothes
	Pur_3	I plan on buying these clothes
Environmental consciousness	Con_1	I think that people should have a good environmental awareness for sustainability
	Con_2	I always show my best efforts to prevent pollution of the environment
	Con_3	I make an effort to avoid products or services that cause environmental damage
	Con_4	I think that energy saving is important for sustainable environment
	Con_5	Recycling of waste is important for the protection of the environment and natural resources
	Con_6	Whenever possible, I walk, or use public transportation to help reduce air pollution
Inconvenience	Inc_1	I find buying sustainable products difficult
	Inc_2	Even if I want to buy organic products, I do not think I would ever be able to do so
	Inc_3	Pro-environmental behavior is not practiced widely because it is generally considered to be an inconvenience
	Inc_4	I find buying sustainable products to be beneficial
	Inc_5	I feel inconvenienced by choosing sustainable products
Perceived sense of responsibility	Res_1	Recycle beverage containers and plastic items
	Res_2	Conserve paper or go paperless
	Res_3	Cut down on eating meat
	Res_4	Turn off lights, stereo, etc. when not in use
	Res_5	Avoid buying things that you don't really need
	Res_6	Avoid taking a bag when you don't need one
Anticipation of guilt	Gui_1	I would feel guilty if I did not recycle on a daily basis
	Gui_2	My conscience would bother me if I did not recycle on a daily basis
	Gui_3	I would have a bad conscience toward the environment if I did not recycle my waste on a daily basis
	Gui_4	I would feel guilty if I did not purchase clothes made of organic cotton
	Gui_5	My consciences would bother me if i did not purchase clothes made of organic cotton
	Gui_6	I would have a bad conscience toward the environment if i did not purchase clothes made of organic cotton

Appendix B

Table: Extraction method; principal component analysis

Communalities

	Initial	Extraction
Pur_1	.599	.676
Pur_2	.541	.633
Pur_3	.607	.719
Con_1	.362	.349
Con_2	.476	.648
Con_3	.485	.581
Con_4	.497	.528
Con_5	.482	.460
Con_6	.382	.332
Inc_1	.244	.248
Inc_2	.253	.311
Inc_3	.231	.292
Inc_4	.208	.301
Inc_5	.301	.233
Res_1	.444	.999
Res_2	.268	.224
Res_3	.410	.404
Res_4	.325	.355
Res_5	.382	.403
Res_6	.378	.406
Gui_1	.835	.884
Gui_2	.839	.898
Gui_3	.791	.817
Gui_4	.825	.806
Gui_5	.762	.808
Gui_6	.149	.099

Extraction Method: Principal Component Analysis.

Appendix C

Dummy variables of treatment conditions

The four different treatment groups

Q18	Group A	Sustainable products, ability to choose climate neutral delivery
Q19	Group B	Non-sustainable products, ability to choose climate neutral delivery
Q18.0	Group C	Sustainable products, no ability to choose climate neutral delivery
Q17	Group D	Non-sustainable products, no ability to choose sustainable delivery method

Dummy variables

Delivery method	.00	Group C and D	Ability to choose a sustainable delivery method
	1.00	Group A og B	No ability to choose a sustainable delivery method
Prodcuts	.00	Group B and D	Sustainable prodcuts
	1.00	Group A and C	Non-sustainable products

Appendix D

Table: Model 8 in PROCESS, for inconvenience

Outcome Variabel: Inconvenience

	b	SE B	t	p	LLCI	ULCI
Constant	2.88	.09	30.54	.00	2.70	3.07
Delivery method	.08	.13	-.64	.52	-.17	.34
Product	-.04	.13	.32	.75	-.21	.30
Delivery method * product	-.02	.18	-.11	.91	-.37	.33

a. R Squared = .05 (Adjusted R Squared = .00)

Outcome Variabel: Purchase Intentions

	b	SE B	t	p	LLCI	ULCI
Constant	3.19	.32	10.11	.00	2.57	3.82
Delivery method	.24	.21	1.14	.25	-.17	.64
Inconvenience	-.08	.10	-.80	.42	-.27	.11
Product	.20	.21	.97	.33	-.21	.61
Delivery method * product	-.13	.28	-.45	.65	-.69	.43

a. R Squared = .10 (Adjusted R Squared = .01)

Index of Moderated Mediation

	Index	BootSE	BootLLCI	BootULCI
Product	.00	.02	-.05	.05

Appendix E

Table: Model 8 in PROCESS for perceived sense of responsibility

Outcome variabel: Responsibility

	b	SE B	t	p	LLCI	ULCI
Constant	4.13	.11	38.62	.00	3.92	4.34
Delivery method	-.06	.15	-.41	.68	-.35	.24
Product	.03	.15	-.19	.85	-.26	.32
Delivery method * product	.10	.20	.52	.60	-.29	.50

a. R Squared = .06 (Adjusted R Squared = .00)

Outcome Variabel: Purchase Intentions

	b	SE B	t	p	LLCI	ULCI
Constant	2.93	.38	7.65	.00	2.17	3.68
Delivery method	.23	.21	1.12	.27	-.18	.64
Responsibility	.01	.08	.13	.89	-.16	.18
Product	.20	.21	.95	.34	-.21	.61
Delivery method * product	-.13	.29	-.45	.65	-.69	.43

a. Responsibility = Perceived Sense of Responsibility

b. R Squared = .09 (Adjusted R Squared = .01)

Index of Moderated Mediation

	Index	BootSE	BootLLCI	BootULCI
Product	.00	.02	-.04	.05

Appendix F

Table: Model 8 in PROCESS for anticipated guilt

Outcome variabel: Guilt

	b	SE B	t	p	LLCI	ULCI
Constant	3.67	.17	21.68	.00	3.34	4.01
Delivery method	-.47	.23	-2.05	.04	-.93	-.02
Product	-.20	.23	-.86	.39	-.66	.26
Delivery method * product	.50	.32	1.56	.12	-.13	1.12

a. R Squared = .12 (Adjusted R Squared = .02)

Outcome variabel: Purchase intentions

	b	SE B	t	p	LLCI	ULCI
Constant	2.86	.25	11.50	.00	2.37	3.35
Delivery method	.25	.21	1.18	.24	-.17	.66
Guilt	.03	.05	.57	.57	-.07	.14
Product	.20	.21	.98	.33	-.21	.62
Delivery method * product	-.14	.29	-.50	.62	-.71	.42

a. Guilt = Anticipation of Guilt

b. R Squared = .10 (Adjusted R Squared = .01)

Index of Moderated Mediation

	Index	BootSE	BootLLCI	BootULCI
Product	.02	.04	-.04	.11

Appendix G

Table: Model 8 in PROCESS for environmental consciousness

Outcome Variabel: Consciousness

	b	SE B	t	p	LLCI	ULCI
Constant	3.90	.10	37.58	.00	3.70	4.11
Delivery method	-.20	.14	-1.44	.15	-.48	.07
Product	.06	.14	.44	.66	.22	.34
Delivery method * product	-.08	.20	.40	.69	.31	.46

a. R Squared = .12 (Adjusted R Squared = .01)

Outcome Variabel: Purchase Intentions

	b	SE B	t	p	LLCI	ULCI
Constant	2.36	.37	6.34	.00	1.63	3.09
Delivery method	.26	.21	1.27	.20	-.14	.67
Consciousness	.16	-.09	1.82	.07	-.01	.33
Product	.19	.21	.91	.36	-.22	.60
Delivery method * product	-.14	.28	-.49	.62	-.70	.42

a. Consciousness = Environmental Consciousness

b. R Squared = .14 (Adjusted R Squared = .02)

Index of Moderated Mediation

	Index	BootSE	BootLLCI	BootULCI
Product	.01	.04	-.05	.09

Appendix H

Tabel: Model 8 in PROCESS for sustainability level of products

Outcome Variabel: Purchase Intentions

	b	SE B	t	p	LLCI	ULCI
Constant	2.97	.15	19.62	.00	2.67	3.27
Delivery method	.23	.21	1.12	.27	-.18	.64
Product	.20	.21	.95	.34	-.21	.61
Delivery method * product	-.13	.28	-.45	.65	-.69	.43

a. R Squared = .09 (Adjusted R Squared = .01)

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