



Co-Creation and Green Trust

Exploring the effects of co-creation on green trust and its implications for sustainable business model development

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Abstract

Environmental sustainability is gaining rising attention, and for good reason. Consumers have realized the growing need for change and are now increasing their expectations towards companies' sustainability efforts. As a result, companies are starting to put sustainability at the heart of their business. However, these rising consumer expectations has also led to an incentive for companies to greenwash, and the consumers' scepticism of companies' sustainability measures is growing. This is creating challenges for conscious companies in convincing consumers of their sincere sustainability efforts, which ultimately creates challenges in building green trust. Therefore, this research aimed to identify the antecedents of green trust, specifically looking at the effect of co-creation on green trust, and the corresponding implications this has for the development of sustainable business models.

By the use of a quantitative survey (n=90) on NHH students, the empirical model looked at the influence of the DART-framework of value co-creation by Prahalad and Ramaswamy (2004c) on green trust. Green trust was constructed by the three dimensions ability, benevolence, and integrity from Mayer et. al (1995)'s integrative model of trust. The results of the study later led to an adjusted research model, combining ability, benevolence, and integrity into one factor, green trust.

Findings showed that co-creation, through the four DART dimensions explain 21.9 % of, and have a partial positive effect on, green trust. Only risk assessment and transparency proved to have a significant impact on green trust in B2C relationships in the clothing and shoe-industry.

The implications for business model development can be summarized as a need for facilitation of risk assessment and transparency. Particularly, through open and honest information sharing regarding all aspects of the business model. To build green trust and avoid greenwashing accusations, there needs to be green efforts in the company and no exaggerated claims. Nevertheless, as only 21.9 % of the variance in green trust is explained by co-creation, it shows that there is a lot more to investigate in a field of growing importance.

Key words: *Green Trust, Co-Creation, DART, Integrative Model of Trust, Sustainable Business Models, Business Model Canvas, Triple Layered Business Model Canvas, B2C*

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1. Introduction

1.1 Background

Environmental protection activities have increased in the past decades (Chen, 2010), concern for global warming is rising, and consumers are generally becoming more aware of environmental issues at stake (Chen, 2008; Chen & Chang, 2013). As a result, many consumers have realized a need for change in their purchasing behaviour, leading them to seek towards a behaviour that takes responsibility for the environment (Chen & Chang, 2013). This rising importance of environmental responsibility and the wanted change towards a more sustainable consumption has also led to a change in consumers expectations of companies' actions to take their share of the responsibility (Carrigan & Attalla, 2001; Iglesias et al., 2020; Shaw & Shiu, 2002).

As a result of this development, more companies are starting to realize the importance of sustainability (Chang, 2011; Chen & Chang, 2013), however, certain companies also see an incentive to greenwash (Chen & Chang, 2013; Horiuchi et al., 2009). Greenwashing is defined as *“the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service”* (Chen & Chang, 2013, p. 489). At the same time technology developments facilitate for more available information for consumers (Iglesias et al., 2020; Jørgensen & Pedersen, 2018; Lindfelt & Törnroos, 2006), making it easier to detect which companies are doing good and bad, and which companies are greenwashing themselves (Chen & Chang, 2013; Horiuchi et al., 2009; Iglesias et al., 2020). This has resulted in more companies putting sustainability in the centre of their business with focus on sincere actions, also known as conscious brands (Iglesias et al., 2020; Markovic et al., 2018; Sierra et al., 2017). Reflected in this, sustainability has become one of the drivers of business model innovation (Bocken et al., 2014; Nidumolo et al., 2009), which combined with changing consumer preferences and technological advancements are pushing businesses to innovate, creating opportunities for sustainable business (Jørgensen & Pedersen, 2018).

At the same time, consumers are becoming increasingly sceptical of companies' sustainability measures and accusations of greenwashing have intensified (Iglesias et al., 2020; Joyner & Payne, 2002). The concern consumers have is for the motives behind the measures, where advertising green products is often seen as just a marketing strategy (Chen & Chang, 2013; Lyon & Maxwell, 2011). This scepticism is a result of the experience of greenwashing and

manipulation of environmental information (Lewandowska et al., 2017), where research shows that greenwashing has lowered trust in green product advertising from 30 % to 13 % among green consumers (Edelman, 2010; Wang et al., 2020).

Focus on sustainability and environmental responsibility has grown bigger, and so has the following importance of including this in business strategy and ones' business model. Consequently, there is a distinction between greenwashing brands that misleads consumers about their environmental measures, and environmentally conscious brands that has put sustainability at the heart. The presence of greenwashing brands and their actions, however, have created a lack of trust among consumers, creating challenges for green brands. These challenges are setting the basis for the purpose of this research, where we aim to:

Identify the antecedents of green trust, and the corresponding implications this has for the development of sustainable business models.

1.2 Research questions

Having consumers' trust is a central aspect to succeed, as consumers who trust a company are more likely to show positive behavioural attitude towards it (Iglesias et al., 2020; Sichtmann, 2007), by supporting, engaging, and promoting it. Trust is about the confidence that another party will do as expected (Chen, 2010; Hart & Saunders, 1997). In other words, consumer's trust in a company is about their willingness to rely on the company's expected future behaviour (Chen & Chang, 2013; Morgan & Hunt, 1994), which is based on consumers' experiences and assessment of information about the company (Chen & Chang, 2013; Moorman et al., 1993).

As sustainability and environmental responsibility is in high rise together with increased levels of greenwashing accusations (Iglesias et al., 2020; Marquis et al., 2016), the question of green trust becomes relevant. As consumer environmentalism is increasing and environmental regulations are getting stricter (Chen & Chang, 2013), green trust is also becoming more important for companies. Related to trust, green trust is about the confidence in and willingness to rely on a company's environmental performance (Chen, 2010; Ganesan, 1994; Schurr & Ozanne, 1985).

Trust literature identifies various antecedents of trust, where some of the most prominent ones are for example satisfaction, communication, competence, and shared values (Franklin & Marshall, 2019; Morgan & Hunt, 1994). Franklin & Marshall (2019) additionally introduces co-creation as a possible antecedent of trust, a link few studies have identified before. Co-creation is about “*active participation, interaction, dialogue and collaboration of the buyer and seller and other actors in the marketing exchange to develop a deeper understanding of the customer problem solving context*”, (Franklin & Marshall, 2019, p. 171). Several scholars point out the presence of vulnerability as a key element in a trust relationship (Doney & Cannon, 1997; Franklin & Marshall, 2019; Mayer et al., 1995; Morgan & Hunt, 1994), where co-creation potentially serves a role in removing some part of this vulnerability, and thus may lead to higher levels of trust (Franklin & Marshall, 2019; Lundkvist & Yakhlef, 2004). To investigate this potential relationship, the following research question is addressed:

RQ1: What is the effect of co-creation on green trust?

In order to achieve a more sustainable future, a fundamental shift in why and how we do business needs to take place (Bocken et al., 2014; Ehrenfeld & Hoffman, 2013; Jackson & Senker, 2011). Business model innovation is a central part in how we can achieve this as it revolves around changing the way we do business (Bocken & Short, 2016; Magretta, 2002). “*A business model describes the rationale of how an organization creates, delivers, and captures value,*” (Osterwalder & Pigneur, 2010, p. 14) and can be described using nine building blocks introduced by Osterwalder and Pigneur (2010) as the business model canvas.

Sustainable business model innovation concerns business model innovation that increases positive impact or reduces negative impact on the environment and/or society (Bocken et al., 2014). Furthermore, it can be identified as business model innovation that generates both economic, environmental, and social value (Joyce & Paquin, 2016; Lenssen et al., 2013). Based on this, Joyce & Paquin (2016) introduces the triple layer business model canvas, also including environmental and social layers in the traditional canvas, as a tool to explore holistic business model innovation beyond just economic value.

Business model innovation is generally seen as being key to success (Bocken et al., 2014; Chesbrough, 2010; Lüdeke-Freund, 2010; Zott et al., 2011), with sustainability being one of the drivers for creative innovation (Joyce & Paquin, 2016). However, creating sustainable business models that also generate economic value for the company is a challenge for many

(Bocken et al., 2014; Schaltegger et al., 2012). This is also reflected in the challenges of consumers' increasing scepticism of companies' sustainability measures (Chen & Chang, 2013; Iglesias et al., 2020; Nyilasy et al., 2014; Pope & Wæraas, 2016).

In order to create value, firms now act more together with parties external to the firm (Beattie & Smith, 2013; Bocken et al., 2014). Co-creation literature also shows that consumers play a more active role in business interactions (Fritzsche, 2015). Consumers have a vital role in value creation, resulting in an increased importance of consumers within business model innovation, also beyond their role as a customer (Fritzsche, 2015; Prahalad & Ramaswamy, 2004b). This can be linked to Chesbrough et al. (2006)'s research on open innovation, which they define as "*the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets of external use of innovation, respectively,*" (Chesbrough et al., 2006, p. 1). Open innovation is in other words innovation that includes external actors, using external actor's input or knowledge in the innovation process (Piller et al., 2011). Co-creation is related to open innovation as customer co-creation is seen as a form of open innovation with customers (Piller et al., 2011).

Following this argumentation and putting it in relation to antecedents of green trust, the following research question is also addressed:

RQ2: What are the implications of co-creation's effect on green trust for development of Sustainable Business Models?

1.3 Contribution

1.3.1 Theoretical contribution

This thesis aims to provide a broader understanding of how managers can utilize concepts from the co-creation literature in order to build green trust among their customers. Co-creation is an emerging field (Galvagno & Dalli, 2014; Iglesias et al., 2020), which implies that there is still room for exploration of different aspects of its use. Prahalad and Ramaswamy (2004c) has developed a framework with four elements that are crucial to succeed with co-creation, which consists of *dialogue, access, risk-assessment* and *transparency* (DART), which is used in the empirical research of this thesis. Nysveen, Oklevik and Pedersen (Forthcoming) points out that the DART-framework has mainly been investigated from the perspective of company

employees. In addition, Iglesias et al. (2020) calls for a broader understanding of the value of co-creation outside the service sector. Consequently, this research contributes with investigating co-creation using the DART-framework among consumers in the goods sector. More specifically, it addresses the sector for clothing and shoes in a business to consumer perspective.

A thorough analysis of the existing research on trust and green trust, including effects and antecedents, contributes to strengthening the understanding of the development of trust research in a business context. In addition, a systematic review of the current literature on green trust is also an important theoretical contribution.

Multiple scholars have researched the effects of green trust (e.g. Iglesias et al., 2020; Martínez & Rodríguez del Bosque, 2013) and how green trust is built (e.g. Chen & Chang, 2013; Wang et al., 2020), but not including dimensions of co-creation specifically. Researchers like Nysveen and Skard (2015), Franklin and Marshall (2018), and Iglesias (2020) have suggested a connection between co-creation and trust, and the latter points out that the research connecting the two concepts is scarce. Franklin and Marshall (2018) investigate the effect of co-creation as a single concept on trust, and thus not across the four dimensions of DART. More particularly, no research is conducted on the dimensions of co-creation's influence on various dimensions of trust in a green context. A much-used framework for understanding trust is Mayer et al. (1995)'s integrative model of trust, which measures trust across the three dimensions *ability*, *benevolence* and *integrity*. This thesis therefore aims to fill the research gap by building on adaptations of Mayer et al. (1995)'s integrative model of trust and the DART-framework of co-creation developed by Prahalad and Ramaswamy (2004b) in a green context.

1.3.2 Managerial contribution

Based on the theoretical discussion and empirical findings, this thesis provides suggestions to how businesses can adapt in order to build green trust among their consumers. These suggestions are based on specific empirical findings from each of the DART-elements' effect on each of the dimensions of green trust. Based on the fact that consumer scepticism towards sustainable marketing is growing (Iglesias et al., 2020), the need for knowledge in this area is considerable. Existing research on the use of co-creation in a managerial perspective is also limited (Ind et al., 2017). Several approaches can be used to operationalize managerial insights

from research. We choose to focus on identifying areas of development through the elements of a business model, which can be important for performance (Sohl et al., 2020). By building on the business model canvas developed by Osterwalder and Pigneur (2010) this research provides concrete advice for how new and existing firms can design their business models based on knowledge about how co-creation influences green trust. In addition, Joyce & Paquin (2016)'s triple layered business model canvas is utilized to systematically make suggestions for a holistic sustainable business model innovation. Overall, insights for managers on how to facilitate for green trust in ones' business models for a sustainable future, is provided.

1.4 Assumptions

Several terms are used interchangeably to describe the sustainability of an object or phenomenon. A study from Mezger et al. (2020) found that the terms ecologically worthwhile, green, sustainable, and environmentally conscious all account for much of the same content. Researchers like Gleim et al. (2013) also choose to use terms like green, environmentally friendly and environmentally sustainable to represent the same concept in their research. In this thesis, it is therefore assumed that all terms signalling a responsible attitude towards environment are sufficiently similar and will thus be used interchangeably.

1.5 Outline

In the following chapter of the thesis, trends in sustainable consumption and production, as well as trust problems related to greenwashing will be presented. In chapter 3, theory of different types of trust, including green trust, is presented. In addition, a thorough review of the literature on antecedents of green trust is conducted, before the fundamentals of co-creation are presented. A research model for investigating the relationship between co-creation and green trust is then derived in chapter 4, along with the hypotheses. Next, the methodology of the research is presented in chapter 5, followed by the results of the analyses in chapter 6. The implications of the findings, both in theoretical and managerial terms, are discussed in chapter 7, where the findings are put into a sustainable business model context. Finally, the limitations and suggestions for further research are assessed in chapter 8.

2. Towards a green(er) economy

Constant growth in the economy has been the leading social and economic paradigm in western industrial societies in the modern age (Kilbourne et al., 1997), and high consumption levels has become synonymous with prosperity and welfare in a country (Sheth et al., 2011). The UN has developed 17 sustainable development goals that has contributed greatly in setting the direction for the work on sustainability in the world (United Nations, 2020). Development goal number 12; *Ensure sustainable consumption and production patterns* (United Nations, 2020), is particularly relevant to understand in the context of our research . From 2010 to 2017, global material consumption rose by 7 % (United Nations, 2020), and the richest 1 % today accounts for more than twice the emissions than the poorest 50 % combined (UNEP, 2020). Although this development has made life easier for millions of people, the price in the long run is high. It is expected that the human population will reach 10 billion by 2050, and that the world economy will quadruple (Ellen McArthur Foundation, 2019). As the living standard in emerging economies rise, so does the pressure on the planet's finite resources (Ellen McArthur Foundation, 2019). In order to secure fulfilling living conditions for people today *and* for future generations, businesses, consumers and policy makers are now increasingly becoming aware of the need to think differently and challenge the leading social paradigm (Staatsen et al., 2017). Although wealthy countries account for the biggest proportion of the emissions in the world, research has also suggested that wealthy consumers demand more clean products (Bruvoll & Fæhn, 2005; Grytten et al., 2020). In the following section, trends in both sustainable consumption and production patterns will be investigated. In addition, the trust problem that has emerged in the intersection between the two will be presented.

2.1 The trends of sustainable consumption

Although new technology has facilitated an unsustainable growth in consumption (Staatsen et al., 2017), it also enables consumers to gain greater insight into how they can make more sustainable decisions (Iglesias et al., 2020), and many are expecting more of the products and services they buy (Lubin & Esty, 2010). These trends are visible around the world, and especially in consumerist economies like the US, Japan and Western Europe (WBCSD, 2008). For instance, a psychological shift has been recognized in Western societies, with increased focus on non-material wealth that enhances the quality of life (Nunes et al., 2014). These findings are reflected in findings from Haller et al. (2020) suggesting that 40 % of consumers

worldwide belong to a purpose-driven consumer group who puts their values first when shopping, and that 78 % regard that brands offer “clean” products as at least moderately important. In the EU, more than half (56.8 %) of the consumers asked in the EU Consumer Condition Scoreboard indicated that they consider environmental claims for at least some of the goods they purchase (European Commission, 2019).

The ecological footprint of Norwegian consumers is increasing, yet not at pace with the growth in GDP (Bruvoll & Fæhn, 2005). Bruvoll and Fæhn (2005) argues that this is in part because increase in wealth leads to increased demands of cleaner products. According to the Sustainable Brand Index for Norway from 2020, there is a positive trend in the share of people that discuss sustainability with their friends and family on a regular basis, with 65 % reporting to do so *sometimes* or *often* in 2020, compared to 37 % in 2013 (SB Insight, 2020). The number of people who claim to regard sustainability in their purchase decision is also showing an increasing trend over time, but decreased from 66 % in 2019 to 63 % in 2020 (SB Insight, 2020). This may be a result of the ongoing Covid-19 pandemic shifting people’s focus more towards a short-term perspective. In sum, however, the report shows that the Norwegian consumers, lagging slightly behind their Nordic neighbours, are becoming increasingly aware of the sacrifices that needs to be made in order to solve the climate problem. The Institute of Consumption Research in Norway has also recognized a clear positive trend in purchase of environmentally labelled products (Berg, 2020). In addition, “Building Back Better” after the ongoing pandemic has been recognized as one of biggest consumer trends to come in 2021 (Westbrook & Angus, 2021). Building back better means returning to the post pandemic everyday life with higher expectations of companies caring beyond their own revenue. A value-driven rather than volume-driven economy is expected (Westbrook & Angus, 2021). Time will tell whether this actually will happen, or if the end of the pandemic marks the start of a new era of materialistic consumerism and abundance. Overall, however, consumer preferences seem to move towards more sustainable consumption in the future.

There also seems to be a tendency that young consumers are more concerned about sustainability than older consumers. This is evident in different research, for instance in one report by First Insight in the U.S. in 2019. In their survey, 62 % of the respondents within generations called Millennials and Gen Z, i.e., people born from 1980 to 2012, indicated that they prefer to buy from sustainable brands in the context of retail. In comparison, only 39 % of the Baby Boomers, which is people born between 1946 and 1964, said the same thing (First Insight, 2020). Although the IBM Institute for Business Value found sustainability to be an

important consideration when selecting brands across all age groups, they also found that Millennials (born between 1980 and 1994) are taking the lead when it comes to sustainability awareness (Haller et al., 2020). In the context of fashion, a McKinsey report highlights that young consumers are leading a change towards a more sustainable industry (Amad et al., 2019). In Norway, in line with the development in many other countries, we see a trend that political parties with a declared environmental agenda like MDG, Venstre and SV have a bigger proportion of young voters (aged 18-29) than the other parties in the last national election (Statistics Norway, 2017). This indicated that environmental concern and willingness to change is more prominent among young consumers.

2.2 The trends of sustainable business

While sustainability is becoming a more prominent driver for consumer decisions, businesses are increasingly taking more responsibility and shifting towards more sustainable business models. This development is for instance visible through the development of the companies' reported sustainability strategies. A systematic mapping of corporate sustainability reports by Stewart et al. (2018) shows that the number of reports on sustainability efforts has skyrocketed since the mid 90's. World Business Council for Sustainable Development (WBCSD) states that the number of accounting and reporting frameworks for sustainable impact has grown considerably since 2010. Although they call for making disclosure of impact and risks related to environmental, social and corporate governance (ESG) mandatory, the development is positive (WBCSD, 2019). PwC's annual global CEO survey of 2020 revealed that 30 % of the CEO's surveyed, compared to 16 % in 2010, believed that their company's environmental efforts would provide them with a reputational advantage (PwC, 2020)

PwC (2020b) has also gathered information from Norway's 100 biggest companies. Their report shows that 85 % of the companies have communicated an ambition to reduce emissions, growing from 73 % only two years earlier in 2018 (PwC, 2020b). The percentage that has set a clear strategy for how to reduce the emissions is, however, only 16 %. This figure has grown from 6 % in two years, which indicates that the ambitions of development towards more sustainable business models is positive (PwC, 2020b).

Chen (2010) identifies five main reasons for companies to adopt green marketing: *“compliance with environmental pressures; obtaining competitive advantage; improving corporate images; seeking new markets or opportunities; and enhancing product value,”*

(Chen, 2010, p. 307). Lubin and Esty (2010) emphasize the importance of communication in order to build competitive advantage, as the pressure of customer expectations intensifies. 30 % of the largest companies in Norway communicate clear sustainability strategies, which is an improvement from only 10 % in 2017 (PwC, 2020a). In order to “*create and maintain customer relationships*”, Gossen et al., (2019, p. 253) points to commercial marketing as the preferred tool. Gossen et al. (2019) also argues that marketing can have direct influence on consumer decisions, which in turn gives businesses an opportunity to contribute not only to sustainable production, but also sustainable consumption. It is therefore no coincidence that the literature on the field of sustainable marketing has grown significantly over the past few decades (Nyilasy et al., 2014). It should, however, be handled with care, as the next section explores.

2.3 The trust issue of greenwashing

Although building a sustainable reputation is more important than ever, many companies struggle to convince their customers that they are sincere in their efforts (Lewandowska et al., 2017). Lewandowska et al. (2017) point out that one of the biggest challenges companies face when communicating their environmental efforts is to find the balance between providing information that is effective, but not trivial. In this compromise, building trustworthiness is particularly hard. Environmental issues have been considered important within the field of marketing since the early 1970s (Chen & Chang, 2013), at the same time that claims of greenwashing have been prominent (Watson, 2016). The term greenwashing was coined in the mid 80’s by environmentalist Jay Westerveld who noted the duality of a holiday resort’s environmentalism. At the one hand, they asked the customers to reuse their towels in order to save the environment, but on the other hand they were in the midst of expanding their business and consequently doing more damage to their surroundings (Watson, 2016). The term has been created debate ever since.

According to the EU Consumer Conditions Scoreboard, almost half of the respondents (44.7 %) did not trust environmental claims (European Commission, 2019). In a survey conducted in 28 countries, 71 % of the respondents indicated that being able to trace how the products are sourced, made and delivered is important for them. The survey also showed that the younger generations spent more time searching for information to verify a brand’s sustainable efforts than the older ones (Haller et al., 2020). Additionally, they found that trust was important for

84 % of the consumers when they purchased products with sustainability in mind (Haller et al., 2020). This indicates that trust is important for sustainable consumer decisions worldwide, and that especially young people are interested in traceability when shopping. A reason for this may be the many intensified accusations of greenwashing over the last few years (Iglesias et al., 2020; Marquis et al., 2016) that has made consumers more sceptical towards environmental claims (Wang et al., 2020).

A survey made by the Norwegian research company Opinion reached the headlines in 2020 when they asked people to name the most sustainable companies in Norway. The result was surprising to many as it turned out that 70 % could not mention any sustainable companies (Hovland, 2020). This gives clear indications that the costly sustainability efforts businesses make every year to act responsibly are not necessarily being translated to actual attitudes among the consumers. Although reports show that Norwegian consumers have a slightly higher trust in environmental labelling and claims than the European average (Berg, 2020), greenwashing is still a prominent issue. Following this development, more than 300 Norwegian companies have signed an agreement called *The Greenwashing Poster* with ten principles for truthful sustainability marketing (Grønnvasking.no). The trends show that most businesses understand the need to act responsibly and to be perceived as trustworthy while doing so in order to position themselves favourably among their consumers, and especially among the younger generations.

3. Review of literature

Through this chapter, relevant literature on why trust is important and how it is built is examined. Two common ways of categorization of trust, being the distinction between ability, integrity and benevolence, and the distinction of cognitive and affective trust, are also explored. Furthermore, an assessment of green trust and its effects, as well as a systematic literature review of the antecedents of green trust, is conducted. Finally, an overview of literature on co-creation in general and the DART-framework, is provided.

3.1 Trust

Trust is a term used by many scholars across several disciplines over many years. Some business-related disciplines in which trust has been discussed in recent years are disciplines like risk management (Earle, 2010), communication and information exchange (Denize & Young, 2007), leadership (Hasel & Grover, 2017), B2B relationships (Ashnai et al., 2016), customer-brand relationships (Hess & Story, 2005), and social commerce (Hajli et al., 2017). Trust being a widely used term means that there also exists many definitions and explanations of the term. Different scholars point to different synonyms of trust, like cooperation (Deutsch, 1962), confidence and predictability (Mayer et al., 1995), credibility and trustworthiness (Blomqvist, 1997). However, many of such synonyms can be argued to give an incomplete picture of what trust is. This is supported by both Mayer et al. (1995) and Rousseau et al. (1998)'s discussion about how some of these terms may originate from situations unrelated to trust, and not being a condition for it (Mayer et al., 1995; Rousseau et al., 1998).

Mayer et al. (1995) and Rousseau et al. (1998)'s descriptions of trust are well supported in literature, having respectively 24408 and 12098 citations just through google scholar (21.feb 2021), where much of newer research refer to and build upon these standpoints. Mayer et al. (1995) defines trust as *“the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other part,”* (Mayer et al., 1995, p. 712). Based on this definition, there is one key element emphasized by different authors, being the element of vulnerability. For trust to take place, one of the parties involved needs to be in a vulnerable position (Doney & Cannon, 1997; Franklin & Marshall, 2019). Based on Mayer et al. (1995)'s definition, they also need to be willing to be put in a vulnerable position.

When this willingness is present, trust is put in action (Franklin & Marshall, 2019; Mayer et al., 1995; Morgan & Hunt, 1994). Being vulnerable and putting yourself in a vulnerable position may lead to consequences. Trust can therefore also be linked with risk, which is seen as a common characteristic in many trust situations (Johnson-George & Swap, 1982; Mayer et al., 1995), and are by some argued to be a condition for trust (Coleman, 1990; Rotter, 1967; Rousseau et al., 1998; Williamson, 1993), because without risk or uncertainty there would not be a need for trust (Lewis & Weigert, 1985; Rousseau et al., 1998). Following this, the more trust a person gives, the more potential consequences arise, and the person is subject to higher levels of risk. This line of thinking is supported by Schoorman et al. (2007). They describe trust as willingness to take risk, which then means that *“level of trust is an indication of the amount of risk that one is willing to take,”* (Schoorman et al., 2007, p. 346). Another mentioned condition for trust is interdependence (Rousseau et al., 1998), meaning that without a dependent relationship trust would not be put in operation, as one would not need to engage in a trusting relationship.

Rousseau et al. (1998) offers a different definition of trust saying that *“trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another,”* (Rousseau et al., 1998, p. 395). Comparing this to Mayer et al. (1995)’s definition, it is evident that both definitions emphasize the willingness to be vulnerable, showing the importance of vulnerability in relation to trust. In addition, Rousseau et al. (1998) adds an element of “positive expectations”, which is also supported by Lewicki et al. (1998)’s definition, defining trust as *“confident positive expectations regarding another’s conduct,”* (Lewicki et al., 1998, p. 439).

Furthermore, trust is described as confidence in intentions and motives (Lewicki et al., 1998; Mellinger, 1956), and as being expectations of others behaving according to commitments, being honest, and not taking advantage of others (Hosmer, 1995). Trust is a psychological state, not a behaviour, and is therefore argued to not be something one chooses, but rather occur as a consequence of choices (Rousseau et al., 1998), and is based on expectations of moral duty (Hosmer, 1995).

3.1.1 Effects of trust

Trust is seen as an important part in all social relations (Blau, 1964; Hosmer, 1995), and it constitutes a central part in our continuously changing society, as trust makes it possible to

operate in unfamiliar, uncertain, and deviant situations (Holmström, 2007). Trust has further been linked to various outcomes both on micro and macro levels, there among factors like employee satisfaction (Edwards & Cable, 2009; Gulati & Sytch, 2007), collaboration (Sargent & Waters, 2004), leadership effectiveness (Dirks & Ferrin, 2002; Gillespie & Mann, 2004), and organizational change (Fulmer & Gelfand, 2012; Gibson & Birkinshaw, 2004).

Trust has proven to be an important aspect within strategy, where it is seen as a relational resource (Castaldo et al., 2010; Domingo, 2005) and is argued to be one of the most important success factors in business (Blomqvist, 1997), as it gives the opportunity to create a competitive advantage (Barney & Hansen, 1994; Sichtmann, 2007). This is because trust is fundamental in enabling product acceptance (Castaldo et al., 2010) and cooperative behaviour (Gambetta, 1988; Rousseau et al., 1998), it influences capital investments (Blomqvist, 1997; Castaldo et al., 2010; Domingo, 2005), and reduces conflicts and costs (Meyerson et al., 1996; Rousseau et al., 1998). Furthermore, research shows that trust can improve both profitability, innovation effectiveness (Cao & Zhang, 2011; Fawcett et al., 2017), and response to crises (Rousseau et al., 1998), to mention some.

Business-consumer relationships need trust, as trust constitute a crucial part in overcoming risk and uncertainty among consumers, which is crucial in order to encourage for example purchasing behaviour and personal information sharing (McKnight et al., 2002). This also relates to the importance of consumer trust in marketing, as trust is essential for marketing measures to have an effect (Audi, 2008) and generally has a positive impact on its success (Sichtmann, 2007). Trust generally influences the nature of a business-consumer relationship, as it influences our expectations about the one that we are to do business with (Ganesan, 1994; Gefen, 2002).

Loyalty and trust are two linked concepts within the business-consumer relationship (Atwater, 1988; Iglesias et al., 2020), where studies argue that trust influences customer loyalty towards brands (Lauer & Deng, 2007; Nysveen & Skard, 2015) and their relationship commitment (Morgan & Hunt, 1994; Sichtmann, 2007). Scholars argue that customers who trust a brand, not only adopt a more positive attitude towards the brand, but they also become more loyal, (Delgado-Ballester & Luis Munuera-Alemán, 2005; Iglesias et al., 2020). Trust has also proven to influence both customers willingness to pay (Nysveen & Skard, 2015; Pavlou & Dimoka, 2006), and purchase intention (Chen, 2010; Gefen & Straub, 2004; Nysveen & Skard, 2015; Wang & Benbasat, 2005), including intention to repurchase (Delgado-Ballester & Luis

Munuera-Alemán, 2005; Iglesias et al., 2020). Establishing a trusting relationship with customers is also important due to the costs of acquiring new customers versus retaining existing ones, which proves to be 25 times higher (Gallo, 2014; Iglesias et al., 2020).

3.2 Trust as ability, benevolence and integrity

Mayer et al. (1995) introduces three dimensions of trust in their integrative model of trust. The model is based upon the assumption that characteristics of the trustor and the trustee influence trust, namely the trustors propensity, and the trustee's perceived level of *ability*, *benevolence* and *integrity* (Mayer et al., 1995). The model thus treats trust as a second order construct. Several authors link the level of trust in a trustee to their perceived level of certain characteristics, seen as dimensions of trust (Franklin & Marshall, 2019), or as a measurement for trust (Johnson-George & Swap, 1982; Lieberman, 1981; Mayer et al., 1995), also known as their level of trustworthiness (Mayer et al., 1995). Mayer et al. (1995)'s integrative model of trust is referred to by many scholars within trust literature (Rousseau et al., 1998), and has been used as a trust measurement also in later years (Poon, 2013; Svare et al., 2019; Zhang et al., 2016).

The characteristics linked to trust by Mayer et al. (1995) is as mentioned the trustee's level of ability, benevolence, and integrity. *Ability* is about having the competence, characteristics, and skills in an area, making others trust one's abilities in this area of expertise (Mayer et al., 1995). Ability has been considered an element in trust by different scholars, there among Deutsch (1960), Cook and Wall (1980), Sitkin and Roth (1993), and Jones, James and Bruni (1975), Gefen and Silver (1999), and Giffin (1967). *Benevolence* is about being well meaning in one's actions and whether one is believed to want to do good (Mayer et al., 1995). Benevolence is an established element in trust and have been included by scholars like Gefen and Silver (1999), Ganesan (1994), Giffin (1967), Kumar et al. (1995a, 1995b), Doney and Cannon (1997), Fawcett et al. (2017), Ba and Pavlou (2002), and Singh and Sirdeshmukh (2000). *Integrity* is about the trustor's perception that the trustee will act according to principles the trustor finds acceptable. It is not enough that the trustor acts according to set principles, as this could just as well relate to acting according to pure profit at all costs type of principles. Integrity is about adhering to principles the trustor sees as good behaviour (Mayer et al., 1995). Integrity is also a well-supported element of trust and is used by authors like

Morgan and Hunt (1994), Gefen and Silver (1999), Doney and Cannon (1997), and Giffin (1967).

Trust literature also link other terms as being an element of trust, either as synonyms to these mentioned characteristics, or as separate important characteristics of the trustee. Ability has for example also been referred to as competence (Lieberman, 1981) or as perceived expertise (Mayer et al., 1995), and Giffin (1967) also introduces expertness as a possible factor of trust related to ability. Instead of benevolence, motivation to lie (Hovland et al., 1953), intentions and motives (Deutsch, 1960; Giffin, 1967), and altruism (Frost et al., 1978) is also discussed. Integrity can be linked with use of similar terms like value congruence, character (Mayer et al., 1995) and honesty (Kumar et al., 1995a, 1995b). Other characteristics used as a dimension of trust is fairness, dependability, and openness (Schurr & Ozanne, 1985), as well as sincerity, predictability, and goodwill (Blomqvist, 1997). Credibility is another term that many have used as an element of trust (Ba & Pavlou, 2002; Dimoka, 2010; Doney & Cannon, 1997; Fawcett et al., 2017; Ganesan, 1994; Singh & Sirdeshmukh, 2000), where credibility represents a combination of ability and integrity (Gefen, 2002) and is linked to the trustee's level of competence, honesty and reliability (Sirdeshmukh et al., 2002).

Different studies have, as mentioned, used the characteristics ability, benevolence, and integrity as a means to measure trust. One study, Poon (2013), investigated the importance of ability, benevolence, and integrity for trust in supervisors. Overall, the study showed that benevolence seems to be highly necessary in order to foster trust, where ability and integrity is able to compensate for one another as long as benevolence is high, but supervisors with high integrity did come across as to have higher trust, regardless of their level of ability (Poon, 2013). Another example is the research work of Zhang et al. (2016) about the formation of trusting beliefs in sustainability claims, which was measured using the dimensions competence, benevolence and integrity. As previously established, competence is closely linked to ability, and the study thus reflects Mayer et al. (1995)'s integrative model of trust. The study found evidence that different types of information affect different dimensions of trust (Zhang et al., 2016), and thus attained a more nuanced picture of the formation of trusting beliefs than it would have if only one dimension of trust was used.

In sum, Mayer et al. (1995)'s model of integrative trust is recognised as a trust measurement by different authors, though its dimensions; ability, benevolence, and integrity, faces many synonyms, variations, and other closely linked words in various research.

3.2.1 Effects of ability, benevolence and integrity

Building on previously mentioned studies on the effects of trust, some studies also mention the effects of ability, benevolence, and integrity. One study, (Svare et al., 2019), looked at how trust in terms of perceived ability, benevolence, and integrity influences different aspects within networks, differing between inter-organizational and network level. Overall, the study looks at how ability-, benevolence-, and integrity-based trust influences various activities in networks (Svare et al., 2019). Svare et al. (2019) found that benevolence trust affects communication, knowledge sharing, and collaboration performance. They also found that the level of ability and integrity influence partnership selection, and overall identifies benevolence-based trust as a performance facilitator and is seen to be the most important among the different trust dimensions (Svare et al., 2019). Ridings et al. (2002) looked at effects of trust in virtual communities. Their study sought to find out how important trust is in virtual communities in order to enable knowledge sharing, and how this trust is built (Ridings et al., 2002). They identified trust as to consist of two dimensions; ability, and a combined benevolence-integrity dimension (Ridings et al., 2002). They found that trust is important for information exchange, where ability and benevolence/integrity both influence responsiveness, willingness to share personal information, and community members' disposition to trust (Ridings et al., 2002).

Zhang and Li (2019)'s study looks at how use of social media by salespeople influence trust in a B2B context, looking at trust through the dimensions ability, benevolence and integrity. Their study found that social media use can increase trust in salespeople, where perceived integrity and benevolence positively influence customer loyalty (Zhang & Li, 2019). In addition, they found that perceived level of benevolence can reduce level of purchase risk, and through this influence customer loyalty. Level of perceived ability did not have any significant influence in their study (Zhang & Li, 2019). A last study, Vlachos et al. (2013) supports previous findings, as they find benevolence to be an important attribute in building both consumer trust and loyalty. Their study looked at the non-linear effects of various trust and loyalty dimensions, looking at value-driven attributes, consumer benevolence, and perceived service quality in the mobile services industry (Vlachos et al., 2013).

3.3 Trust as cognition and affect

A different set of trust literature talks about trust in terms of cognition and affect, where trust is argued to constitute both a cognitive and affective part (Lewis & Weigert, 1985; McAllister, 1995). Cognition itself is defined as “*the use of conscious mental processes,*” (Cambridge University Press, 2021), while affective is defined as “*connected with the emotions*” (Cambridge University Press, 2021). These definitions also relate to the explanation of cognitive and affective trust, where cognitive trust depends on perceived competence of the other, while affective trust depends on emotional and caring bonds (Parayitam & Dooley, 2009).

McAllister (1995) talks about cognitive trust as something that is based on one’s belief in the trustee’s reliability and dependability. Trust is cognitive, as trusting someone is a choice we make in regards of who, in what respect and in which circumstances we trust, a choice that is based on our personal definition of ‘good reasons’ (Lewis & Weigert, 1985; McAllister, 1995). Relating to the definition of cognition, cognitive trust is based on information and rational choices (Zhang et al., 2016), and it is based on perceived performance, such as competence, reliability, dependability, and responsibility (Schaubroeck et al., 2011). Cognitive trust has also been referred to as the calculative aspect of trust, as it relates to choices based on rationality, knowledge, learning (Franklin & Marshall, 2019; Sekhon et al., 2013), and reliable information (Zhang et al., 2016).

Affective trust on the other hand, comes from mutual care and concern (McAllister, 1995), from the emotional bonds between the parties (Lewis & Weigert, 1985). It originates from a perceived care for one’s wellbeing (McAllister, 1995; Schaubroeck et al., 2011), where empathy, rapport, and affiliation are central parts creating the foundation of a trusting relationship (McAllister, 1995; Schaubroeck et al., 2011).

In other words, cognitive and affective trust are two different aspects of trust originating from different psychological processes (Schaubroeck et al., 2011). It is argued that cognitive trust creates a baseline for affective trust to flourish, meaning that some level of cognitive trust needs to be in place before affective trust kicks in (Franklin & Marshall, 2019; McAllister, 1995; Schaubroeck et al., 2011). Cognitive trust has traditionally been the focus within trust generation (Franklin & Marshall, 2019; Young & Daniel, 2003), despite it being seen as more superficial than affective trust (Johnson-George & Swap, 1982; McAllister, 1995). Activities

that generate cognitive trust are based on historical interactions between the parties, while activities in order to generate affective trust are based upon building a relationship, for example through alliances and co-creation (Franklin & Marshall, 2019). Dividing trust into cognitive and affective factors is a different approach to understanding the building blocks of trust than dividing it into benevolence, integrity and ability. Integrity and ability, however, are often categorized as mainly cognitive-dominant factors, whereas benevolence is viewed as mainly affective-dominant (Franklin & Marshall, 2019).

3.3.1 Effects of cognitive and affective trust

Related to studies on effects of trust, as well as effects of ability, benevolence, and integrity, some studies also examine the effects of cognitive and affective trust. Swift and Hwang (2013) have looked at cognitive and affective trust in terms of promoting knowledge sharing and organizational learning. More specifically they investigated the influence of cognitive and affective trust between executives, as well as work social networks, and on knowledge sharing (Swift & Hwang, 2013). Addressing marketing and sales executives, they found that only affective trust is important in knowledge sharing. Affective trust also proved to be substantial in building network strength, where work related social networks has an important influence on knowledge sharing (Swift & Hwang, 2013). They also found that cognitive trust is more important than affective trust when it comes to organizational learning (Swift & Hwang, 2013).

Similarly, Shijiao et al. (2021) investigated how cognitive and affective trust influence cooperative behaviour in contact tracing for Covid-19, as well as identifying antecedents of trust. They found that cognitive trust increases willingness to disclose information and decreases willingness to falsify information (Shijiao et al., 2021). Affective trust on the other hand increases both willingness to disclose and falsify information (Shijiao et al., 2021). Ozdemir et al. (2020) have researched cognitive and affective trust as mediators in consumer brand loyalty, addressing corporate brands and consumers of Chinese dairy products. They found that cognitive trust mediates corporate brand communication's effect on consumer brand loyalty, while affective trust mediates corporate brand liking's effect on consumer brand loyalty (Ozdemir et al., 2020).

Lastly, Johnson and Grayson (2005) investigated whether consumer trust constitutes of cognitive and affective trust and the practical insights this gives in management of service

relationships. Their study specifically looks at the relationship between customers and financial advisors (Johnson & Grayson, 2005). The study found that sales effectiveness is influenced by cognitive trust, while affective trust influences customers' willingness to meet with service providers in financial services, but affective trust generally has a modest influence on the relationship between customers and financial advisors (Johnson & Grayson, 2005).

3.4 Green trust

The field of study on green trust is relatively young, and Chen (2010) was among the first to propose a definition of the concept in a study on how firms can build green brand equity. The definition has become the most commonly referenced one within the field, and it describes green trust as “*a willingness to depend on a product or service based on the belief or expectation resulting from its credibility, benevolence and ability about environmental performance*” (Chen, 2010, p. 309). It builds upon the work by Mayer et al. (1995) that suggests that trust is comprised of the perception of the three dimensions ability, benevolence, and integrity. In addition, it fathoms how the product or service meets the environmental concerns of the consumer.

Some research is done in the later years on building a framework for green trust, but the work is still limited (Mezger et al., 2020). Kikuchi-Uehara et al. (2016b), for instance, has examined trust in environmental information, and its following effect on product choice. They explore a traditional framework of trust as the perceived competence and fairness of the organization providing the environmental information. Competence is often used interchangeably with ability, and fairness can be compared to integrity, and is thus related to Mayer et al. (1995)'s integrative model of trust. In addition, Kikuchi-Uehara et al. (2016b) emphasize value similarity between the trustor and the trustee as a significant indicator of trust in the environmental information. Their findings indicate that having similar values is a more prominent indicator for trust when the consumer has a high environmental awareness, and that competence is most important for trust in the category of consumers with low environmental awareness (Kikuchi-Uehara et al., 2016b).

Mezger et al. (2020) has also proposed a novel multiple-factor model for understanding green trust. Their research, based on an exploratory factor analysis, identifies four dimensions of trust in green electricity providers: openness, responsibility, authenticity, and competence. Openness refers to the perception of the provider's information exchange, and consists of the

items *service oriented, approachable, accessible, and customer oriented*. The factor responsibility, which is about how the interest of others is protected, covers the items *green, ecologically worthwhile, environmentally responsible, and sustainable*. Authenticity refers to if the suppliers does as promised, and delivers the value offered, and is conceptualized through the items *trustworthy, honest, reliable and sincere*. Lastly, competence describes the costumer's perception of the supplier's ability to deliver the expected value, and is made up of the items *expert, experienced and knowledgeable*. In sum, Mezger et al. (2020) views green trust as the consumer's attitude towards the supplier as someone who is engaging authentically and openly with its consumers while competently and sustainably supplying environmentally responsible products and services.

Altogether, the research on green trust builds on definitions of trust in different ways and incorporates how the supplier delivers on environmental requirements. Moving forward, we will use Chen (2010)'s definition of green trust as a foundation, but with the original dimensions integrity, benevolence and ability, proposed by Mayer et al. (1995). As with trust in general, green trust is fundamental for successful marketing of green characteristics that contribute to positive differentiation for a product or service (Chen, 2010).

3.4.1 Effects of green trust

In light of the aforementioned trust problem, it is established that many sustainability efforts are not being recognized as trustworthy and are thus not translated into value for the companies claiming them. This is, in part, because it is difficult to find and verify information about the quality of efforts enhancing sustainability in products (Zhang et al., 2016). Experience has shown that this difficulty in verifying and obtaining quality information has facilitated conditions for opportunistic behaviour among some actors (Zhang et al., 2016), which over time has fostered consumer scepticism (Wang et al., 2020). This scepticism has become a barrier for realizing sustainable marketing strategies as many sustainability efforts are perceived as deceiving (Chen & Chang, 2013). Building green trust may thus have many important effects for counteracting these negative impressions.

The main desired effects of adopting sustainable practices from a company perspective are to reduce the impact of the organization, communicate pro-environmental achievements to build a positive image, and increase sales (Lewandowska et al., 2017). Following this, in order to reduce their own impact, firms are often dependent on their customers' willingness to change

behaviour. One can also argue that with the power to affect consumer decisions through for instance commercial marketing, comes great responsibility to do so in a direction that does not hurt the planet. There are many examples of studies that have found indications that green trust affects the consumers' green behaviour. Chen et al. (2019) found, for instance, that a lack of green trust can make consumers question the motives behind environmental initiatives in hotels, which makes them less likely to engage in them. Hameed & Waris (2018) also found that green trust is an important mediator in the relationship between eco-labelling and consumers' eco-conscious behaviour. Green initiatives may in other words lose their effect if they are not perceived as trustworthy.

It is evident that many firms are paying more and more attention to their green practices, partly motivated by building a positive reputation and increasing sales (Lewandowska et al., 2017). However, when these practices are not aligned with the consumers' green confidence in the company, they act as significant barriers for green purchase decisions (Mezger et al., 2020). Chen et al. (2019) found that mistrust in green initiatives in a hotel could increase the consumers' likelihood of spreading negative word of mouth about the hotel. Many researchers (i.e. Chow & Holden, 1997; Schlosser et al., 2006; van der Heijden et al., 2003) have suggested that trust positively affects consumers' purchase intentions, and Zaidi et al. (2019) found a significant positive mediating effect of green trust on the relationship between consumption values and green purchase intentions. Kikuchi-Uehara et al. (2016a) found that trust in environmental information could influence the consumers' decision to select an environmentally conscious product. In the study by Chen et al (2019) about hotel guests, a clear effect of green trust on revisit intentions was confirmed. Therefore, we see that green trust is important to build a strong reputation and to realize the values of green practices.

Increased loyalty is also an important effect of increased trust. Chen (2010) found evidence that suggests that green trust has a positive influence on green loyalty. In a different study, Chen and Chang (2013) found that the relationship between green perceived value and green loyalty is mediated by green trust. In other words, it may not be sufficient to have a green product or service that is highly valued by the consumers, they also need to trust its green attributes in order to build green loyalty. The study by Chen (2010) also indicates that green trust is positively related to green brand equity, which is a concept that is used to represent the consumers' preference, attitude and purchase behaviour of a brand (Yasin et al., 2007). In sum, building green trust has both direct and indirect positive effects, and is something any

responsible company should want to strive for in order to gain a favourable position in the market.

3.5 Antecedents of trust

As trust has been researched in many different disciplines and with many different aims, the ways to build trust is also explained through various antecedents. Franklin and Marshall (2019) have identified the most prominent antecedents of trust in modern literature to be competence, satisfaction, communication, shared values, integrity, and benevolence. Although the concepts competence, integrity and benevolence are often understood as dimensions of trust that are used when measuring the trust concept, they are also often interpreted as antecedents. We therefore include them in this section where we aim to summarize the antecedents that are most commonly used in the field of marketing. For limitation purposes, we choose to focus on the antecedents identified by Franklin and Marshall (2019).

Firstly, in order to align expectations between a trustor and a trustee and avoid misunderstandings that can lead to loss of trust, it is necessary to have good *communication* (Theron et al., 2011). The importance of communication for building trust between two partners in a relationship is widely accepted by many researchers, e.g., Theron (2011), Morgan and Hunt (1994), and Franklin and Marshall (2019). Morgan and Hunt (1994) identified communication as an important antecedent to trust in their theory created to understand how to do successful relationship marketing. Communication can be defined as “*the formal as well as informal sharing of meaningful and timely information*” (Anderson and Narus 1990. p. 44, as cited in Morgan and Hunt, 1994).

Another antecedent that is crucial to build trust is *competence* (Franklin & Marshall, 2019; Sichtmann, 2007; Theron et al., 2011). Competence says something about the buyers’ perception of how well the supplier can deliver the required value and is in some research also referred to as expertise (Johnson & Grayson, 2005). Competence is also present in Mayer et al.’s (1995) concept of ability, as it contains the “*set of competence, skills and characteristics that enable a party to have influence within some specific domain*” (Mayer et al., 1995, p. 717). How able the company is to deliver the expected quality to the consumer is thus believed to affect the trust in the relationship (Sichtmann, 2007).

Franklin and Marshall (2019) also identify *satisfaction* as an antecedent of trust, and it encompasses the consumer's post-purchase evaluation of the product or service, as well as the overall experience with the purchase process. When the customer satisfaction is high, the perception of trust will be positively affected (Johnson & Grayson, 2005; Theron et al., 2011). Customers who are dissatisfied with a purchase experience, product or service will therefore, expectedly trust the supplier less the next time.

Furthermore, *integrity* is recognized as a precursor much used to explain the development of trust (Franklin & Marshall, 2019). In a business-to-consumer perspective, this would involve the consumer perceiving that a company acts based on acceptable principles (Mayer et al., 1995). Sichtmann (2007) points out the importance of credibility for building trust, especially when a customer lacks information about the company's willingness to deliver the expected quality. Credibility here represents a combination of ability and integrity (Gefen, 2002).

Shared values can be defined as "the extent to which partners have beliefs in common about what behaviours, goals and policies are important or unimportant, appropriate or inappropriate and right or wrong" (Morgan & Hunt, 1994, p. 25), and is recognized as an important antecedent to trust by many researchers (i.e. Franklin & Marshall, 2019; Theron et al., 2011). Johnson and Grayson (2005) also identify the factor *similarity* which encompasses the degree to which the two parties in the trust relationship have similar values and interests. Conflicting interests and values can evoke negative emotions with a consumer, and thus not provide an adequate foundation for trust (Theron et al., 2011). It can therefore be argued that customers who disagree with a company's values or interests will trust it less.

The last antecedent Marshall and Franklin (2019) identifies as most salient is *benevolence*, which is also an important element in Mayer et al.'s (1995) theory of organizational trust. The factor can be described as the consumers' perception of the supplier's willingness to do good for the consumers, and not just for itself (Mayer et al., 1995). On the opposite side, a negative antecedent to trust is opportunistic behaviour, identified by Morgan and Hunt (1994), which can be described as deceitful self-interest seeking. Benevolent behaviour, as opposed to opportunistic behaviour therefore positively influences trust.

In addition to the most salient antecedents of trust, Franklin and Marshall (2019) also identified the concept co-creation as a significant driver for trust between two parties in their research. Although co-creation cannot be described as one of the most commonly used antecedents of

trust, researcher like Iglesias (2020; 2013), Urban et al. (2009) and Nysveen & Skard (2015) have suggested a similar connection. Co-creation is described in various ways within different contexts. Franklin and Marshall (2019), however, use it as a single concept that describes participation, collaboration and interactions that happens between the buyer and a seller with the aim to develop a deeper understanding of the problem and solution for the customer. Franklin and Marshall (2019) suggest that these types of activities enhance trust because they encourage relationship building and requires a higher level of socio-emotional involvement. In addition, they point out that engaging in co-creation activities requires some level of initial trust because it involves open exchange of information, and that it thus leads to building more trust (Franklin & Marshall, 2019). This interdependence implies that co-creation and trust influence each other reciprocally over time (Nysveen & Skard, 2015), but this research will focus on the effects of co-creation on trust at one point in time.

3.5.1 Antecedents of ability, benevolence, and integrity

The three concepts ability, benevolence and integrity can be interpreted as both antecedents to and dimensions of trust. Therefore, the antecedents of the three concepts are also explored. Some research is done on the formation of trust through the three dimensions in for instance social media (Breneman & Karimov, 2012; Zhang & Li, 2019) and in virtual communities (Ridings et al., 2002) where significance of sharing information is a common denominator. The same can be said about Zhang et al. (2016)'s research on how trust in sustainability claims, split into benevolence, integrity and competence, is built through different types of information.

In the study about how social media and blogs are linked to initial trust in e-commerce websites, Breneman & Karimov (2012) suggested that social media facilitates interpersonal interaction and information sharing that can make meetings with unfamiliar e-tailors less uncertain. They found little evidence that linking social media and corporate blogs to e-commerce website had any effect on trust in ability. They did, however, find a significant effect on trust in benevolence when a social media platform was linked together with a corporate blog with a photo of a person. The theory is that a picture inspires an emotional response, and therefore affects the trust in benevolence, which as previously mentioned is an affection-dominant construct (Franklin & Marshall, 2019). Interestingly, they also found that a blog without a picture improved the trust in integrity. This can be an effect of objectivity and

professionalism that is disturbed when linked to a personal image (Bregman & Karimov, 2012).

In a business to business-context, Zhang & Li (2019) researched the effects of communication on social media among salespersons on trust in ability, benevolence, and integrity. They found all the three dimensions of trust were significantly affected, which is believed to be caused by social media facilitating sharing of information that in turn reduces uncertainty and information asymmetry. In addition to the effects from the increased transparency, it also benefits both sides by leading to integrative bargaining strategies (Zhang & Li, 2019).

Much can be said to have changed in the use of internet since 2002 when Ridings et al. conducted their research on trust in virtual communities. Their findings can, however, be linked to the links that are identified in later studies where information sharing has important implications for the development of trust. The researchers found that the perceived responsiveness of the other members of the community increased trust in ability, and in the merged concept of benevolence and integrity. In the article, this is linked to the perception of cooperative intentions, which can be positive for building trust through benevolence and integrity. It is also pointed out that frequent response may be a sign of competence, which is closely associated with ability. Ridings et al (2002) also found confiding personal information as a significant predictor of the members' trust in ability, benevolence, and integrity. An explanation may be that trust can be described as a willingness to be vulnerable, and by making oneself less of a stranger to others one can also encourage trust (Ridings et al., 2002).

In their research on the influence of different types of information for trust in sustainability claims of a product, Zhang et al. (2016) made some interesting discoveries. First, they uncovered that the brand and company reputation had a significant effect on forming the consumers' trust in the integrity and benevolence of the claims. Secondly, an effect of government support of the claims was revealed on the perceived competence, which as mentioned often compares to ability. Lastly, the researchers found that information about support from NGOs on the sustainability claims influenced the consumers' trust in the benevolence and integrity of the product disclosures (Zhang et al., 2016).

3.5.2 Antecedents of cognitive and affective trust

Franklin & Marshall (2019) identifies communication, competence, and integrity as antecedents of cognitive trust because they all resonate with the logical responses of the

consumers. The researchers additionally point to satisfaction as a cognitive-dominant antecedent because the overall experience with the product or service, as well with the purchase experience is evaluated (Franklin & Marshall, 2019). In a study on trust in service relationships, Johnson & Grayson (2005), found a significant influence of the factor satisfaction with previous experience on cognitive trust. In their study, cognitive trust was also influenced by service provider expertise, product performance and firm reputation. These are factors that reflect how well the company is able to solve the problems of the consumer, and thus appeals to the cognitive response system.

In the context of brand trust in baby care toiletries, Srivastava et al. (2015) identified two main drivers of cognitive trust: brand predictability and brand innovativeness. By being predictable, the authors suggests that the companies remove risk and are more reasonable to be trusted by consumers (Srivastava et al., 2015). The brand innovativeness constructs involves that the consumers perceive the brand to be able to solve their problems and cater to their needs in new ways (Srivastava et al., 2015). Conflict resolution and sympathy was identified by Akrouit & Diallo (2017) to significantly influence the formation of cognitive trust in business-to-business relationships. If conflicts are perceived to be handled in a constructive way, trust will likely develop. Sympathy refers to the personal characteristics of a salesperson and involves whether the human interactions are perceived as pleasant and nice or not (Akrouit & Diallo, 2017).

When it comes to the antecedents of affective trust, shared values are often investigated. For instance, in their study on trust in service relationships, Johnson & Grayson (2005) found a significant effect of similarity on affective trust. Similarity refers to the extent that the two parties in an exchange have similar values and interests. This resonates with the categorization by Franklin & Marshall (2019) of shared values as one of the most prominent drivers for affective trust. Franklin & Marshall (2019) also point out benevolence as a salient antecedent. In addition, they reflect upon that although satisfaction is dominantly a cognitive antecedent, it can also serve as an affective antecedent. The reason for this is that satisfaction is partially determined by an emotional response to a process (Franklin & Marshall, 2019). The same can be said about firm reputation (Johnson & Grayson, 2005). Srivastava et al. (2015), found significant effects of the concept brand intimacy on affective trust, which “*expresses the degree of closeness, connectedness and bonding that the brand shares with its customers*” (Srivastava et al., 2015, p. 330).

Some studies also suggest that cognitive trust precedes the formation of affective trust in some ways. Srivastava et al. (2015) for instance, found a partial mediation effect of cognitive brand trust on the relationship between brand predictability and affective brand trust. In a business-to-business relationship context, Akrouf & Diallo (2017) found a significant effect of cognitive trust on affective trust. These findings support the assumption that affective trust can be formed in later stages of a relationship and are based on emotional responses to previous experiences (Johnson & Grayson, 2005).

3.5.3 Antecedents of green trust

The field of research on green trust is not as established as the one on trust. There are, nonetheless, some studies where antecedents of green trust are identified. In order to get a thorough understanding of how green trust is created based on the existing, yet limited research, we have conducted a systematic literature review on the topic. The database EBSCO Business Source Complete was chosen as a starting point for the review, as it contains content from more than 1800 peer-reviewed journals within economics and management (Business Source Complete, 2021), and is thus assumed sufficient. As the terms sustainable and green are used interchangeably in many contexts, the search was specified on titles containing “Green Trust” or “Sustainable Trust”, which resulted in 93 hits. We then specified the search on English academic articles that were available online, and thereby narrowed the hits down to 23 articles published from 2003 to 2020. Many of the articles investigated how green trust worked as an influence for various forms of behaviour, which is not relevant in this literature review. A manual screening of each of the articles reduced the list to 10 relevant studies that in some way investigated the antecedents of green trust. An in-depth screening revealed that six of these studies involved antecedents of green trust in a business-to-consumer perspective. These are summarized in Appendix A, and the main antecedents are described in the following section. The review was performed on February 17th, 2021.

Green brand image

The construct ‘green trust’ was proposed by Chen (2010) in a study of the creation of green brand equity on customers of information and electronic products in Taiwan. The empirical results showed a positive direct influence of green brand image on green brand equity, but also an indirect effect through green trust. Green brand image was defined as “*a set of perceptions of a brand in a consumer’s mind that is linked to environmental commitments and environmental concerns.*” (Chen, 2010, p. 309). Hence, the study suggests that green brand

image is important for green trust. The results are supported by More et al. (2019) that found a significant link between green brand image and green trust in Indian consumers.

Green brand loyalty

Green brand loyalty is defined as “*the level of repurchase intentions prompted by a strong environmental attitude and sustainable commitment towards an object, such as a product, a service, a company, a brand, a group, or so on.*” Chen, 2013, p. 297). More et al. (2019) investigated the effect of green brand loyalty among consumers of sustainable products in India. They found that green brand loyalty positively affects green brand trust. The relationship between green brand trust and green brand loyalty can be argued to be reciprocal, as green trust is also necessary for building green loyalty (Chen, 2010).

Reputation

Reputation is argued to be used as an important cognitive trusting base in initial encounters (Gefen, 2000). McKnight et al. (1998) describes reputation as attributes assigned to others through second-hand knowledge about them. It is especially important for customers when evaluating a product or service with limited information or experience (Zhang et al., 2016). Zhang et al. (2016) found a significant influence of brand and company reputation on the consumers’ trusting beliefs about the benevolence and integrity of the sustainability information provided by the company or brand. The researchers also identified that certification reputation, i.e., the consumers’ initial beliefs about a certification scheme, positively influenced the trusting beliefs (Zhang et al., 2016). Who you are and what people think of you therefore clearly has an impact on the likeliness of being trusted in your green communication.

Green perceived risk

In a later study by Chen and Chang (2012) on the same customer segment, the construct ‘green perceived risk’ was proposed. Green perceived risk was defined as “*the expectation of negative environmental consequences associated with purchase behaviour*” (Chen & Chang, 2012, p. 506), and proved to have a negative influence on green trust. In order to increase the consumers’ willingness to depend on the environmental performance of a company, it hence needs to invest in reducing the expected negative consequences of doing so. The same link was identified by Chen and Chang (2013), where green perceived risk also proved to be a mediator between perceptions of greenwashing and green trust.

Consumer's disposition to trust

Consumer's disposition to trust sustainability claims encompasses the "*tendency of respondents to trust information provided by sustainable claim regardless of other reasons*" (Zhang et al., 2016, p. 556). Many trust researchers have investigated the effect of the consumer's inherent propensity to trust on their actual trusting beliefs (e.g. Mayer et al., 1995; Ridings et al., 2002). The personality related trait has proven to be a strong indicator on the likeliness of trusting the item in question, and Zhang et al. (2016) investigated the same link in a context of sustainable information. As expected, the study showed that the individual's inherent propensity to trust affected their likeliness to trust information about sustainable practices.

Greenwash

Greenwashing is described as "*the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service*" (Chen & Chang, 2013, p. 489), and is proven, as one might suspect, to have a negative impact on green trust (Chen & Chang, 2013; More, 2019). Research done on organic food also shows that greenwash negatively moderates the relationship between the functional value of quality of a product and green trust (Zaidi et al., 2019). In other words, the perceived quality of a product will not influence the green trust towards the product to its full extent if the features of it are perceived as misleading. These effects can be understood in context with Morgan and Hunt's (1994) findings that perceived opportunistic behaviour negatively affects trust.

Value

Another factor that has been identified as influencing green trust is the value of the product or service. Chen and Chang (2012) proposed the construct green perceived value, defined as "*a consumer's overall appraisal of the net benefit of a product or service between what is received and what is given based on the consumer's environmental desires, sustainable expectations, and green needs*" (Chen & Chang, 2012, p. 505). The empirical results showed that green perceived value positively influenced green trust. The effects of value on green trust have also been investigated more in depth by Zaidi et al. (2019). In a study performed on organic food consumers in China, the researchers found a significant positive influence of the functional value of the products in terms of both quality and price, on green trust. This means that when the consumers find the quality and price to meet their expectations and needs for a sustainable product or service, they are more likely to trust it. They also uncovered a positive impact of the perception of the products' social value on green trust (Zaidi et al., 2019). The

social value describes the benefit a product or service gives because it is associated with one or more social groups (Sheth et al., 1991).

Disclosure of information

In order to communicate sustainability efforts in a trustworthy way, companies must provide their consumers with the right type of information. Zhang et al (2016) investigated the influence of different types of information on the formation of trust in sustainability claims and describe disclosure in this regard as having “*the objective of promoting more sustainable economies and innovation by providing consumers with information to help them make better purchasing decisions.*” (Zhang et al., 2016, p. 552). The study used a second-order construct of trust with the three dimensions: competence, integrity, and benevolence. Zhang et al (2016) found no significant indication that additional information to verify an eco-label made the consumers trust it more. What they did find, however, was that information about government support in the form of for example certification to protect the consumer from fraud or falsification, had a significant indication of trusting beliefs in the competence of the brand. Support by NGO’s had effects on the consumers’ trusting beliefs of the brand’s benevolence and integrity (Zhang et al., 2016). In other words, support from external and more neutral actors may help consumers recognize information that can be trusted in the jungle of sustainability claims.

Consumer confusion

Consumers have restricted cognitive abilities to process information (Chen & Chang, 2013). Because of this, the amount and type of information a company provides about a product or service affects the consumers’ perceptions in many ways. A factor that negatively influences green trust is green consumer confusion (Chen & Chang, 2013). The construct fathoms a “*consumer failure to develop a correct interpretation of environmental features of a product or service during the information processing procedure.*” (Chen & Chang, 2013, p. 491). Consumer confusion about environmental efforts and impacts can be a result of conflicting or misleading information from companies and should be avoided in order to build green trust (Chen & Chang, 2013).

3.6 Co-Creation

Co-creation emerged in marketing and consumer research in the early 2000s and has since challenged the traditional concept of what a market should be (Galvagno & Dalli, 2014). The

main reason for this is that the consumers have become more informed, active, and connected thanks to technological progress, making it much easier for them to access information, to network and experiment. The consumers are also getting a more global view and have greater possibilities to express their minds when they disagree with something (Prahalad & Ramaswamy, 2004b). Because of this they also demand more, and companies thus need to rethink the way they create value in order to face the future of competition. Value creation has traditionally happened thanks to activities and resources *inside* the firm before it has been transferred to consumers through purchase (Prahalad & Ramaswamy, 2004c). Co-creation, on the other hand, represents an opportunity for “*joint creation of value by the company and the customer*” (Prahalad and Ramaswamy 2004b, p. 8), and is seen as “*an active, creative and social process based on collaboration between organizations and participants that generates benefits for all and creates value for stakeholders*” (Ind et al., 2013, p. 9).

Co-creation puts consumers and companies on the same playing field to create value together, instead of being on opposite sides in the traditional supply-demand model (Galvagno & Dalli, 2014). Hatch and Schultz (2010) argue that co-creation is also about the creation of a common identity between the co-creators. An important aspect of co-creation is that it is experience focused (Prahalad & Ramaswamy, 2004b). This means that every point of interaction between consumer and company, as well as other actors in the network, pose opportunities for creating and extracting value (Prahalad & Ramaswamy, 2004c). Prahalad and Ramaswamy (2004b) postulates that the value lies more in the experience itself, not the product. According to Albinsson et al. (2016) value co-creation is dependent on firms to move towards a more holistic stakeholder approach where each interaction can be utilized to create mutual value for their network of partners and consumers. It can thus be seen to be more than just a business-consumer relationship and includes the full stakeholder perspective (Hatch & Schultz, 2010). Co-creation is a vast concept that is used in many different contexts (Albinsson et al., 2016). In this thesis, however, we will focus on value co-creation between a customer and a firm.

The concept of co-creation is gaining high interest among companies due to their realization that customers no longer are passive consumers, and that they possess important insights and expertise (Cova & Dalli, 2009; Ind et al., 2017). Supporting this, is the movement towards more open organizations, by now also including outsiders in their innovation projects (Chesbrough, 2006; Ind et al., 2017). At the same time, the online development plays a crucial role in how companies view their customers (Ind et al., 2017). Co-creation is becoming more and more prominent as commerce is moving to online platforms where consumers to a greater

extent can influence their own experience (Nysveen & Skard, 2015). In addition, the emergence of social media platforms is a prominent enabler of co-creation activities (Hatch & Schultz, 2010).

As both the consumer and the company define and solves the consumer's problem together (Nysveen & Skard, 2015), and through the ability it gives for companies to differentiate themselves (Ind et al., 2017; Prahalad & Ramaswamy, 2004c), co-creation gives potential for creating a competitive advantage (Albinsson et al., 2016). Using co-creation as a means to create competitive advantage is one of the two outer extremes in a co-creation continuum, in which companies decide whether to choose a more strategic or tactical use of co-creation (Ind et al., 2017). The strategic approach view customers as long-term innovation partners in order to create competitive advantage, while the alternative extreme is a tactical use of co-creation as a method for market research (Ind et al., 2017). In this, customers are used as means to test ideas and gather customer insights in order to facilitate for speedier and more flexible gathering of market insights (Ind et al., 2017).

Using co-creation can nonetheless also contribute to other benefits for the companies. First and foremost, co-creation gives companies deeper insights into their customers' needs and wants (Ind et al., 2017; Payne et al., 2008), it gives opportunities for increased creativity by the inclusion of outsiders (Kristensson et al., 2004), and as customers' point of view is included, they increase the potential for more relevant ideas (Ind et al., 2017; Payne et al., 2008). Other crucial benefits related to the use of co-creation is speed to market, reduced risks, and potential cost efficiencies (Hatch & Schultz, 2010; Ind et al., 2017). In addition, including customers in co-creation activities gives the potential for increased connection between customers and company (Ind et al., 2017). This, together with various research supporting the notion, indicates that co-creation influences perceived brand value (France et al., 2020; France et al., 2018; France et al., 2015; Ind et al., 2020). Lastly, it is also argued to enhance loyalty from the customer to the firm (Cossío-Silva et al., 2016; France et al., 2020).

Nevertheless, co-creation also creates some challenges. Albinsson et al (2016) emphasize that co-creation is not something one can merely implement in the marketing department, it requires a change in "*practices, policies and organizational structure*" (Albinsson et al, 2016, p.53). Prahalad and Ramaswamy (2004b) also recognizes that co-creation can be resource demanding, especially for companies who must interact individually with many customers with different needs. It also demands a dynamic approach to adapt to shifting consumer

preferences, but the authors also point to this as a potential area for efficiency gain over time. Another challenge is that the two-sidedness of the concept demands a clear distinction of responsibility for risk. Moreover, some managers or businesses generally value to be in control, and regard customers to lack the necessary knowledge to contribute in a meaningful way (Ind et al., 2017). Thus, it requires a will to listen and learn from others also outside of the organisation (Ind et al., 2017; Ind et al., 2013). Another demanding aspect of co-creation is that it requires an ability to manage the collaboration between the company and the customers, both in terms of communication and managing expectations (Payne et al., 2008).

3.6.1 The DART framework

Co-creation is all about interaction between the company and the customers, which despite several benefits can be seen to be rather demanding for the company, thus raising questions about how to best go about achieving it (Prahalad & Ramaswamy, 2004a). Prahalad & Ramaswamy (2004a, 2004b, 2004c) introduces four building blocks of co-creation that represent co-dependent organizational systems (Albinsson et al., 2016) for interaction between the company and the customers. These building blocks create the DART framework for value co-creation (Prahalad & Ramaswamy, 2004a, 2004b, 2004c), and reflects the dimensions of co-creation, namely dialogue, access, risk assessment, and transparency.

Dialogue

Dialogue is about the interactivity with the customer, it is about conversation and engagements, and it is about both parties being willing to act (Prahalad & Ramaswamy, 2004a, 2004b, 2004c). For co-creation to take place, dialogue needs to be more than listening to the customer. Dialogue “*entails empathic understanding built around experiencing what consumers experience, and recognizing the emotional, social, and cultural context of experiences,*” (Prahalad & Ramaswamy, 2004c, p. 13). Moreover, it entails two equal parties learning from each other through knowledge sharing about common issues (Prahalad & Ramaswamy, 2004a, 2004b, 2004c). In order for the customer to become an equal party in this dialogue, it is also important to have access, risk assessment, and transparency in place (Albinsson et al., 2016; Prahalad & Ramaswamy, 2004a, 2004b). This relates to Prahalad and Ramaswamy (2004c)’s identified features of effective co-creation dialogue; (1) focus on issues that are of mutual interest, (2) appropriate forum for dialogue to take place, and (3) rules of engagement to secure productivity (Prahalad & Ramaswamy, 2004c). It is worth noting that it not only takes place directly between the company and customer, it can also happen across

several different channels and arenas (Hatch & Schultz, 2010) during the entire co-creating process (Payne et al., 2008). Overall, dialogue facilitates for new mutual understanding between the parties (Prahalad & Ramaswamy, 2004c) and can be seen as joint interactive learning (Ballantyne, 2004; Payne et al., 2008).

Access

Access is about having resources available, including for example tools, information, time, and people that help facilitate for dialogue, and thus facilitate for co-creation (Albinsson et al., 2016; Prahalad & Ramaswamy, 2004a, 2004b, 2004c). Moreover, it entails customers having needed resources to be able to create value (Payne et al., 2008). In order to facilitate for co-creation, companies need to make sure that the customers have access to needed resources in order to engage in the process, which influences how, when, and where co-creation takes place (Albinsson et al., 2016). This can be done either by adding to customers' competence, or by facilitating for their ability to better utilize existing resources (Payne et al., 2008). Access is also about the transition from where the goal of consumers is ownership of products, to a goal of having access to such products, which create new market opportunities for business' (Prahalad & Ramaswamy, 2004c) and thus a fundament in co-creation opportunities.

Risk assessment

Risk assessment involves the customer being able to assess the risk involved in the co-creation process, as customers as co-creators also become co-responsible, and thus will want to engage more in risk assessments (Prahalad & Ramaswamy, 2004c). It additionally entails their opportunity to assess whether engaging in co-creation, and the product created will cause them personal harm (Albinsson et al., 2016; Prahalad & Ramaswamy, 2004a, 2004b, 2004c), going hand in hand with the trade-off between risk and benefits of a decision (Prahalad & Ramaswamy, 2004c). When customers actively engage in innovation activities, risk assessment is also about dealing with for example intellectual property rights and ownerships challenges (Hatch & Schultz, 2010). Furthermore, risk assessment is about more than just information sharing with customers, it also includes giving them the methods needed in order to assess both personal and societal risks (Prahalad & Ramaswamy, 2004c). This means that companies need to move from seeing information and methods sharing with customers as a threat, and rather treat them as equal partners (Albinsson et al., 2016).

Transparency

Transparency concerns equalling out the traditional information asymmetry between

customers and businesses (Prahalad & Ramaswamy, 2004c). This information asymmetry cannot be upheld by companies to the same extent as before, and transparency has now become a fundament in creating collaborative behaviour among customers (Prahalad & Ramaswamy, 2004c). For customers to assess risk and have access to needed information and methods, which again is needed to facilitate for good dialogue, companies need to be transparent in their processes, operations, and strategic actions (Albinsson et al., 2016; Prahalad & Ramaswamy, 2004a). For transparency to be in place “*the customer must know what is happening at all times and why, while the firm must know the customer’s desires, concerns, and requirements,*” (Prahalad & Ramaswamy, 2004c, p. 21). Important in this is active involvement of customers, as companies’ own interpretations of the customers’ wants and meanings do not suffice (Hatch & Schultz, 2010). This may be counter intuitive for many companies and supports the need of a view where customers is seen as partners (Albinsson et al., 2016).

4. Hypotheses and research model

Co-creation's positive effect on trust has been suggested by several scholars (Franklin & Marshall, 2019; Iglesias et al., 2013; Iglesias et al., 2020; Nysveen & Skard, 2015; Prahalad & Ramaswamy, 2004b; Urban et al., 2009). Franklin and Marshall (2019) for instance found a significant effect of co-creation on trust. In a study of consumer's reaction to co-creation and corporate social responsibility (CSR), Iglesias et al. (2020) found a significant effect of co-creation on consumer trust. Skard and Nysveen (2015) suggests a mutual dependence between trust and co-creation, where trust is an important foundation for facilitating collaboration in the first place, but where dialogue, access, risk assessment and transparency may facilitate trust as well. Co-creation is a vast concept that has many areas of application. The DART-framework concretizes dimensions of value co-creation and has validated through previous studies (e.g., Albinsson et al., 2016; Nysveen et al., forthcoming). Using DART in empirical research makes it possible to measure co-creation in a way that can suggest valid and specific implications, and thus make it easier for managers to know where to make changes in their business model in order to answer to significant influences on green trust.

As the concept of green trust is based on trust, but with an environmental performance dimension (Chen, 2010), we propose that the dimensions of co-creation may also have a positive effect on green trust. In a study by Iglesias et al. (2020), CSR and co-creation showed a positive correlation, and they both positively affected trust. The researchers found similarities in the characteristics of both CSR and co-creation as they both emphasize creating value for an eco-system of stakeholders in a holistic perspective (Iglesias et al., 2020). Although CSR and environmental performance is not specifically the same, we can expect some of the same effects as both concepts are taking responsibility beyond mere economic profits. In order to solve the environmental problems of our time, consumers are dependent on efforts from companies. At the same time, companies are dependent on consumers to help define the sustainability problem at hand, and later to solve it. The interdependency between the parties to create sustainable solutions is reminiscent of characteristics of co-creation (Iglesias et al., 2020). Moreover, interdependency is identified as a precondition for trust (Rousseau et al., 1998). In the following, we will develop hypotheses and suggest a research model based on our first research question, *what is the effect of co-creation on green trust*, across the four dimensions of co-creation and three dimensions of green trust.

4.1 Dialogue on green trust

Dialogue, being about the conversation and engagements between consumers and company (Pralhad & Ramaswamy, 2004a, 2004b, 2004c), can be seen to be a crucial part of relationship building. Communication is seen as a type of interactive dialogue (Ndubisi & Wah, 2005; Theron et al., 2011) which is necessary in order to align expectations and thus avoid misunderstandings in a trust relationship (Theron et al., 2011). Prahalad and Ramaswamy (2004b) further highlights that dialogue positively influences the customers willingness to trust. Engaging in dialogue is more than just talking and listening, it is also about understanding the context the other party finds themselves in (Pralhad & Ramaswamy, 2004c), and thus develop a common understanding (Ballantyne, 2004; Nysveen & Skard, 2015). Güemes and Resina (2019) mentions how dialogue sustained over time helps balance out prejudice and disparities, which creates the fundament for mutual trust. Dialogue is also about exchanging ideas and input, which relate to knowledge sharing (Franklin & Marshall, 2019). At the same time, Haesebrouck et al. (2021) argues that knowledge sharing is part in building trust due to the perceived psychological bond it contributes to.

Encouraging exchange of ideas through active dialogue is especially important when addressing a green perspective, considering customers' scepticism of companies' green measures (Chen & Chang, 2013; Iglesias et al., 2020; Nyilasy et al., 2014; Pope & Wæraas, 2016). Iglesias et al (2020) emphasize that commitment to understand the customers' needs through active dialogue is the complete opposite of greenwashing and disclosing only selective information and can hence enhance green trust.

As mentioned, co-creation is a relationship building activity that positively influences trust through idea and knowledge sharing (Franklin & Marshall, 2019; Swift & Hwang, 2013). This can be linked to the ability dimension of trust, as knowledge sharing is likely to influence the level of perceived ability of the trustee through companies' opportunity to showcase their knowledge, resources, and competences (Nysveen & Skard, 2015). The increased understanding achieved through dialogue also offers an opportunity for increased understanding of intentions and motives behind one's actions. Consequently, the potential for perceived well-meaning, and hence the perceived benevolence, increases. Common understanding may also argue for why dialogue positively influences the integrity aspect of trust, as it contributes to increased understanding of values and principles (Nysveen & Skard,

2015). We therefore argue that dialogue will positively influence green trust, and propose the following hypothesis:

Hypothesis 1: Dialogue has a positive influence on green a) ability, b) benevolence, and c) integrity

4.2 Access on green trust

An important aspect of access in the co-creation literature, is that the accessibility should also facilitate a possibility for customers to modify and extend content (Leavy, 2012; Nysveen, forthcoming). Mazur & Zaborek (2014) emphasize that this also includes solutions which gives consumers increased freedom of choice. Giving customers the freedom to make their own decisions about how and when to access the product, means that the company must let go of some control. It may also be resource consuming for the company, both in terms of people and time. If the customers feel that they are trusted with opportunities and resources, one can argue that they in turn may also trust the company more. Technology developments are making it easier to give customers access to information and resources, and for companies to access customers' feedback and ideas. This mutual information sharing is proven to positively influence trust in different studies (Breneman & Karimov, 2012; Zhang & Li, 2019).

Mezger et al. (2020) identified openness as one of the key constructs for building green trust, within which being accessible is a prominent feature. Engaging with its consumers by being accessible can therefore help a company build green trust (Mezger et al., 2020). As the customers are given more freedom to make own decisions, access to information, tools and time can also counteract the perception of greenwashing in environmental claims, which is a negative driver for green trust (Chen & Chang, 2013).

The ability dimension of trust can be strengthened through access in the sense that it can give consumers new insight in the company's competence (Nysveen & Skard, 2015). Furthermore, access can increase brand intimacy, as the consumers can get a stronger feeling of connectivity and bonding with the company, which increases their affective trust (Srivastava et al., 2015). Benevolence is central in affective trust and can be strengthened through the perception that the company takes the consumer seriously by sharing information and tools with them. When a company offers its consumers time and the opportunity to assess information themselves, it shows that they care and are willing to offer more than just a finished product or service. This

builds up the benevolence dimension of trust (Nysveen & Skard, 2015). By giving consumers access to resources and information, Nysveen and Skard (2015) argue that companies will be able to show they follow principles and values that the consumers can relate to, and thus strengthen the perceived integrity. Consumers who experience that they share the environmentally conscious values with the company are likely to also trust them more (Johnson & Grayson, 2005). In sum, we therefore propose the following hypothesis:

Hypothesis 2: Access has a positive influence on green a) ability, b) benevolence, and c) integrity

4.3 Risk assessment on green trust

In the development of the DART-framework, Prahalad and Ramaswamy (2004b) claim that risk assessment helps improve the possibility for consumers and companies to build trust together. This is in part because giving consumers the opportunity to assess their own risk eliminates some of the traditional information asymmetry between the company and the consumer (Mazur & Zaborek, 2014). In a green context, risk assessment is especially relevant as there are many risks involved in making environmentally *unconscious* decisions for both companies (Canning & Hanmer-Lloyd, 2007) and consumers (Chen & Chang, 2012). Green perceived risk has been researched by among others Chen and Chang (2012, 2013), where it was proven to negatively influence green trust in both studies. The negative influence results from both expected consequences and uncertainty Chen and Chang (2012). If a company is successful in removing this uncertainty, by keeping consumers fully informed and providing comprehensive information about the risks and benefits, the green trust can consequently be strengthened.

Nysveen and Skard (2015) argue that a responsible disclosure of risks that gives the consumers a chance to assess them will indicate a high degree of ability, benevolence, and integrity in the company. They also argue that a company can be perceived as a competent partner by sharing a risk analysis with the consumer, which enhances their ability dimension of trust (Nysveen & Skard, 2015). By sharing information with the consumer about the risks of their consumption, and not just showing the benefits of it, the company can show that they actually care about the consumers' needs, and hence strengthen the perceived benevolence (Nysveen & Skard, 2015). At the same time, they can signal that they take the consumers' values and interests seriously, which builds trust through positive emotions (Johnson & Grayson, 2005).

When it comes to integrity, acting responsibly within the moral frames that are widely accepted by the consumers is important (Mayer et al., 1995). Disclosing not only the upsides of a consumption, but also which negative impacts it has on the environment shows that the company acts responsibly and may therefore increase the sense of integrity. Risk assessment can reduce uncertainty and lead to a company becoming more predictable, which in turn builds trust through cognitive responses (Srivastava et al., 2015). We therefore argue that risk assessment positively influences the three dimensions of green trust, and propose the following hypothesis:

Hypothesis 3: Risk assessment has a positive influence on green a) ability, b) benevolence, and c) integrity

4.4 Transparency on green trust

Prahalad and Ramaswamy (2004c) highlights the importance of transparency in relation to trust, where they argue that “*transparency of information is necessary to create trust between institutions and individuals,*” (Prahalad & Ramaswamy, 2004c, p. 32). This view is further supported by Nysveen and Skard (2015) who argues that transparency towards co-creating partners is essential to avoid uncertainty and thus be able to facilitate for mutual trust. The exposure and sharing of information and resources that transparency require entails a level of vulnerability (Franklin & Marshall, 2019). It is also proven that confiding personal information with others positively influences trust (Ridings et al., 2002). The willingness to be vulnerable and making oneself less of a stranger to others can thus encourage trust (Ridings et al., 2002).

Related to the overall problem with green trust through consumers’ scepticism of companies’ green measures (Chen & Chang, 2013; Iglesias et al., 2020; Nyilasy et al., 2014; Pope & Wæraas, 2016), transparency creates the possibility of less consumer confusion through open information sharing and full disclosure. Increased transparency also makes greenwashing less attractive, as claims can no longer be unsubstantiated or misleading without being revealed. Through counteracting the negative effects of greenwashing on green trust, increased transparency is likely to contribute to build green trust.

Transparent information can influence the perceived ability of a company, as information about the company’s competencies is available and thus reduces the need for individual

assumptions and interpretation. In other words, by having insights into a company's internal processes, the consumers get an increased understanding of the company's abilities (Nysveen & Skard, 2015). Transparency can also relate to the benevolence aspect of trust where benevolence can be seen in relation to motivation to lie (Hovland et al., 1953). Having benevolence would then relate to situations with low motivation to lie, in line with transparency. In addition, transparency may strengthen the benevolence dimension because companies show a willingness to facilitate and support their consumers through open information sharing (Nysveen & Skard, 2015). Transparency may influence the integrity dimension of trust through the opportunity to show one's principles (Nysveen & Skard, 2015) and thus give an opportunity to find common values. Integrity has also been talked about as the level of honesty (Kumar et al., 1995a, 1995b), where transparency would imply a high level of honesty, and thus have a positive influence on trust. We therefore propose the following hypothesis:

Hypothesis 4: Transparency has a positive influence on green a) ability, b) benevolence, and c) integrity

4.5 Research model

Based on the implications from the literature review and the theoretical foundation of trust and co-creation, we have developed the research model displayed in *Figure 1* below.

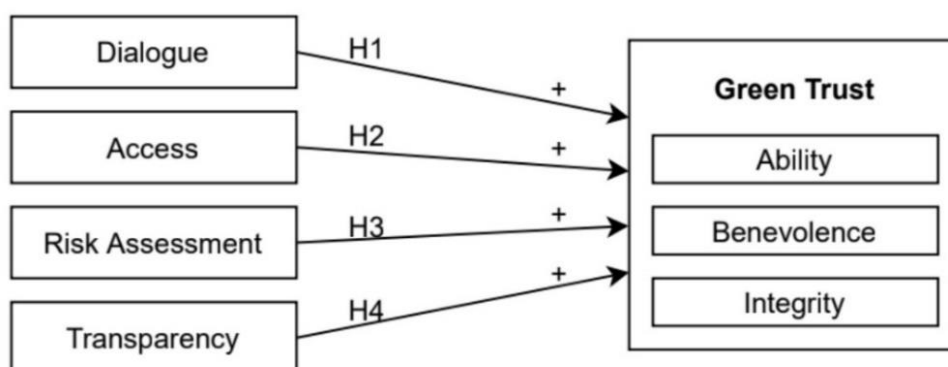


Figure 1: Research model

In this research, we aim to investigate the influence of the DART-dimensions; dialogue, access, risk assessment and transparency, on green trust, constructed by the three dimensions ability, benevolence and integrity from Mayer et. al (1995)'s integrative model on trust. More

specifically, when testing for instance H1, we will investigate the effect of dialogue on a) ability, b) benevolence and c) integrity. The same applies for the other hypotheses. Thus, the DART-framework represents the independent variable, and green trust the dependent variable. The influence is expected to be positive across all the hypothesized relationships.

5. Methodology

5.1 Research design

The purpose of this research is, as previously mentioned, to look at co-creation as antecedents of green trust, and the corresponding implications this has for the development of sustainable business models. In order to do this, we conducted a mono-method quantitative study, meaning that it is used one quantitative data collection method with corresponding data analysis (Saunders et al., 2019). Due to the time constraints of a master thesis, the research is conducted as a cross-sectional study by the use of a digital survey through Qualtrics. Using a survey allows for an easy and effective collection of large amounts of standardised data (Saunders et al., 2019), which makes statistical analyses and comparisons possible. In addition, it can help explore the relationship between variables, which is an important aim in our research. All methodological analyses were conducted using SPSS 27.

5.1.1 Population

The target population of our research was bachelor and master students at the Norwegian School of Economics (NHH), where both Norwegian and international students were targeted. NHH students as a population are firstly seen to be of relevance due to their potential representation of a younger generation that, as previously established, generally favours more sustainable brands (First Insight, 2020) and spend more time searching for information to verify brands sustainability efforts (Haller et al., 2020). Thus, the younger generation is of high importance for companies when facing the green trust challenge addressed in this research, and when wanting to adapt in line with changing consumer behaviours. Secondly, NHH students represent a population which we have easy access to, which makes data collection effective. Thus, it may potentially positively influence the amount of data collected, which is important in validation and discussion of findings.

Calculated based on numbers from NHH's annual report (2020), bachelor and master students at NHH constitute a gender distribution of 41.9 % female and 58.1 % male students (*Table 2*), not considering dropout numbers during bachelor or master level. This also includes international full-time students, but not exchange students. Such numbers are seen to contribute to minor differences, and the calculated gender distribution is thus considered to be representative.

5.1.2 Pre-test

In order to check the level of quality, understanding, and potential errors in the survey, we sent out a pre-test in two rounds. In these tests the purpose was not to test quality of responses, but rather testing of the survey experience. The first round was conducted 11th of April, where we sent out the survey for initial feedback to 1 person. Based on this feedback, in addition to supervisor feedback, we made adjustments to the survey regarding question formulation, specification of instructions and messages, and fonts. We also added an attention test in which the respondents were asked to rate 7 on a specific question (see Appendix B2.10). In addition, we changed the question format of one of the control questions. When this was completed, we sent out the survey for a second round of feedback the 12th of April to 2 people, where the main purpose was to test for understanding and time needed to complete the survey. The main adjustments done after the final test round was to change some minor question formulations and message specifications.

The pre-test was distributed using a distribution link used only for test purposes and was distributed directly to the testing participants through social media. All test respondents were NHH students on master's level, with 2 female and 1 male respondents. The survey was also tested on both computer and mobile phones, and through iOS and Android to check for any problems with the user interface. None of the data collected through the pre-test were stored or used in the research analyses. The overall survey was further copied into a new Qualtrics project to secure no pre-test data was transferred into the main survey distribution.

5.1.3 Data collection

Primary data through an online survey was chosen as our main and only source of data collection as this gives the opportunity to collect data specific to our research questions (Saunders et al., 2019). The survey was, as previously mentioned, made through Qualtrics (see Appendix B2) where settings were chosen in order to secure anonymized responses, each respondent could only answer the survey once, and they could not go back to previous questions while answering. Data from partially completed responses was temporarily stored for one week. Thus, respondents who previously started the survey would continue where they left off if they re-entered the survey within one week, but this information was not announced.

On the 14th of April, a survey link was distributed through e-mail together with an invitation text (Appendix B1) to all NHH bachelor and master students through their student e-mails.

We later sent a reminder on the 19th of April through the same channel after retrieving only 52 respondents in the first round. The 21st of April after retrieving 78 respondents, we decided to send out reminders through Messenger and Facebook groups to our NHH network. This included the groups: “MS – active members”, Pikekoret Sangria, “Vi som begynner på NHH høsten 2016”, “NHH CEMS students”, and “NHHS Green Team”. Here we reached out to groups with current NHH students, the link shared was the same survey distribution link as sent by e-mail, and the message sent referred to the e-mail sent through student e-mails with a more personal request for survey completion.

On the 26th of April, we decided to close the survey due to time considerations. A total of n=208 respondents had started the survey. After removing unfinished survey respondents (n=103), we eliminated the respondents who did not pass the attention test in the middle of the survey, asking them to answer “7” on a specific question (see Appendix B2.10). This left the final sample number of n=90 respondents. It was decided to not eliminate any age groups or other responses as the attention test eliminated most of the age outliers and other responses seen to be of low quality. Reaching out to NHHS Green Team could potentially generate biases in responses due to the increased interest of the topic among group members, but this was evaluated to generate minor issues as the total increase in respondents from these groups where only 12 respondents divided among the 5 groups.

When clicking on the link to the survey, the respondents were first introduced to some practical information regarding their participation and asked to click a button to consent that they let us use their responses for research purposes (Appendix B2.1). If the respondents did not consent, the survey was terminated, and they were thanked for their time (Appendix B2.2). The other respondents were on the next page instructed to think of a recent purchase situation where they bought an item of clothing or shoes from a particular brand. This category was chosen because it is an industry where sustainability, both in terms of issues and efforts, have been addressed in the recent years. We therefore believe most people are able to relate green trust to this category of products in some way. The respondent was then asked to “click here when you have made your choice” (Appendix B2.3), which is a function that was created to reduce the number of respondents who just click their way through the survey without actively considering the statements. On the next page, more information about how the statements are formulated were presented, together with an encouragement to answer truthfully and finish the entire survey (Appendix B2.4). In the survey itself, all questions were made mandatory, meaning that respondents had to answer all questions in order to proceed to ensure complete

responses. If a question were not answered, a notification of mandatory response would show before they could proceed to the next question. Upon completion, the respondent was thanked for their participation, as well as informed of the main purpose of the study (Appendix B2.16).

5.2 Measurement

The variables of DART and green trust were measured using a seven-point Likert scale where 1 indicates complete disagreement and 7 indicates complete agreement to the statements. We used existing scales and adopted the items to fit our purpose. See *Table 1* for complete list of the items. The complete survey that was sent out to the respondents can be seen in Appendix B2.

DART-dimensions

The variables Dialogue, Access, Risk Assessment and Transparency were measured using items that are adapted from Albinsson et al. (2016) and Nysveen et al. (forthcoming). The items were adapted to fit a product category, as opposed to a service category. In addition, some minor changes to the formulations were made in order to make them easy to answer in the context we are investigating. An important aspect of this was making the language as intuitive as possible, as most of the respondents will not have English as their first language. Following the example of Nysveen et al. (forthcoming), we decided on four items in each dimension. This was done to keep the length of the survey to a minimum to reduce respondent withdrawal, but still capture the essence of the dimensions through the most important items. For all the four dimensions, the items were based on Nysveen et al. (forthcoming)'s adaptations of Albinsson et al. (2016), where the items with the highest factor loadings were mainly chosen. An example of the formulation of the items is “Brand” communicated with me to receive input on how to improve my product experience”, where “Brand” refers to the provider of the recently purchased clothing or shoe item of the respondent's choice.

Green Ability

According to Bhattacharjee (2002), ability should be measured with three items covering the provider's expertise, information, and overall ability. Overall ability is included in GA1 (see *Table 1*), which is adapted from Nysveen and Skard (2016). GA2 reflects the provider's expertise (Skard & Nysveen, 2016) by asking about the perceived competence of the provider. Lastly, GA3 is adapted from Zhang and Li (2019) and entails the provider's information by asking to what extent the provider is knowledgeable about their products' environmental

impact. In order to create a scale for green ability, we added an environmental aspect to each item, inspired by Chen (2010). An example is the item GA2 that is created to include the provider's expertise, which now also fathoms its environmental expertise through the formulation: "I believe "Brand" has good competence to provide environmentally friendly products".

Green Benevolence

Green benevolence is also measured using three items, and taps into empathy, benevolence and resolving concerns according to Bhattacharjee (2002). Item GB1 is adapted from Nysveen and Skard (2016) and is included to cover empathy by considering the needs and expectations of the respondent. GB2 and GB3 are adapted from Donthu and Porter (2008) and reflects benevolence through considering other's welfare than its own and resolving concerns through not just thinking of its own interests when problems arise. This dimension is also made green by adding environmental concerns from Chen (2010). Green benevolence therefore entails benevolence towards the environment as a whole, and not just towards the customer. An example is GB2, which reads "'Brand" considers the welfare of its customers and the environment, as well as its own, when making important decisions".

Green Integrity

According to Bhattacharjee (2002), integrity items should cover the company's fairness towards its customers. We therefore adapted the scale for green integrity to cover fairness in the commitments the companies make towards the environment and their customers. The three items are all adapted from Donthu and Porter (2008), but with environmental formulations inspired by Chen (2010). To exemplify, the first item GI1 is "'Brand" keeps promises it makes to its customers about its environmental efforts".

All items are summarized in *Table 1* on the next page.

Variable		Items (completely disagree (1) - completely agree (7))	Source
Dialogue	D1	“Brand” communicated with me to receive input on how to improve my product experience	Adapted from Albinsson et al. (2016) and Nysveen et al. (forthcoming)
	D2	“Brand” was interested in communicating with me about how to design and deliver a high-quality product experience	
	D3	“Brand” used multiple communication channels to encourage greater exchange of ideas with me about the product experience	
	D4	I had an active dialogue with “Brand” on how to add value in the product experience	
Access	A1	“Brand” let me decide how I could receive their product	Adapted from Albinsson et al. (2016) and Nysveen et al. (forthcoming)
	A2	I had many options to choose from regarding how to receive “Brand’s” product	
	A3	It was easy for me to receive “Brand’s” product when, where, and how I wanted	
	A4	“Brand” let me decide how they should send or communicate their product to me	
Risk assessment	R1	“Brand” provided me with comprehensive information about how they assessed benefits and risks of their product	Adapted from Albinsson et al. (2016) and Nysveen et al. (forthcoming)
	R2	I received comprehensive information about the benefits and risks of “Brand’s” product	
	R3	“Brand” fully informed me about benefits and risks stemming from using “Brand”	
	R4	“Brand” fully informed me about benefits and risks of purchasing and using its product	
Transparency	T1	“Brand” treated me as an equal partner	Adapted from Albinsson et al. (2016) and Nysveen et al. (forthcoming)
	T2	“Brand” behaved accountably towards me	
	T3	“Brand” fully disclosed information about their product and why they recommended it	
	T4	“Brand” was willing to answer openly to all my questions	
Green Ability	GA1	I am confident that “Brand” is able to deliver environmentally conscious products	Adapted from Chen (2010) Nysveen & Skard (2016) and Zhang & Li (2019)
	GA2	I believe “Brand” has good competence to provide environmentally friendly products	
	GA3	“Brand” is very knowledgeable about their products’ environmental impact	
Green Benevolence	GB1	“Brand’s” environmental efforts comply with my needs and expectations	Adapted from Donthu & Porter (2008), Chen (2010) and Nysveen & Skard (2016)
	GB2	“Brand” considers the welfare of its customers and the environment when making important decisions	
	GB3	“Brand” considers environmental interests when problems arise	
Green Integrity	GI1	“Brand” keeps promises it makes to its customers about its environmental efforts	Adapted from Donthu & Porter (2008) and Chen (2010)
	GI2	“Brand” is perfectly honest and truthful about its environmental commitments	
	GI3	“Brand” can be counted on to do what is right for the environment	
Gender	G		
Age	A		
Environmental behaviour	EB	I often consider sustainability when making purchase decisions	Sustainable Brand Index (2019)

Table 1: Measurement items

Control variables

In the process of choosing control variables, we considered the length of the survey to be of great importance as we wanted as high completion rate as possible. We therefore decided to limit the number of control variables to *age*, *gender* and *environmental behaviour*. Age and gender were mainly selected to control the sample's representativeness of the population. In addition, reports suggest that importance of green trust and preferences towards sustainability varies with age (e.g. Amad et al., 2019; First Insight, 2020; Haller et al., 2020). Other researchers have also used age as a control variable in comparable studies (e.g. More, 2019; Zaidi et al., 2019). Gender is by many (e.g. Johnsson-Latham, 2007; Khan & Trivedi, 2015; OECD, 2020) suggested to have an impact on sustainable consumption, where women are believed to make more environmentally friendly purchase decisions than men. We therefore included this control variable to see if the same pattern can be recognized in relation to green trust. Environmental behaviour was added to investigate if an initial positive behaviour towards green purchase decisions affects the outcome on green trust. We decided to use a single-item construct to limit the number of items and adapted the formulation from the Sustainable Brand Index (2019). The statement reflects how often the respondent considers sustainability when making purchase decisions. This was chosen because it captures the respondents' behaviour, which also says something about how they consider the importance of sustainability. In other words, the single-item construct provides us with information about the respondent's self-reported environmental behaviour, which is affected by their underlying environmental attitudes.

5.2.1 Measurement validity

In order to reduce measurement error, some important aspects of validity have been considered. Validity refers to whether the measures accurately represent what they are meant to represent or not (Hair et al., 2014), and concerns systematic errors (Breivik, 2020). Although validity cannot be proven, there are several ways to develop support for it. First of all, an evaluation of the face validity, also referred to as content validity (Breivik, 2020), gives a pointer of the degree to which the measurement items cover the intended concept we set out to measure. The measurement items used to capture the overall concept co-creation have been used in previous research with satisfactory results (Albinsson et al., 2016; Nysveen et al., Forthcoming). The measurement scale is, however, quite newly developed and can thus give somewhat unstable solutions. In the survey conducted for this thesis, the items are adapted to

fit a product within the shoe- or clothing industry. The validated scales that were used for inspiration covered service offerings (Nysveen et al., forthcoming), and product- or service offerings (Albinsson et al., 2016). One must therefore be aware that some meaning may be distorted in the adaptation. An issue that was problematized was whether the concept “product offering” has an equally intuitive meaning as “service offering” or not in the access-construct. It was therefore decided to remove the word “offering”, which may influence the overall meaning of the access-construct. Overall, adaptations were made with both the concerns for keeping the meaning of the items as identical as the validated scale as possible, and the concerns of ensuring intuitive interpretation by the respondents in mind.

Scales for measuring trust through the three dimensions ability, benevolence and integrity has been developed and validated through several years of research (e.g. Bhattacharjee, 2002; Mayer et al., 1995; Porter & Donthu, 2008). A scale for green trust using the three dimensions, however, has not to the authors’ knowledge been developed. The items were therefore adapted based on wordings from Chen (2010)’s general measurement of green trust. The adaptations were made to cover the respondents’ trust in the provider’s environmental concerns and actions. Although there are scales developed to cover trust as three dimensions, some results also suggest that trust items mainly capture two concepts covering the cognitive and affective aspects of trust (e.g. Franklin & Marshall, 2019; Johnson & Grayson, 2005). It is thus expected that a similar result may occur in this case.

Next, an assessment of the convergent and discriminant validity gives important insights into whether the items accurately describe the concept they are meant to describe or other concepts. Convergent validity is evaluated by checking if the items within a construct have a high proportion of variance in common and is estimated through factor loadings and average variance extracted (Hair et al., 2014). Discriminant validity, on the other hand, covers whether the items within a construct measure unique variance or if they actually correlate more with other items or constructs (Hair et al., 2014). By using adaptations of existing scales that have had satisfactory results within these measurements, it is expected that convergent and discriminant validity is accounted for in this research. A confirmatory factor analysis is nonetheless performed in Chapter 5.3.2 to ensure that the research model meets the criteria for validity.

5.2.2 Measurement reliability

An assessment of the measurement reliability can give important pointers to how precise the measurement is (Breivik, 2020). According to Saunders et al. (2019), reliability is concerned with the degree to which the survey would produce consistent results under different conditions. A way of testing this is to apply a test-retest approach, where both the test and the retest should show consistent results in order for the measurement to be deemed reliable (Breivik, 2020). In this case, however, time constraints made this approach unattainable. Reliability was nonetheless checked by calculating Cronbach's alpha and Construct Reliability (CR), which are two very common estimates of internal consistency (Hair et al., 2014). Both Cronbach's alpha and CR should as a rule of thumb preferably have a value above 0.7 to indicate that the items consistently represent the same construct (Hair et al., 2014). Although most measurements of reliability do not result in dramatically different results (Hair et al., 2014), a measurement of both estimates makes the evaluation of reliability more robust. A calculation and review of Cronbach's alpha and CR is performed in Chapter 5.3.2.

5.2.3 Common method bias

Biases stemming from the measurement method applied, rather than the constructs used, can also threaten the validity of the research. There are several ways common method bias can occur (Podsakoff, 2003), but some of the most likely biases have been accounted for in our research. For instance, by making the responses anonymous, participation biases like social desirability bias can be avoided. Social desirability bias occurs when a respondent alters his or her answer in order to conform with social norms (Podsakoff, 2003). In this case, the respondent could be expected to report a more responsible or positive behaviour and attitude towards green actions. The incentives for doing this, however, is removed when making the responses anonymous, and thus not believed to be a substantial problem. It is also proven that anonymous surveys online are less susceptible of common method bias than for instance face to face interviews (Podsakoff, 2003), which strengthens the overall validity of the research results.

Saunders et al. (2019) point out that participant errors and biases can be a threat to reliability. Participant errors can be any factors that negatively affects the way the respondent performs. As this survey was issued through mail and the respondents could determine the time of completion themselves, it can be assumed that time or place does not have a systematic bias

effect. Podsakoff (2003) points out that mood states may affect the result of the research, which means that the mood a respondent is in when taking the survey can affect the outcome. Giving the respondents room to answer at their own convenience is however likely to reduce this mood state bias and is otherwise impossible for the researchers to have control over. Careless respondents are accounted for by including a test question halfway through asking to answer a specific number on the scale, where those who did not pass the test were excluded. The test question also works as a cognitive “speed-bump” for the respondents, which may reduce the effect of bias from common scale format which can create automatic responses (Podsakoff, 2003). It is proven, however, that using the same scale format through the entire survey systematically influences responses (Podsakoff, 2003; Tourangeau et al., 2000), and is thus something that can be considered when interpreting the results.

The characteristics of the items used can also create common method bias (Podsakoff, 2003). First of all, ambiguous or complex statements can confuse the respondents and force them to use their own heuristics when answering the questions. This is an issue because different people can interpret different meanings from the same word, and the research result is thus less reliable (Podsakoff, 2003). In order to hinder this effect, the statements were thoroughly examined and some adaptations were made to make the statements as intuitively understandable as possible. The feedback from the pre-test also implied that the wording of the statements was understandable.

To test for common method bias, the Harman’s single factor test can be used to examine the results. The test implies valid results if no single factor explains more than 50 % of the variance in the results (Podsakoff, 2003), and is performed later in this chapter.

5.2.4 Potential influence of Covid-19

The Covid-19 pandemic has changed most people’s lives drastically since the start of 2020 and is thus a unique factor that must be commented on in research done in this period. In the case of this survey, the pandemic may have affected the participants’ recent experiences or attitudes and thus could have made the questions harder to answer or provide different results than previously. This may for instance be true particularly for the access- and dialogue dimensions, where the conditions for gaining access to, and having dialogue about product experiences have drastically changed over the last year due to social restrictions. At the time of the survey, the respondents will have experienced that many stores that are not considered

absolutely necessary have been closed for several periods during the last year. The effects of this are reflected in the Norwegian retail index that showed a 29 % increase in purchases outside of the physical stores, i.e., online retail, in 2020 compared to the year before (Statistics Norway, 2021). Another example of change in behaviour is how the pandemic may have affected the perceived importance of environmental issues. In a survey from BCG in 2020, almost 70 % of the respondents said that they have become more aware of the negative environmental impacts of human activity after the pandemic struck (Kachaner et al., 2020). It therefore seems evident that both our habits and attitudes may have changed in different ways because of the extraordinary situation. Although the possible effects of this will be hard to distinguish from other effects, it is important to have in mind when comparing this study with previous and future research.

5.3 Validation of research model

5.3.1 Sample

The sampling method used was volunteer sampling, meaning that participants volunteered to take part in the research, and thus represent a non-probability sampling method (Saunders et al., 2019). This sampling method was seen to be the most appropriate as it serves a level of convenience in terms of collecting a high enough response rate in short time. Secondly, it increases the possibility of more motivated respondents, which may influence the quality of responses collected.

Considering our sample descriptive (*Table 2*), it reveals that the sample collected represents an opposite gender distribution than the population. In contrast it is closer to the overall gender distribution among Norwegian students in higher education, where the figures show a 60 % female, 40 % male gender distribution (Statistics Norway, 2021a). The average sample age of 24,5 years, and the magnitude of respondents being between 19 and 28 years old (*Appendix B3*) are seen to be highly relevant towards bachelor and master student age groups. This is based on that statistics show that most students in Norway finish their bachelor and/or master studies in the age group 19-29 years old (Statistics Norway, 2021b). The overall age spread between 19 and 41 is also seen to be fairly representative, with 4.7 % of graduating students in Norway finishing their master studies in the age of 40-44 (Statistics Norway, 2021b).

Though specific numbers for NHH students differ on certain aspects, we consider these differences to be of minor importance for the result of our research.

Descriptives			
	<i>n</i> = 90		
Gender	Sample	NHH	Higher Education Norway
Male	41.1 %	58.1%	40 %
Female	57.8 %	41.9%	60 %
Prefer not to say	1.1 %		
Age			
Mean	24.5		28
Min	19		
Max	41		
Median			25
Std. Deviation	3.145		

Table 2: Sample and population descriptives

5.3.2 Confirmatory factor analysis

In order to operationalize the measurement model, the items in the model must first be validated. This is done by performing a confirmatory factor analysis (CFA) which reveals whether the items that are measured actually represents the underlying construct or not (Hair et al., 2014). Using SPSS 27, the 16 items in the DART constructs and the 9 items in the Green Trust constructs were therefore tested for validity. In the dimension reduction-tool in SPSS 27, oblique rotation was selected because it, according to Hair et al. (2014), is best suited when assessing factors that are expected to correlate to some extent. Additionally, maximum likelihood method was employed, as it is assumed to optimally identify latent constructs and their correlation (Costello & Osborne, 2005). Through assessing the total variance explained, it was confirmed that the DART items loaded on four factors with an eigenvalue above 1 (Appendix C1), as expected. This indicates that there are four factors that explain most of the variance in the co-creation dimensions of the measurement model (Pett et al., 2003). The 9 items used for measuring ability, benevolence, and integrity in green trust, on the other hand, only loaded on one factor instead of the hypothesized three factors (Appendix C3). This means that there was not enough unique variance between the three constructs to separate them, which can be an effect of the small sample. Green trust was thus merged into one concept. A

CFA including all five constructs (dialogue, access, risk assessment, transparency, and green trust) confirms that all the measures used load predominantly on five factors (Appendix C4).

The DART items mainly had acceptable factor loadings above 0.7, and thus fulfilled a requirement for convergent validity which means that they have an acceptable amount of variance in common (Hair et al., 2014). The overall discriminant validity was also adequate as most of the highest factor loadings had relatively large distances to the next biggest factor loading in an item. This indicates that the items in a factor are actually distinct from other items. There were, however, some exceptions to the overall good discriminant and convergent validity at the initial evaluation. The dialogue item D4 had a factor loading of only 0.42 and was consequently removed. The item reads “*I had an active dialogue with “Brand” on how to add value in the product experience*”, and thus differs somewhat from the other three items that may be more intuitively understood than “*to add value to the product experience*”. In addition, two of the items measuring transparency had low factor loadings, T1 (0.508) and T3 (0.585), and in addition had unsatisfactory discriminant validity. The item T1 was therefore first removed. This improved the remaining factor loadings in Transparency to values above 0.6, and a significant difference in fit from the other factors indicating good discriminant validity. The item T1 includes whether the respondent was treated as an equal partner or not. As with the problem for D4, what being treated as an equal partner may not be completely intuitive as it is not explained to the respondent what it entails. This may be an explanation for the ill fit. As the factor loadings preferably should be above 0.7, item T3 was attempted removed as it had the worst fit of the remaining three. This resulted in a worsening of both the remaining transparency items and overall model fit and was thus discarded as a solution. The factor loadings for all the items in the merged construct green trust were above 0.7 and were thus kept in the measurement model. The initial and final factor loadings are presented in *Table 3* below (see also Appendix C4).

Adequate convergence validity can also be indicated by checking the average variance extracted (AVE) for each factor. The AVE should surpass 0.5 in order for the latent constructs to explain more of the variance in the items than random error (Hair et al., 2014). Calculations reveal adequate AVE for dialogue (0.537), access (0.622), risk assessment (0.722) and green trust (0.662). The AVE for transparency (0.432) confirms a slightly unsatisfactory convergence as the initial evaluation suggested. The value of the Cronbach’s alpha for transparency, however, is 0.74, which indicates adequate internal consistency, whereas the CR for the factor is 0.654. This confirms that transparency is slightly unstable, but not to the point

where it is regarded beneficial to remove it. The construct validity for dialogue ($\alpha = 0.797$, CR = 0.776), access ($\alpha = 0.874$, CR = 0.868) and risk assessment ($\alpha = 0.924$, CR = 0.912), on the other hand, is strengthened by the reliability estimates. Green trust also has a high Cronbach's alpha value (0.935) and CR (0.946), which confirms that there is good internal consistency within the construct.

Variable	Items	Factor Loading ²	α^1	CR ¹	AVE ¹
Dialogue	D1	"Brand" communicated with me to receive input on how to improve my product experience	0.705 (0.648)	0.797	0.776
	D2	"Brand" was interested in communicating with me about how to design and deliver a high-quality product experience	0.807 (0.826)		
	D3	"Brand" used multiple communication channels to encourage greater exchange of ideas with me about the product experience	0.680 (0.668)		
	D4	I had an active dialogue with "Brand" on how to add value in the product experience ³	(0.412)		
Access	A1	"Brand" let me decide how I could receive their product	0.791 (0.837)	0.874	0.868
	A2	I had many options to choose from regarding how to receive "Brand's" product	0.788 (0.766)		
	A3	It was easy for me to receive "Brand's" product when, where, and how I wanted	0.713 (0.669)		
	A4	"Brand" let me decide how they should send or communicate their product to me	0.856 (0.876)		
Risk assessment	R1	"Brand" provided me with comprehensive information about how they assessed benefits and risks of their product	0.793 (0.803)	0.924	0.912
	R2	I received comprehensive information about the benefits and risks of "Brand's" product	0.865 (0.879)		
	R3	"Brand" fully informed me about benefits and risks stemming from using "Brand"	0.855 (0.840)		
	R4	"Brand" fully informed me about benefits and risks of purchasing and using its product	0.884 (0.911)		
Transparency	T1	"Brand" treated me as an equal partner ³	(0.508)	0.740	0.695
	T2	"Brand" behaved accountably towards me	0.708 (0.626)		
	T3	"Brand" fully disclosed information about their product and why they recommended it	0.618 (0.585)		
	T4	"Brand" was willing to answer openly to all my questions	0.643 (0.740)		
Green Ability*	GA1	I am confident that "Brand" is able to deliver environmentally conscious products	0.849	0.935	0.946
	GA2	I believe "Brand" has good competence to provide environmentally friendly products	0.816		
	GA3	"Brand" is very knowledgeable about their products' environmental impact	0.785		
Green Benevolence*	GB1	"Brand's" environmental efforts comply with my needs and expectations	0.769	0.835	0.835
	GB2	"Brand" considers the welfare of its customers and the environment when making important decisions	0.835		
	GB3	"Brand" considers environmental interests when problems arise	0.777		
Green Integrity*	GI1	"Brand" keeps promises it makes to its customers about its environmental efforts	0.806	0.817	0.864
	GI2	"Brand" is perfectly honest and truthful about its environmental commitments	0.817		
	GI3	"Brand" can be counted on to do what is right for the environment	0.864		

¹ Calculated based on retained items. ² Factor loadings of initial test in (), remaining shows results for final outcome. ³ Item dropped. ⁴ Constructs merged to Green Trust after CFA

Table 3: Overview of items, standardized factor loadings, α , CR and AVE

The correlation matrix reveals that there are mostly significant, yet relatively low correlations between the five constructs. The correlation between the DART constructs is expected as they all represent the overarching concept co-creation. Except for with access, green trust also significantly correlates with the co-creation constructs. The low correlations do, nonetheless, indicate a high degree of unique variance. This is supported by the comparison with the square root of the AVE (*Table 4*). When the correlation value between each construct is lower than the square root of the AVE, discriminant validity is achieved (Fornell & Larcker, 1981). All correlation values meet this requirement, which confirms the discriminant validity of the factors in the measurement model.

		Correlations				
		<i>Dialogue</i>	<i>Access</i>	<i>Risk Assessment</i>	<i>Transparency</i>	<i>Green Trust</i>
<i>Dialogue</i>	<i>Pearson Correlation</i>	1	0.256*	0.436**	0.233*	0.211*
	<i>Sig. (2-tailed)</i>		0.015	0,000	0.027	0.046
<i>Access</i>	<i>Pearson Correlation</i>		1	0.125	0.335*	0.201
	<i>Sig. (2-tailed)</i>			0.241	0.001	0.057
<i>Risk Assessment</i>	<i>Pearson Correlation</i>			1	0.336**	0.408**
	<i>Sig. (2-tailed)</i>				0.001	0,000
<i>Transparency</i>	<i>Pearson Correlation</i>				1	0.409**
	<i>Sig. (2-tailed)</i>					0,000
<i>Green Trust</i>	<i>Pearson Correlation</i>					1
	<i>Sig. (2-tailed)</i>					
<i>√AVE</i>		0.733	0.789	0.85	0.657	0.814

* $P < 0.05$

** $P < 0.01$

Table 4: Correlations and square root AVE

Common Method Bias

Harman's test for common method bias is also passed since the factor accounting for most of the variance extracted in the dataset explains 35 % (see Appendix C4). The rule of thumb for this test is that no factor should explain more than 50 % of the variance, as it would indicate that there is an instrumental issue with the data collection, and thus make it less reliable (Podsakoff, 2003).

5.3.3 Descriptives

Out of the descriptive statistics presented in *Table 5*, we read that access and transparency are both on average rated the highest, having the two highest means. Despite this, their score of respectively 4.45 and 4.41 are only midscale on the 7-point Likert scale used in the survey. Further, risk assessment is rated the lowest on average, closely followed by dialogue. Green

trust is rated just below midscale with its 3.73 on average. The standard deviations of the different constructs are overall between 1.25 and 1.7, thus telling us that the responses do vary some from the mean, where most answers are within 3 and 6 on the Likert scale. The standard deviation being relatively similar across the constructs also tells us that the variation from the mean is relatively similar for the different constructs. Kurtosis levels are all negative, meaning that the data distribution is relatively flat compared to normal distributions. Most skewness levels are positive, meaning a shift to the left of the centre, except access that has a negative level indicating a distribution shift to the right. Most kurtosis and skewness levels are in between +/-1, which according to Hair et al. (2014) is the scope of levels answering to a normal distribution. Risk assessment is the only construct with a skewness level above 1, and with a kurtosis level being close to 1, which indicates that it is on the borderline of normality. Nevertheless, as the skewness level still is very close to 1 and kurtosis is below, it is evaluated to be of an accepted level considering the low n value.

Descriptive Statistics (statistic)							
	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Skewness</i>	<i>Kurtosis</i>
<i>Dialogue</i>	90	1	6.67	2.7296	1.41324	0.489	-0.528
<i>Access</i>	90	1	7.00	4.4500	1.70145	-0.403	-0.552
<i>Risk Assessment</i>	90	1	6.5	2.3583	1.37138	1.068	0.908
<i>Transparency</i>	90	1	7.00	4.4111	1.26318	0.038	-0.289
<i>Green Trust</i>	90	1	7.00	3.7259	1.25401	0.247	-0.206
<i>Valid N (listwise)</i>	90						

Table 5: Descriptive statistics

5.4 Assumptions in multiple regression analysis

The first and most fundamental assumption in multiple regression analysis is whether the residuals are normally distributed. This was assessed by the use of a normal probability plot (Appendix D1), where a normal distribution can be identified as most data points lay close to the diagonal. As previously mentioned, the data also gives acceptable kurtosis and skewness levels, confirming an acceptable normal distribution. Normality can also be assessed using a histogram of the residuals, but as this can be challenging in smaller samples (Hair et al., 2014), a normal probability plot was regarded as beneficial.

The second assumption is that the dependent and independent variables have a linear relationship. In order to assess this, scatterplots of the variables were created (Appendix D2). Assessing these, we identify a weak linear relationship. Access, risk assessment and

transparency appear to be having stronger linear relationships with green trust compared to dialogue. Important to keep in mind in this assessment is the rather small sample of 90 respondents, which may influence the level of linearity identified.

The third assumption is that the variance of the residuals is constant, which was assessed by creating and assessing a residual plot (Appendix D3). The plot showed no sign of heteroskedasticity, as data observations are relatively equally distributed across the plot with no cone or diamond shapes. Thus, homoscedasticity is identified.

The final assumption is that the residuals are independent, i.e., that the observations are independent which was tested by the use of a Durbin-Watson test. This gave a value of 1.912 (*Table 7*), it is thus very close to the value 2 which indicates that no autocorrelation is in place and the residuals are independent (Keller, 2012).

Another important aspect in multiple regression analysis is that there is no multicollinearity among the variables. This was checked by firstly looking at the correlation matrix between the independent variables (*Table 4*) where it shows that correlations are ranging between approximately 0.2 and 0.41. Substantial levels of multicollinearity are often subject to correlation levels of 0.9 or higher (Hair et al., 2014). Thus, correlation levels do not indicate high multicollinearity. To check this further, tolerance and variance inflation factor (VIF) was calculated (*Table 8*). Here we look for a high tolerance value, in this case ranging between 0.7 and 0.85, which is well above the critical value of 0.10 (Hair et al., 2014). Consequently, we look for low VIF values, here ranging from between 1.18 and 1.35 which also is well below the critical value of 10 (Hair et al., 2014).

6. Results

6.1 Hypothesis testing

Based on the initial CFA tests, green trust was, as mentioned, merged into one construct instead of being split into ability, benevolence, and integrity as in the original research model. This thus indicates an adjusted research model where each hypothesis addresses the influence of the respective DART elements on green trust as one construct. This is reflected in the following adjusted hypotheses:

Hypothesis 1 (H1): Dialogue has a positive influence on green trust.

Hypothesis 2 (H2): Access has a positive influence on green trust.

Hypothesis 3 (H3): Risk assessment has a positive influence on green trust.

Hypothesis 4 (H4): Transparency has a positive influence on green trust.

Thus, only one multiple regression was conducted in order to test the hypotheses with green trust as the dependent variable, and the respective DART dimensions as independent variables.

6.1.1 Regression results

Confirming the validity of the model, the ANOVA table below (*Table 6*) show a high F-value of 7.243 with a correspondingly low p value of 0.000. This indicates that the model with high likelihood explains some of the variance in the dataset. Specifically, it verifies beyond a 99 % level of confidence that at least one independent variable affects the dependent variable of green trust. In other words, it significantly proves the linearity of the model, thus the model is cleared valid. The regression results further show an adjusted R^2 of 0.219 (*Table 7*), meaning that 21.9 % of variation in green trust is explained by the variation in the DART elements which supports the conclusion of validation.

ANOVA				
Sum of Squares	df	Mean Square	F	Sig.
35.577	4	8.894	7.243	0.000

Table 6: ANOVA green trust

Model Summary				
R	R Square	Adjusted R Square	Std. Deviation of the Estimate	Durbin-Watson
0.504	0.254	0.219	1.10814	1.912

Table 7: Regression model summary green trust

The coefficient table below (Table 8) show that both dialogue and access do not have any significant influence on green trust, with significance levels of respectively 0.949 and 0.497. Thus, H1 and H2 are rejected. Risk assessment shows to have a significant influence beyond a 99 % level of confidence, with a p-value of 0.006. Looking at the positive beta values, risk assessment shows to have a positive influence on green trust ($\beta=0.307$). The same conclusion can be drawn for transparency, with a p-value of 0.008 and a positive beta value ($\beta=0.284$). Thus, H3 and H4 are accepted.

	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Tolerance	VIF
	Beta	Std. Error					
(Constant)	1.608	0.475		3.385	0.001		
Dialogue	-0.006	0.095	-0.007	-0.064	0.949	0.768	1.302
Access	0.051	0.075	0.069	0.683	0.497	0.85	1.178
Risk Assessment	0.281	0.099	0.307	2.835	0.006	0.748	1.336
Transparency	0.282	0.104	0.284	2.714	0.008	0.799	1.252

p(sig) < 0.05

Table 8: Regression coefficients green trust

6.2 Additional findings

In addition to the multiple regression testing the hypotheses, the control variables age, gender, and environmental behaviour were added to explain greater variance in green trust. Furthermore, a comparison of the DART dimensions' effect on trust in quality and on green trust has also been made.

6.2.1 Control variables and additional explanations

Table 9 summarizes the result of the regressions made on three different models. Model 1 is a summary of the findings where the DART dimensions' effect on green trust were tested, and the four variables explained 21.9 % of the variation in green trust. When adding age and gender in model 2, the adjusted R² increases slightly to 23.4 %, but the control variables added do not appear to be significantly affecting the green trust. When adding environmental behaviour in model 3, however, the explanatory power of the model goes up to 28.4 %. In addition, it is

evident that environmental behaviour has a significant positive influence on green trust as expected. Furthermore, gender becomes significant when controlling for environmental behaviour. Gender is computed as a dummy variable where male = 1 and female = 0. The results imply that being male influences the level of green trust, indicating that males show more green trust than females.

From the three models, we see that age seem to not have any effect on green trust. This may be caused by the fact that the sample population is relatively similar in age and thus mainly belong to the same generation. In addition, it is evident that risk assessment and transparency has an effect on green trust, also when adding alternative explanatory factors. Dialogue and access likewise show no significant effect across the three models. In addition, it is worth noting that there is a great deal of variance that is not explained with these models, which leaves room for further exploration of the concept green trust.

	Model 1	Model 2	Model 3
Dialogue	-0.007	0.043	0.058
Access	0.069	0.027	0.046
Risk Assessment	0.307**	0.281*	0.265*
Transparency	0.284**	0.277*	0.217*
Age		-0.047	-0.042
Gender (male)		0.164	0.241*
Environmental Behaviour			0.266**
Adjusted R ²	0,219	0,23	0,284
* p<0.05 ** p<0.01			

Table 9: Regression results including control variables

6.2.2 Comparing the findings to the influences of DART on trust in quality

Sustainability has been suggested to be a liability in product categories where high quality and strength are important attributes. An explanation of this is that customers perceive environmentally friendly products as less effective and durable, and therefore of poorer quality (Luchs et al., 2010; Skard et al., 2020). There is thus a contradictory expectation between the two concepts green and quality. Based on their different attributes, it may be expected that there is also a difference in the way that green trust and quality trust is formed. We therefore include trust in quality as an alternative dependent variable influenced by the dimension of DART. As this is not the main objective of this research, it is not included in the research model, but is investigated to establish a more nuanced understanding of the results.

The items that were used to measure the respondents' trust in quality of the product they chose follows the same formulations as the trust in green ability, benevolence and integrity adapted from Donthu and Porter (2008), Nysveen and Skard (2016), and Zhang and Li (2019). This is done to make the foundation for comparison as even as possible. The three items per dimension of trust were then adapted to capture trust in quality, as seen in *Table 10*. Since the formulations used to measure quality trust are close to identical to the ones used measuring green trust, it is assumed that the items in quality trust also meet the requirements for measurement validity.

Quality Ability	QA1	I am confident that "Brand" is able to deliver good quality products	Adapted from Nysveen & Skard (2016) and Zhang & Li (2019)
	QA2	I believe "Brand" has good competence to provide good quality products	
	QA3	"Brand" is very knowledgeable about their products' quality	
Quality Benevolence	QB1	"Brand's" quality complies with my needs and expectations	Adapted from Donthu & Porter (2008), and Nysveen & Skard (2016)
	QB2	"Brand" considers the welfare of its customers when making important decisions about product quality	
	QB3	"Brand" considers the customer's interests when problems regarding quality arise	
Quality Integrity	QI1	"Brand" keeps promises it makes to its customers about its quality	Adapted from Donthu & Porter (2008)
	QI2	"Brand" is perfectly honest and truthful about its products' quality	
	QI3	"Brand" can be counted on to do what is right to ensure good quality	

Table 10: Measurement items for trust in quality

A multiple regression testing the effects of co-creation through the four DART-dimension on trust in quality shows a high F-value of 7.543 resulting in a corresponding p-value of 0.000 (*Table 11*). Hence, the model explains with high likelihood some of the variance in the data and verifies beyond a 99 % level of confidence that at least one independent variable affects the dependent variable of quality trust. Thus, the linearity of the model is accepted, and the model is confirmed valid. Further, the regression result shows an adjusted R^2 of 0.227 (*Table 12*), which means that 22.7 % of the variation in quality trust is explained by the variation in the DART dimensions, supporting the conclusion of validation.

Preparing for this multiple regression analysis, all the assumptions for regression analysis mentioned were also assessed. The normal probability plot (Appendix E1) confirms a normal distribution. The linearity scatterplots (Appendix E2) generally show a very weak linear relationship, except for transparency that has a clearer linear relationship. It is, however, important to remember the low n of 90. In addition, the residual plot (Appendix E3) verifies

homoskedasticity and the model passes the Durbin-Watson test. Multicollinearity of DART was already assessed in the original regression.

ANOVA				
Sum of Squares	df	Mean Square	F	Sig.
32564	4	8.141	7.543	0.000

Table 11: ANOVA quality trust

Model Summary				
R	R Square	Adjusted R Square	Std. Deviation of the Estimate	Durbin-Watson
0.512	0.262	0.227	1.03888	1.875

Table 12: Regression model summary quality trust

Looking at the coefficient table (Table 13), it shows that transparency is the only independent variable that has significant effect on quality trust with a p-value of 0,000. Thus, it shows to be significant beyond 99 % level of confidence and show through positive beta values to have a positive effect on quality trust. Dialogue, access, and risk assessment are all not considered significant. In summary, the result gives indication that transparency positively influences the customers' trust in quality of a product, but that the remaining dimensions of co-creation do not have significant effects, neither positive nor negative. Consequently, this indicates that the expectation of co-creation having a different effect on green trust than on quality trust can be partially justified.

Coefficients							
	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Tolerance	VIF
	Beta	Std. Error					
(Constant)	3.751	0.445		8.426	0,000		
Dialogue	-0.097	0.089	-0.115	-1.086	0.28	0.768	1.302
Access	-0.090	0.070	-0.129	-1.278	0.205	0.85	1.176
Risk Assessment	0.032	0.093	0.037	0.342	0.733	0.748	1.336
Transparency	0.504	0.098	0.539	5.167	0,000	0.799	1.252

p(sig) < 0,05

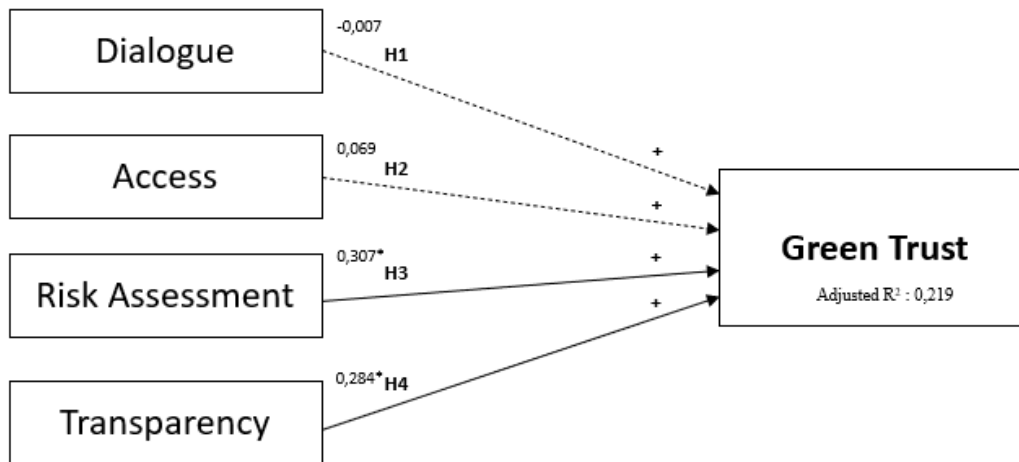
Table 13: Regression coefficients quality trust

6.3 Summary of findings

From the multiple regression analysis testing the influence of DART on green trust we found that dialogue and access do not have a significant influence on green trust, leading to the rejection of hypothesis 1 and 2. Risk assessment and transparency, on the other hand, had a significant positive influence on green trust on a 99 % confidence level. Thus, hypotheses 3

and 4 are accepted. Overall, the DART elements explain 21.9 % of the variance in green trust.

Figure 2 below summarises the main findings with the adjusted research model.



*Adjusted research model showing standardized co-efficients beta of the various independent variables. Solid lines represent confirmed hypotheses and dotted lines represent the rejected hypotheses
significant at 99 % level of confidence.

Figure 2: Adjusted research model and empirical results

Additional findings show that by adding age and gender, the model explains 23.4 % of the variance, though neither of the added control variables prove to have a significant influence on green trust. By further adding environmental behaviour the explanatory power of the model goes up to 28.4 %, where environmental behaviour proves to have a significant positive influence on green trust. When environmental behaviour was added in the analysis gender proves to be significant, indicating that males show more green trust than females.

In the additional comparison of DART on green trust with DART on quality trust the findings show that 22.7 % of the variation in quality trust is explained by the variation in the DART elements. Here only transparency proves to have a significant influence on quality trust, which is also a positive influence.

7. Discussion

7.1 Theoretical discussion

The findings from the research imply that co-creation partially has a positive effect on green trust in the context of a business to consumer relationship in the clothing and shoe-industry. This helps provide an answer to the first research question:

“What is the effect of co-creation on green trust?”

Based on the feedback from 90 business students at NHH, being transparent and giving the customers the opportunity to assess risks and benefits will have a positive influence on how much green trust the customer has in the company. Hence, H3 and H4 was supported. This finding supports arguments from Prahalad and Ramaswamy (2004c) about how transparency and risk assessment can enhance trust as it requires the company to show vulnerability. Being transparent and giving access to information about risks and benefits will also likely act as a counterweight to claims of greenwashing and opportunistic behaviour as it will give customers a chance to evaluate the company themselves. When the companies are not perceived as transparent and disclosing information, on the other hand, they may be suspected of hiding something from the public eye. In light of the intensifying greenwashing accusations and revelations over the last few decades (Lewandowska et al., 2017), scepticism has become the default option for many consumers. Companies who successfully disclose information about both risks and benefits of using their products in a transparent way could therefore gain a competitive advantage (Prahalad & Ramaswamy, 2004c).

The other two co-creation dimensions, dialogue and access on the other hand, showed no significant effect on green trust, and H1 and H2 were thus rejected. The subject of the dialogue items is generally about having a dialogue in order to add value to the product experience. Having a dialogue about improving a product experience does not include a requirement of it being open and honest and may therefore not on its own contribute to building green trust. The access items were subject of the most comprehensive editing in this survey, as their wording went from being about access to an offering (Nysveen et al., forthcoming), to be about access to a product. Gaining access to a product you want to buy may be considered a minimum requirement, and not something that affects the perception of how green it is. One can also argue that the items do not necessarily cover the access to information and tools that could

help the customer get a better grip of the company's green initiatives, which may explain why access did not significantly affect green trust.

The findings also imply that co-creation may build green trust in a different way than trust in quality, as only transparency showed a significant and positive influence on trust in quality. The results thus differ from the ones on green trust as they also had risk assessment as a significant factor. From the customers' perspective, the company may be more knowledgeable about their own green risks and benefits and thus more trustworthy, than when disclosing risks and benefits related to quality. In quality assessments, other users' insight may be more valuable. In addition, one can imagine that being aware of the risks associated with a product makes it less reliable in terms of quality. Consequently, risk assessment may be particularly important when building green trust, whereas transparency is important for building trust in more general terms.

Although only two dimensions of co-creation were significant on green trust, it is important to note that the four DART dimensions are referred to as co-dependent organizational systems (Albinsson et al., 2016) that constitute four building blocks of co-creation (Prahalad & Ramaswamy, 2004c). Dialogue and access may thus still be considered as important in the regard that they facilitate for transparency and risk assessment. For the customers to be able to assess benefits or risks, for instance, they may need access to tools, information, or time. Similarly, a good dialogue about risks and benefits between the parties in a co-creation relationship is important for debating and co-developing good solutions (Prahalad & Ramaswamy, 2004b). Prahalad and Ramaswamy (2004b) further argue that combining access and transparency also helps the customers make more informed decisions.

It is additionally worth noting from the results that the research model only accounted for 21.9 % of the variance in green trust. When including the influence of age, gender and environmental behaviour, the explained variance rose to 28.3 %. This implies that there are still many unexplored factors that can affect green trust, some of which could be the identified antecedents like green brand image (Chen, 2010), green loyalty (More, 2019), reputation (Zhang et al., 2016), the green perceived risk (Chen & Chang, 2012, 2013) and the perceived value of the products (Chen & Chang, 2012; Zaidi et al., 2019), to mention some. This may also have been affected by the fact that co-creation's effect on green trust in products was investigated, and that the variance explained could be greater if the effect on services were investigated, as findings from (France et al., 2020) suggests.

7.1.1 Development over time

Green trust is not created in a vacuum. Although this research has investigated co-creation's effect on green trust at one point in time, it is reasonable to believe that the effect is reciprocal over time. Nysveen and Skard (2015) suggests that trust and co-creation are mutually affecting each other, and that the two strengthens the customers' loyalty towards the company. Prahalad and Ramaswamy (2004c) emphasize that in order for customers to engage in co-creating activities, they need to trust the company in the first place. Increased level of loyalty is also identified in several research papers as one of the positive effects of building trust (Delgado-Ballester & Luis Munuera-Alemán, 2005; Iglesias et al., 2020) and green trust (Chen, 2010; Chen & Chang, 2013). Additionally, the literature review revealed that loyalty is also identified as an antecedent of green trust (More, 2019). It can also be assumed that a higher level of loyalty enhances the customers' likeliness of investing time and efforts in co-creating activities, as it requires willingness and engagement from both sides (Prahalad & Ramaswamy, 2004b). At the same time, France et al. (2020) suggests that engaging in co-creation activities may enhance loyalty.

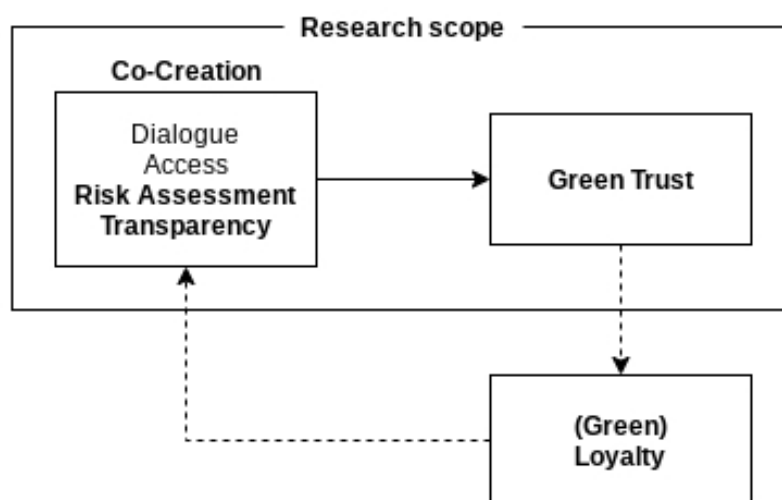


Figure 3: A proposition of co-creation's effect on green trust over time

While these effects are often investigated at a snapshot in time, temporality most likely plays an important role for the evolvement of green trust. It is therefore reason to believe that trust in green initiatives, loyalty, and likeliness to engage in co-creation activities are developed in an interplay with each other over time. Based on our research, the co-creation elements risk assessment and transparency have a positive influence on green trust. When the customers trust the company's green initiatives, they are likely to be more loyal to them. High levels of

green trust and consequently green loyalty can make the customers more likely to engage in co-creation activities. Building green trust through co-creation can therefore be considered a continuous process, in an interplay with relationship building factors like green loyalty, as proposed in *Figure 3*.

7.2 Managerial implications

The empirical findings and the theoretical foundation of this research has some important implications for how managers can build green trust among their customers. Going forward, we will examine the implications of the findings through the different elements of a business model. Specifically, we will address the second research question of the thesis:

What are the implications of co-creation's effect on green trust for development of Sustainable Business Models?

A business model is, as previously established, defined as “*the rationale of how an organization creates, delivers, and captures value,*” (Osterwalder & Pigneur, 2010, p. 14). Thus, by providing an understanding of how a business creates, delivers, and captures value, a business model contributes to the understanding of different performance levels between businesses (Chesbrough, 2010; Sohl et al., 2020). Changing consumer needs requires changing value propositions, meaning that companies need to adjust the value they create for their customers. However, companies lacking a well-developed business model are likely to fail in their innovation initiatives (Teece, 2010). This is because business models represent the logic and architecture behind the way the company does business (Teece, 2010).

As argued in business model literature, it is important to distinguish business models from business strategy (Sohl et al., 2020). A business strategy can be explained as guiding principles on how organizations should make decisions and allocate resources. It is a roadmap towards business objectives and goals (Watkins, 2007). In contrast to a business strategy, a business model represents a configuration of activities in order to put their strategy into action (Sohl et al., 2020), and thus reflects their realized strategy (Casadesus-Masanell & Ricart, 2010). We therefore choose to view the managerial implications of this research through a business model perspective.

Over the last few decades, value creation has evolved as a concept beyond merely economic value. Already in 1994, John Elkington coined the term Triple Bottom Line which had substantial repercussions on what was later to be expected of a company (Elkington, 2004). It has inspired a new wave of thinking about value creation, delivery, and capture through economically, socially, and environmentally sustainable business models. Jørgensen and Pedersen (2018) identifies the need to solve the sustainability problem as one of the main drivers for business model innovation in our time. The idea of building business models that increases the positive environmental and social benefits and reduces the negative environmental and social impacts, in addition to increasing revenues and reducing costs, is reflected in Joyce and Paquin (2016)'s *triple layered business model canvas*, which is described in the next section.

7.2.1 Implications for the building blocks of sustainable business model development

A common way to describe a business model is through four main elements; a customer value proposition, a profit formula, key resources and key processes (Johnson et al., 2008). Osterwalder and Pigneur (2010) describes business models using nine building blocks within the four main elements; *customer segments, value proposition, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure*, which makes up the business model canvas (Osterwalder & Pigneur, 2010).

Based on the business model canvas by Osterwalder and Pigneur (2010), Joyce and Paquin (2016) has developed a triple layered business model canvas. The triple layered business model canvas is a tool to create and innovate sustainable business models through holistically approaching the three dimensions of social, environmental and economic performance (Joyce & Paquin, 2016). The original business model canvas presented by Osterwalder and Pigneur (2010) represents the economic layer in the triple layered business model canvas where costs and revenues make up the foundation of value creation. In Joyce and Paquin (2016)'s adaption, all three layers consist of nine elements of a business model, which are all coherent across the layers.

The environmental layer reflects a life cycle thinking and can be used to identify *environmental impacts* and *environmental benefits*. In addition, it can be used to describe how *functional value* is created through *supplies and outsourcing, materials* and *production* on the

one side, and *distribution, end-of-use* and *end user* on the other side (Joyce & Paquin, 2016). The social layer's foundation is the *social benefits* and the *social impacts* of the business. In addition, *social value* reflects the value proposition, and is created through the interplay of *local communities, governance, employees, societal culture, scale of outreach* and *end user*.

Because the objective of this thesis is linked to environmental sustainability, we will focus on the elements of the environmental life cycle layer going forward. In addition, we will include important aspects from the original economic layer, as it is a necessary foundation for any business. In the further discussion we consider how companies can facilitate for green trust in their business model development focusing on the co-creation elements risk assessment and transparency.

Customer Segments and Use Phase

The *customer segment* identifies the group of customers the company seeks to acquire and serve (Osterwalder & Pigneur, 2010). Here one should ask questions about who the customer is and should be, to answer who the company is creating value for (Osterwalder & Pigneur, 2010). The *use phase* captures the impact the user makes when partaking in the functional value of the company. The environmental layer thus extends the focus beyond who the customer is by also identifying the impacts linked to the customer's use of the product (Joyce and Paquin, 2016).

An element of significance when building green trust through co-creation is identifying and targeting customer segments with interest in reducing impact of their product use, and which thus would have interest in related co-creation activities and product offerings. This is supported by the fact that customers with similar values as the company is likely to have more green trust in it (Kikuchi-Uehara et al., 2016b). As indicated earlier, research shows that it is the younger generation that favours more sustainable brands (First Insight, 2020) and thus spend more time searching for information to verify brands sustainability efforts (Haller et al., 2020).

Addressing risk assessment, the overall objective should be to give customers the opportunity to assess the risks and benefits of the product in the use phase, in which transparency proves to be important. The practical implications of this entails the open disclosure of such risks, which should be achieved through increased information sharing both at the point of purchase and during use. By giving the necessary information to the consumers about how they can best

utilize the product in a sustainable way based on the potential risks and benefits, they may to a greater extent reflect upon their own behaviour (Payne et al., 2008). Payne et al. (2008) argue that this reflection can make the customer more understanding of – and attracted to – the company's value proposition. In addition, transparency relates to the opportunity to ask questions and getting open and honest responses from the company about its risks and benefits. Opportunities for asking questions about the use phase of the products should thus be facilitated for. By extending the focus of the impact of the products, also in the use phase, the company can signal that they take the full life cycle of the product seriously, and thus build more green trust.

Value Propositions and Functional Value

The *value proposition* represents what the company offers its customers. This involves whether or not their offering solves customers' problems and answers to their needs, which answers the overall question of which value is delivered (Osterwalder & Pigneur, 2010). The extension of the value proposition in the environmental life cycle layer is the *functional value*. The functional value describes the value in use, either in terms of service performance or the needs fulfilled and is a way of quantifying what is examined in the environmental layer (Joyce & Paquin, 2016).

A key element in facilitating green trust enhancements through the value proposition and functional value is the companies' transparent disclosure of all risks and benefits associated with the product itself. This includes both environmental risks and benefits, but also risks and benefits towards the consumer. It also entails being transparent about the true value of the product, i.e., what problem it solves for the consumer, but also for the environment. The value proposition is at the core of the business model and is something every business should be able to identify. Payne et al. (2008) also emphasize that the value proposition should be reflected in communication, as it will influence how the customers use the company's and its own resources. Being transparent about the value proposition may also help the customers understand it, and thus lead to them being more attracted to it (Payne et al., 2008).

For companies with a fundamentally unsustainable value proposition, it must be noted that an attempt to build green trust will only lead to accusations of greenwashing. Identifying the core of the business is thus perhaps the first step a company should take in order to evaluate whether it is reasonable for the customers to trust them about green initiatives or not. In other words,

there needs to be a green aspect to build green trust upon if the company wants to act with sincerity towards their customers (Iglesias et al., 2020).

Channels and Distribution

Channels involves communication with and distribution to customers and represents the touch points between the company and its customers. Thus, the channels building block is about how the company reaches its customer segments in order to deliver their value proposition (Osterwalder & Pigneur, 2010). Likewise, *Distribution* captures how the company ensures access to its functional value to the use phase in the environmental layer (Joyce & Paquin, 2016).

Overall, transparency and risk assessment opportunities should be present at all touch points between the companies and their customers. Osterwalder and Pigneur (2010) divides channels into five different phases that links to a channel's different functions, it being awareness, evaluation, purchase, delivery, and after sales (Osterwalder & Pigneur, 2010). Managers should thus become aware of these different touch points for their business in order to identify opportunities for transparency and assessment of risks and benefits for the customer. Hatch and Schultz (2010) and Ind et al. (2017) emphasize that online communities and social media are becoming increasingly important channels as they facilitate for transparency, both from the company to the consumer, but perhaps more importantly the other way around. This gives valuable insights for both parties and can thus create more trusting relationships.

As with both the use phase and the value proposition, giving the consumer the ability to conduct their own risk assessment entails providing open information about all impacts and benefits related to the different distribution methods used. This includes information about for example emissions in transport, packaging materials and transport logistics, and if there are alternatives that can be used in order to reduce the negative impact. By doing this, the company shows a willingness to help the customer make a more sustainable choice (Zhang et al., 2016). Transparency also concerns having an open disclosure of distribution decisions and the reasoning behind them. To provide information about the risk assessments made internally regarding various aspects of distribution and give clear explanations to the reasoning for the choices made is thus also important.

Customer Relationships and End-of-Life

Customer relationships is, as the name implies, about the type of relationship between the company and its customers. There exist many different types of customers relationships, being personal or automated, where co-creation is one of them (Osterwalder & Pigneur, 2010). Joyce and Paquin (2016) has extended the view of this relationship all the way to the *end-of-life* for the product. By also identifying the impacts of the product after the user decides to end its consumption, the company can extend its environmental responsibility.

Co-creation requires a high level of engagement from the customer and the company (Prahalad & Ramaswamy, 2004c). Since the company does not have control over the product after the transaction has happened, they can utilize the engagement from customers in order to exchange ideas and share information about opportunities for the products after the consumption has ended. In terms of providing information to the customers, it is important to be honest about the benefits, risks, and overall impact of the various options in disposing of the product. A fundamental example may be for the company to be transparent about how the product should be disposed by clearly labelling it with a recycling instruction, which is a way of contributing to closing the resource loop (Bocken et al., 2016). Moreover, details of what happens to the materials after they are handed into a recycling station should be made available. In addition, information about how the company works to prolong the life of the products, also referred to as slowing the resource loop (Bocken et al., 2016) for instance through more durable design, is an opportunity to build green trust. Overall, the importance lies in sharing knowledge about the impact and risks of the product - also post consumption.

Revenue Streams and Environmental Benefits

Revenue streams represents how the company generates cash flows from its customer segments (Osterwalder & Pigneur, 2010). In order to establish a revenue stream, the key questions to ask are what the different customer segments are willing to pay, and how they prefer to pay. Each revenue stream can have different pricing mechanisms, and there are many different ways the company can choose to generate revenue (Osterwalder & Pigneur, 2010). The *environmental benefits* capture value creation beyond the mere financial value as it also includes what good the business is contributing with for the environment. When a company can identify both its environmental impacts and benefits, it can work on creating a balanced foundation for its value creation (Joyce & Paquin, 2016).

Being open and transparent about revenue streams generally includes being open about how the company makes money. Transparency regarding non-environmental aspects may just as well influence green trust as transparency about green aspects, as it signals that the company is honest and accountable. Another important aspect in facilitating for risk assessment and transparency in revenue streams, is open and honest disclosure of what the price of the product covers. Specifically, whether the price covers the full costs of the product, also including negative externalities. As green products are often more expensive than other products (Leonidou et al., 2013), a disclosure of why this is the case may thus be necessary, and consequently contribute to more green trust.

Facilitating for risk assessment also includes open information about the value the costumers get for their money, hence leading them to make own judgements about personal risks related to the purchase, which again contributes with signalling effects of a trustworthy company also in green aspects. In addition, being transparent about environmental benefits generally gives the company an opportunity to showcase the positive impact they are doing. It will, however, be especially important to not exaggerate own initiatives, as it may be interpreted as greenwashing and consequently reduce green trust (Chen & Chang, 2013).

Key Resources and Materials

Key resources are “*the most important assets required to make a business model work,*” (Osterwalder & Pigneur, 2010, p. 34). Resources are either physical, intellectual, human, or financial, and are essential for the company to be able to create and deliver their value proposition, and for all actions set in the business model to take place (Osterwalder & Pigneur, 2010). The *materials* in the environmental layer is an extension of the key resource component and is used to identify the physical materials that is used in production, and their environmental impact (Joyce & Paquin, 2016).

Disclosing information about the resources the company uses and the impact these resources have can be essential in facilitating for risk assessments. In addition, transparency of choices made regarding both resources and materials and the reasoning for them is important also in this part of the business model. This includes full information about the benefits and risks of using the chosen resources and materials over other alternatives. This also represents an opportunity for the company to be ahead of accusations, as they can disclose the justifications they make for using the different resources. A typical evaluation a company must make regarding the materials they use may for instance to choose between environmentally friendly

or durable materials. In this case, the more durable option may have a smaller impact in the long run, simply because it enables a more mindful consumption (Sheth et al., 2011) and has a longer life (Bocken et al., 2016). Thus, if a company can justify using a less environmentally conscious material because it is more durable and reliable, that evaluation can create trust if it is transparently disclosed for the customers.

Key Activities and Production

Key activities are the activities a company must perform in order to secure successful operationalization of their business model (Osterwalder & Pigneur, 2010). Furthermore, the environmental impact of the key activities should be identified in the *production* element (Joyce & Paquin, 2016).

Similar as for key resources and materials, risk assessment and transparency for key activities and production is about sharing comprehensive and honest information about the positive and negative impacts it has. Specifically for this part of the business model, is the disclosure of why they choose to produce the way they do and the impact this has. It also includes information about what they do in order to utilize their production resources to narrow the resource loop (Bocken et al., 2016) and what impact the production has on its local environment or during transport to point of sale.

Crucial in this dimension is also being open and honest about both positive and negative externalities of all their activities. Included in activities is how the company deals with problem solving (Osterwalder & Pigneur, 2010) and how they can change their impact or how they work to improve their solutions, which gives the opportunity to be transparent about for example innovation processes. Sustainability is increasingly being regarded as a key driver for innovation (Nidumolo et al., 2009). This creates opportunities for a company to showcase how they seize the opportunity to make better products for tomorrow. Transparency about problem solving can also enhance the perceived brand innovativeness, which in turn can contribute to building trust (Srivastava et al., 2015).

Key Partnerships and Supplies and Outsourcing

Key partnerships is about the partnerships, collaborations, and alliances a company has in order to make their business model work. This is crucial because of various reasons, there among reduction of risk, acquisition of resources, and general optimization of a business model (Osterwalder & Pigneur, 2010). The *supplies and outsourcing* represent necessary

activities, but that are not considered to be the core activities in the company. It can often be described as those activities that are outsourced as opposed to in-house. In that distinction, the company does not have control over the impacts in this category, but must still be aware of its impacts in order to make adaptations to become more environmentally sustainable (Joyce & Paquin, 2016).

As previously mentioned in the discussion, risks and benefits of the entire value chain needs to be accounted for. This also extends to partnerships and collaborations. Information about why they choose to collaborate with those that they do, and how they work with them, should be included. Such collaborations could be strategic alliances, cooperation, joint ventures, or suppliers (Osterwalder & Pigneur, 2010). A key element in this is being open about the demands set to suppliers and other partners, and the risk assessments made in the collaboration decision process. It also presents an opportunity to be transparent about support from external actors like the government or NGO's, which can enhance trust in sustainability claims (Zhang et al., 2016).

Cost Structure and Environmental impacts

Cost structures show “*all costs incurred to operate a business model,*” (Osterwalder & Pigneur, 2010, p. 40). In other words, it is about the costs occurring in the business model, and primarily covers financial costs. The equivalent of the cost-dimension in the original business model canvas, is the negative *environmental impacts*, which Joyce and Paquin (2016) also refer to as the ecological costs in the environmental layer of the canvas.

Related to the implications of risk assessment and transparency on green trust, honest and complete information about what financial and environmental costs the company has is essential. This includes transparent information about their overall footprints and whether they include these footprints in their cost reporting. Although accounting for environmental costs has proven to be harder than accounting for financial costs (Unruh & Kiron, 2016), there are several different frameworks that can be used to address the most crucial impacts, with the Global Reporting Initiative (GRI) being the most commonly used worldwide (Stewart et al., 2018). Financial and environmental costs should also include risks and potential costs for the customer over time in order to give a full picture of the potential footprint.

Summary

As this discussion shows, there are many aspects in a business model that relates to risk assessment and transparency. The overall importance can be summarized in having complete and honest information sharing regarding all aspects of the company through the entire value chain. We must note, however, that a complete disclosure of information sensitive to competition would be unrealistic to expect from companies. Nevertheless, a minimum level of sharing on the biggest impacts and risks would be crucial in order to facilitate for green trust. It is important to keep the information balanced and truthful when sharing positive impacts on the environment in order to avoid perceptions of greenwashing which negatively affects green trust (Chen & Chang, 2013). The main implications for each of the environmental dimensions in the business model canvas are summarized in *Table 14*.

Environmental dimension	Managerial implications
Use Phase	<ul style="list-style-type: none"> - Identify consumers with interest in environmental impact - Make information about impact of use available in the use phase - Facilitate for openly answering questions about optimal utilization of the product in the use phase
Functional Value	<ul style="list-style-type: none"> - Disclose risks and benefits of the product itself - Communicate transparently what value the product has to the consumer and the environment - Consider if the value proposition of the company is unifiable with green trust
Distribution	<ul style="list-style-type: none"> - Consider each touch point with the consumer as an opportunity for transparency and risk assessment - Disclose evaluation behind the choice of distribution method - Provide insights on risks and benefits related to distribution method
End-of-life	<ul style="list-style-type: none"> - Be open about risks and benefits of different opportunities for handling the product after use - Clearly label where and how to dispose - Inform about initiatives that can prolong the product life
Environmental Benefits	<ul style="list-style-type: none"> - Disclose open and honestly what the price covers – including possible negative externalities - Be open about the value for the customer to enable individual risk and benefit assessment - Showcase the company's positive impacts for the environment truthfully
Materials	<ul style="list-style-type: none"> - Disclose which materials are used and what positive or negative impacts they have - Provide reasoning for choice of specific materials based on benefits and risks
Production	<ul style="list-style-type: none"> - Inform about the risks and benefits of the production methods used - Be transparent about efforts to utilize resources efficiently through decisions in production - Communicate how the company works with innovation to solve problems and seize opportunities
Supplies and Outsourcing	<ul style="list-style-type: none"> - Extend risk assessment to partners and collaborators - Be open about demands set to suppliers and other partners - Be transparent about support from external actors
Environmental Impacts	<ul style="list-style-type: none"> - Give open and honest information on the full costs – both financial and environmental - Disclose about internalized environmental costs through accounting - Inform about costs and impacts for the customer over time

Table 14: Summary of managerial implications

Essential across all levels of the business model is to also be honest about negative aspects, or areas in which the company have too few or no measures in place. It thus needs to be emphasized that these implications are relevant for businesses that already have green initiatives in place or that have ambitions to become more environmentally sustainable in the future. In order to build green trust, there needs to be some green initiatives or green intentions to have trust in, in the first place. Otherwise, it will just be greenwashing. Prahalad and Ramaswamy emphasizes in their work on co-creation that “*when in doubt, disclose*” (2004c, p. 33). If a business with an ambition to build green trust finds discomfort in the importance of transparently disclosing not only benefits, but also risks, it should be a signal to evaluate how the company creates, delivers, and captures value. The business model canvases therefore also work as important tools for identifying improvement areas which can be explored in order to build competitive advantage for the future. It must also be noted that, based on the consumers’ limited cognitive ability to process information (Chen & Chang, 2013) it is vital for the companies to find ways to disclose honest and open information to their customers without creating confusion.

While the focus of this thesis has been on the environmental and economic layer of the business model canvas, transparent information, and disclosure of risks regarding the social aspects of a business model should still be accounted for in order to build trust in all aspects of sustainability. For this application, the third layer in the triple layered business model canvas (Joyce & Paquin, 2016) can be used as reference.

8. Limitations and future research

Internal validity

While this research provides new insights in how elements of co-creation may be influential in the formation of green trust, there are some limitations that should be addressed. Moving beyond the measurement validity discussed in section 5.2.1, a potential threat to internal validity is the potential of past or recent events that can alter or change a respondent's answer. This can for example be a recent bad purchasing experience that not necessarily represent the average experience the respondent has had with a brand. Another potential threat is the influence of being tested, which thus may alter the respondents' answers. Related to this is also the possibility of changes in the environment or what is happening around the respondents as they are answering, for example noise or interruptions. As this study is not conducted in a controlled environment, all of these threats are generally difficult to avoid. In addition, the causality between the constructs cannot be proven with the method applied in this study (Breivik, 2020). An interesting direction for further research is thus to conduct controlled randomized experiments that are better suited for isolating causal effects and eliminate the impact of the aforementioned threats.

External validity

The sample of respondents represents the population of NHH students to some extent, although the gender distribution was somewhat different. Overall, the difference in sample and population were seen to be small, and consequently to have very minor influences on the study. However, the sample size of 90 respondents is at the lower end of what can be accepted in a quantitative study, thus posing some challenges for the study's external validity. In addition, the use of a non-probability sampling method means that it is not possible to generate results of statistical inference. This influences the possibility to generalize findings across the population. As the study was performed on business students at NHH, the generalizability of the results across populations is somewhat limited. Nevertheless, this is an important group for businesses to know and understand. First of all, because they are young and will influence the consumption patterns of tomorrow, but also because they are expected to have a relatively high purchasing power in the future. The overall study may also have levels of transferability in a broader theoretical significance.

Following the discussion of the study's external validity, future research may be conducted to explain more of the variance within green trust. This may for instance entail exploring how green trust is built within different industries and segments. France et al. (2020)'s findings suggests that co-creation is a greater predictor in service rather than product categories. It can followingly be interesting to examine co-creation's effect on green trust in service categories. In addition, research on a broader range of consumer groups can be conducted, in order to further explain the control variables like age, gender and environmental behaviour, which we have previously touched upon the importance of. Cultural differences are also likely to influence how green trust is formed as it is suggested that trust varies across cultures (Thanetsunthorn & Wuthisatian, 2019), which can provide an interesting starting point for future research. Additionally, the potential effects of the ongoing Covid-19 pandemic on this research should be kept in mind when comparing to future studies.

Construct validity

Although the fit of the research model provided an acceptable foundation for analyses, some adjustments can be made to improve the constructs in the future. Firstly, two items (D4 and T1, see *Table 3*) were removed due to unsatisfactory factor loadings. Secondly, the AVE of the transparency construct was slightly below an acceptable level of convergence validity (0.432, see *Table 3*). The DART dimensions should hence be further tweaked in order to strengthen the construct validity. The content of the access dimensions should also be evaluated further, as the adaption from service offering to product may have affected the meaning somewhat. Lastly, this research did not prove adequate to capture the proposed three-dimensional green trust construct which was merged into one construct. Consequently, a scale for measuring green trust should be further developed and validated to investigate whether green trust can be understood more in depth through different dimensions.

Reliability

Another potential limitation of the study is participant error. Similar to environmental influences, participant error is about factors that alter how the respondent answers, for example being hungry or tired when answering the survey (Saunders et al., 2019). As this is also a factor that is hard to control for in a survey, using a randomized experiment in future research can help account for this limitation. A further potential threat to reliability is the choice of NHHS Green Team as a group to contact, which could induce biases in responses due to the higher interest in the topic of the survey. As previously mentioned, this influence was nevertheless assessed to be low, and hence regarded as being of minor impact. In addition,

respondents were given the option to come back and finish the survey at a later stage, which could induce irregularities in their response due to different settings and whether they remembered the original product chosen to keep in mind. Despite this option not being announced to the respondents, it could create a possible limitation to the reliability of the study. Furthermore, the level of personal relationships between the respondents and researchers is a probable limitation, especially after some NHH groups which we have personal ties to were contacted. This could potentially induce a feeling of duty in answering and answering 'correctly'. In other words, it could generate an acquiescence bias in which respondents knowing the researchers want to answer favourable answers, which may be different from their true opinion. Similar studies can therefore be conducted in the future with a more comprehensive respondent bases in order to confirm the findings of this research project.

Qualitative research

Lastly, a broader understanding of how the co-creation dimensions is related to green trust can be developed through qualitative studies. In-depth interviews or case studies can provide broader insights into not only if co-creation affects green trust, but also why it happens or not happens (Saunders et al., 2019). It can also help develop a deeper understanding of the interplay between co-creation, green trust and loyalty over time, as well as the context around it. Furthermore, qualitative methods can also be utilized to tweak the constructs of DART to make sure they are understandable and adequate to use on products as well as services. This is especially important for the access dimension, which to a greater extent can include access to information, tools and time, and not only to the product. In addition, qualitative methods are beneficial in theory development (Saunders et al., 2019), and can thus be utilized to develop and pre-test new scales for measuring dimensions of green trust.

This research project has uncovered that trust is understood and explored in various ways within many different disciplines. From this, green trust seems to be an emerging field which will become increasingly important in the future as consumer preferences are continuously changing at speed with the sustainability problems. Although our findings indicate that risk assessment and transparency positively affect green trust, the model only explained 21.9 % of variance in green trust. This implies that there are several opportunities for further exploration of this growingly important field in the future.

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Appendices

Appendix A – Antecedents of green trust

Reference	Method	Relevant Antecedents	Dependent variable(s)	Context	Main results
(More, 2019)	Quantitative (survey) n=248	<u>Greenwash (-)</u> , <u>Green brand loyalty</u> and <u>green brand image</u>	Green brand trust	Consumers of green products or brands in India.	Greenwash negatively affects green trust. Green brand image and green brand loyalty positively influence green brand trust.
(Zaidi et al., 2019)	Quantitative (survey) n=207	<u>Functional value quality</u> , <u>Functional value price</u> , <u>Social value</u> , Epistemic value. <u>Greenwash(-)</u> as moderator	Green trust	Organic food consumers in China.	Functional value (Quality and price), and social value affects green trust. Greenwash perceptions have a significant negative moderating effect on the relationship between functional value quality and green trust.
(Zhang et al., 2016)	Quantitative (survey) n = 167	<u>Disposition to trust</u> , <u>Brand and company reputation</u> , <u>Certification reputation</u> , Additional information to verify label, <u>Government support</u> , <u>NGO Sanction</u>	Trust belief in sustainable practices information (Competence, Benevolence and Integrity)	Sustainable product information in the U.S. and Mexico.	Information indicating brands and certificates reputation positively affects trust in sustainable practices information. Information indicating support from government agencies and endorsement from non-for-profit organizations significantly influences consumer's trusting beliefs in sustainable practices information.
(Chen & Chang, 2013)	Quantitative (Survey) n=252	<u>Greenwash (-)</u> Mediators: <u>Consumer confusion (-)</u> and <u>Green perceived risk (-)</u>	Green trust	Consumers of electronics and information products in Taiwan.	Greenwash negatively influence green trust. Green consumer confusion and green perceived risks have mediating effects on the negative relationships.
(Chen & Chang, 2012)	Quantitative (Survey) n=252	<u>Green perceived Risk(-)</u> and <u>Green perceived value</u>	Green trust	Consumers of electronics and information products in Taiwan.	Green perceived risk is negatively related to green trust. Green perceived value is positively related to Green trust.
(Chen, 2010)	Quantitative (Survey) n=254	<u>Green brand Image</u>	Green trust	Consumers of electronics and information products in Taiwan.	Green brand image is positively associated with green brand trust. Both affect the green brand equity.

Appendix B – Survey

Appendix B1: Survey invitations

Dear fellow student,

As a part of our master thesis we invite all NHH-students to participate in a short survey to help us learn more about green trust towards brands. The survey takes only about **8 minutes** to complete and is anonymous. We highly appreciate your help - your response is very valuable to us!

Take the survey by clicking this link: [Take the survey!](https://nhh.eu.qualtrics.com/jfe/form/SV_8hKa0sKyVs9KRGC)

Or copy and paste this address into your web browser:

https://nhh.eu.qualtrics.com/jfe/form/SV_8hKa0sKyVs9KRGC

Please do not distribute this survey to people outside NHH.

Thank you, and have a great day!

Best regards,
Malene Sighaug Bigseth and Hedda Sofie Borgen

Invitation to participate in survey sent out on mail to all NHH students

(If you have already completed the survey, you can ignore this message. Thank you!)

Dear fellow student,

This is friendly reminder to participate in a short survey to help us learn more about green trust towards brands. Your response is extremely valuable to us as it helps us finish our master thesis. The survey takes only about **8 minutes** to complete and is anonymous.

Take the survey by clicking this link: [Take the survey!](https://nhh.eu.qualtrics.com/jfe/form/SV_8hKa0sKyVs9KRGC)

Or copy and paste this address into your web browser:

https://nhh.eu.qualtrics.com/jfe/form/SV_8hKa0sKyVs9KRGC


Please do not distribute this survey to people outside NHH.

Thank you so much for your time and have a great day!

Best regards,
Malene Sighaug Bigseth and Hedda Sofie Borgen

Reminder sent on mail to all NHH students

Appendix B2: The survey

NHH


Dear fellow student,

This short survey is a part of our master thesis at NHH and helps us learn more about green trust towards brands. The survey takes approximately 8 minutes to finish, and we highly appreciate every contribution to our research!


The survey is anonymous and we will not be able to trace the responses back to you. All information will be handled confidentially. Participation is voluntary and you are free to withdraw from the survey at any time. Note, however, that you must complete the entire survey in order for your responses to be used.

Please do not distribute this survey to people outside NHH.


I consent to take part in this survey and accept that data from it will be used for research purposes.

Yes

No



1



NHH


We thank you for your time and effort, and apologise for any time wasted. If you should change your mind about contributing to our research, please revisit our survey link provided.

Thank you.


Best regards,
Malene Sighaug Bigseth and Hedda Sofie Borgen

2






When answering this survey we want you to think about a **recent experience** you have had with purchasing an item of **clothing or shoes** from a **specific brand or provider**. You can choose either a physical or digital purchase experience.

Click here when you have made your choice




3

On the following pages you will be presented with several statements about the product experience you have chosen. In each statement, the term "Brand" refers to the company that offers the product you have chosen. You answer by indicating how much you agree with the statements. Feel free to use the entire scale when answering. There are no right or wrong answers - we want your opinion!

You may experience that some statements appear similar. This is intentional, and we therefore ask you to consider each statement carefully. Remember that it is important that you complete the entire survey and that you answer truthfully.



4

Thinking about the product experience you have chosen, please indicate how much you agree with the following statements.

5

	1 (completely disagree)	2	3	4	5	6	7 (completely agree)
"Brand" communicated with me to receive input on how to improve my product experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" was interested in communicating with me about how to design and deliver a high-quality product experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" used multiple communication channels to encourage greater exchange of ideas with me about the product experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had an active dialogue with "Brand" on how to add value in the product experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[→](#)

Thinking about the product experience you have chosen, please indicate how much you agree with the following statements.

6

	1 (completely disagree)	2	3	4	5	6	7 (completely agree)
"Brand" let me decide how I could receive their product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had many options to choose from regarding how to receive "Brand's" product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It was easy for me to receive "Brand's" product when, where, and how I wanted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" let me decide how they should send or communicate their product to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[→](#)

Thinking about the product experience you have chosen, please indicate how much you agree with the following statements.

7

	1 (completely disagree)	2	3	4	5	6	7 (completely agree)
"Brand" provided me with comprehensive information about how they assessed benefits and risks of their product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I received comprehensive information about the benefits and risks of "Brand's" product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" fully informed me about benefits and risks stemming from using "Brand"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" fully informed me about benefits and risks of purchasing and using its product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Thinking about the product experience you have chosen, please indicate how much you agree with the following statements.

8

	1 (completely disagree)	2	3	4	5	6	7 (completely agree)
"Brand" treated me as an equal partner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" behaved accountably towards me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" fully disclosed information about their product and why they recommended it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" was willing to answer openly to all my questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Thinking about the product experience you have chosen, please indicate how much you agree with the following statements.

9

	1 (completely disagree)	2	3	4	5	6	7 (completely agree)
I am confident that "Brand" is able to deliver environmentally conscious products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe "Brand" has good competence to provide environmentally friendly products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" is very knowledgeable about their products' environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[→](#)

Thinking about the product experience you have chosen, please indicate how much you agree with the following statements.

10

	1 (completely disagree)	2	3	4	5	6	7 (completely agree)
"Brand's" environmental efforts comply with my needs and expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" considers the welfare of its customers and the environment when making important decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" considers environmental interests when problems arise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Please indicate number 7 (completely agree) on this statement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[→](#)

Thinking about the product experience you have chosen, please indicate how much you agree with the following statements.

11

	1 (completely disagree)	2	3	4	5	6	7 (completely agree)
"Brand" keeps promises it makes to its customers about its environmental efforts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" is perfectly honest and truthful about its environmental commitments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" can be counted on to do what is right for the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[→](#)

Thinking about the product experience you have chosen, please indicate how much you agree with the following statements.

12

	1 (completely disagree)	2	3	4	5	6	7 (completely agree)
I am confident that "Brand" is able to deliver good quality products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe "Brand" has good competence to provide good quality products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" is very knowledgeable about their products' quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[→](#)

Thinking about the product experience you have chosen, please indicate how much you agree with the following statements.

13

	1 (completely disagree)	2	3	4	5	6	7 (completely agree)
"Brand's" product quality complies with my needs and expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" considers the welfare of its customers when making important decisions about product quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" considers the customer's interests when problems regarding quality arise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[→](#)

Thinking about the product experience you have chosen, please indicate how much you agree with the following statements.

14

	1 (completely disagree)	2	3	4	5	6	7 (completely agree)
"Brand" keeps promises it makes to its customers about its products' quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" is perfectly honest and truthful about its products' quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Brand" can be counted on to do what is right to ensure good quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[→](#)

Age

Gender

Male

Female

Non-binary / third gender

Prefer not to say


Please indicate how much you agree with the following statement

	1 (completely disagree)	2	3	4	5	6	7 (completely agree)
I consider sustainability when making purchase decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[→](#)

15

NHH



Thank you for your participation. Your contribution to our research is highly valued and we appreciate you taking the time to respond.

By responding to this survey you contributed to our master thesis research on antecedents of green trust. In this survey we specifically look at the effect of co-creation on green trust, looking at green trust through green ability, green benevolence, and green integrity.

Thank you!

Best regards,
Malene Sighaug Bigseth and Hedda Sofie Borgen

16

Appendix B3: Survey respondents

Gender		
	<i>Frequency</i>	<i>Percent</i>
<i>Male</i>	37	41.1 %
<i>Female</i>	52	57.8 %
<i>Prefer not to say</i>	1	1.1 %
<i>Total</i>	90	100 %

Age		
	<i>Frequency</i>	<i>Percent</i>
19	1	1.12 %
20	3	3.37 %
21	4	4.49 %
22	8	8.99 %
23	19	21.35 %
24	20	22.47 %
25	14	15.73 %
26	8	8.99 %
27	5	5.62 %
28	2	2.25 %
29	1	1.12 %
30	1	1.12 %
31	1	1.12 %
34	1	1.12 %
35	1	1.12 %
<i>Total</i>	89	100 %

Appendix C – Confirmatory factor analysis

Appendix C1: Initial measurement model fit DART

Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,236	32,722	32,722	4,780	29,874	29,874
2	2,847	17,796	50,518	2,572	16,076	45,950
3	1,720	10,751	61,269	1,323	8,268	54,218
4	1,590	9,935	71,204	1,246	7,787	62,005
5	0,939	5,872	77,076			
6	0,682	4,262	81,338			
7	0,547	3,420	84,758			
8	0,456	2,851	87,609			
9	0,368	2,299	89,908			
10	0,346	2,164	92,072			
11	0,304	1,901	93,973			
12	0,274	1,714	95,687			
13	0,225	1,404	97,091			
14	0,192	1,201	98,292			
15	0,186	1,161	99,453			
16	0,087	0,546	100,00			

Extraction Method: Maximum likelihood

	Factor	1	2	3	4
Dialogue	D1	0,096	0,220	0,648	-0,97
	D2	0,004	-0,530	0,826	0,097
	D3	0,165	0,206	0,668	-0,129
	D4	0,010	-0,208	0,412	0,184
Access	A1	-0,089	0,837	0,166	0,005
	A2	0,003	0,766	0,047	0,008
	A3	0,052	0,669	-0,098	0,020
	A4	-0,051	0,876	0,011	0,101
Risk assessment	R1	0,803	-0,036	0,124	0,083
	R2	0,879	-0,044	0,008	-0,081
	R3	0,840	-0,063	0,002	0,032
	R4	0,911	0,036	0,013	-0,017
Transparency	T1	0,069	-0,016	0,266	0,508
	T2	0,053	0,387	0,024	0,626
	T3	0,356	0,150	-0,129	0,585
	T4	-0,093	-0,040	-0,005	0,740

Factor Loading

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization

Appendix C2: Validated measurement model fit DART

Total Variance Explained								
Initial Eigenvalues				Extraction Sums of Squared Loadings				
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %		
1	4,929	35,205	35,205	4,545	32,463	32,463		
2	2,772	19,798	55,003	2,524	18,030	50,493		
3	1,573	11,238	66,241	1,150	8,217	58,710		
4	1,352	9,661	75,902	0,988	7,06	65,770		
5	0,601	4,290	80,192					
6	0,515	3,678	83,87					
7	0,431	3,081	86,951					
8	0,405	2,895	89,846					
9	0,344	2,458	92,304					
10	0,310	2,218	94,522					
11	0,266	1,897	96,419					
12	0,224	1,603	98,022					
13	0,188	1,343	99,365					
14	0,089	0,635	100,000					

Extraction Method: Maximum likelihood

	Factor	1	2	3	4
Dialogue	D1	0,049	0,122	0,705	-0,05
	D2	-0,004	-0,163	0,807	0,122
	D3	0,136	0,125	0,680	-0,08
Access	A1	-0,112	0,791	0,193	0,043
	A2	0,018	0,788	0,032	-0,028
	A3	0,073	0,713	-0,121	-0,029
	A4	-0,059	0,856	0,022	0,117
Risk assessment	R1	0,793	-0,042	0,146	0,082
	R2	0,865	-0,024	0,023	-0,064
	R3	0,855	-0,024	-0,021	0,010
	R4	0,884	0,039	0,042	0,02
Transparency	T2	0,013	0,285	0,087	0,708
	T3	0,335	0,092	-0,077	0,618
	T4	-0,067	-0,082	0,013	0,643

Factor Loading

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization

Appendix C3: Measurement model fit green trust

Total Variance Explained						
Initial Eigenvalues				Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,958	66,204	66,204	5,585	62,055	62,055
2	0,739	8,206	74,41			
3	0,534	5,928	80,338			
4	0,487	5,414	85,752			
5	0,402	4,463	90,215			
6	0,308	3,421	93,636			
7	0,243	2,697	96,333			
8	0,203	2,255	98,588			
9	0,127	1,412	100,000			

Extraction Method: Maximum likelihood

	Factor	1
Green Ability	GA1	0,849
	GA2	0,816
	GA3	0,785
Green Benevolence	GB1	0,769
	GB2	0,835
	GB3	0,777
Green Integrity	GI1	0,806
	GI2	0,817
	GI3	0,864

Factor Loading

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization

Appendix C4: Confirmed factors – full model

Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8,063	35,059	35,059	8,063	35,059	35,059
2	3,156	13,722	48,781	3,156	13,722	48,781
3	2,779	12,081	60,862	2,779	12,081	60,862
4	1,535	6,676	67,538	1,535	6,676	67,538
5	1,408	6,123	73,661	1,408	6,123	73,661
6	0,752	3,268	76,929			
7	0,645	2,803	79,732			
8	0,615	2,675	82,407			
9	0,521	2,265	84,672			
10	0,500	2,176	86,848			
11	0,467	2,030	88,878			
12	0,374	1,624	90,502			
13	0,332	1,444	91,946			
14	0,303	1,315	93,261			
15	0,275	1,195	94,456			
16	0,249	1,083	95,539			
17	0,231	1,005	96,544			
18	0,209	0,907	97,451			
19	0,187	0,813	98,264			
20	0,15	0,654	98,918			
21	0,102	0,444	99,362			
22	0,089	0,389	99,751			
23	0,058	0,250	100,000			

Extraction Method: Maximum likelihood

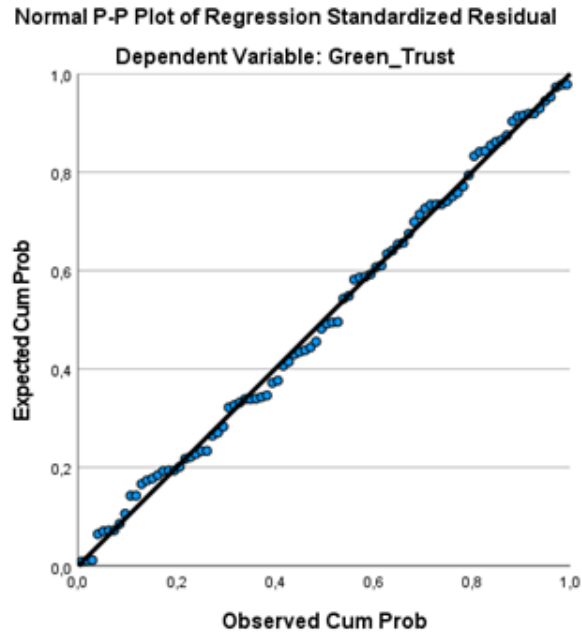
	Factor	1	2	3	4	5
Dialogue	D1	0,086	0,138	-0,020	-0,077	0,786
	D2	-0,084	-0,159	-0,071	0,165	0,855
	D3	0,067	0,108	-0,133	-0,121	0,769
Access	A1	-0,071	0,820	0,088	0,062	0,225
	A2	0,020	0,833	-0,016	0,013	0,027
	A3	0,043	0,810	-0,085	-0,068	-0,162
	A4	-0,024	0,872	0,041	0,113	0,056
Risk assessment	R1	0,032	-0,026	-0,824	0,095	0,138
	R2	0,095	-0,034	-0,854	-0,109	0,043
	R3	-0,057	-0,030	-0,916	0,041	-0,023
	R4	-0,026	0,056	-0,908	0,001	0,07
Transparency	T2	0,165	0,324	0,001	0,668	0,113
	T3	0,131	0,141	-0,36	0,608	-0,088
	T4	-0,019	-0,072	0,046	0,860	-0,009
Green Ability	GA1	0,928	0,040	0,196	-0,023	0,034
	GA2	0,766	0,135	-0,048	0,042	-0,036
	GA3	0,746	0,191	-0,136	-0,197	-0,046
Green Benevolence	GB1	0,801	-0,028	-0,053	-0,090	-0,12
	GB2	0,756	0,145	-0,033	0,062	0,142
	GB3	0,789	-0,143	-0,045	-0,098	0,137
Green Integrity	GI1	0,718	0,054	-0,075	0,191	-0,033
	GI2	0,811	-0,107	0,065	0,195	0,033
	GI3	0,826	-0,204	-0,110	0,144	-0,002

Factor Loading

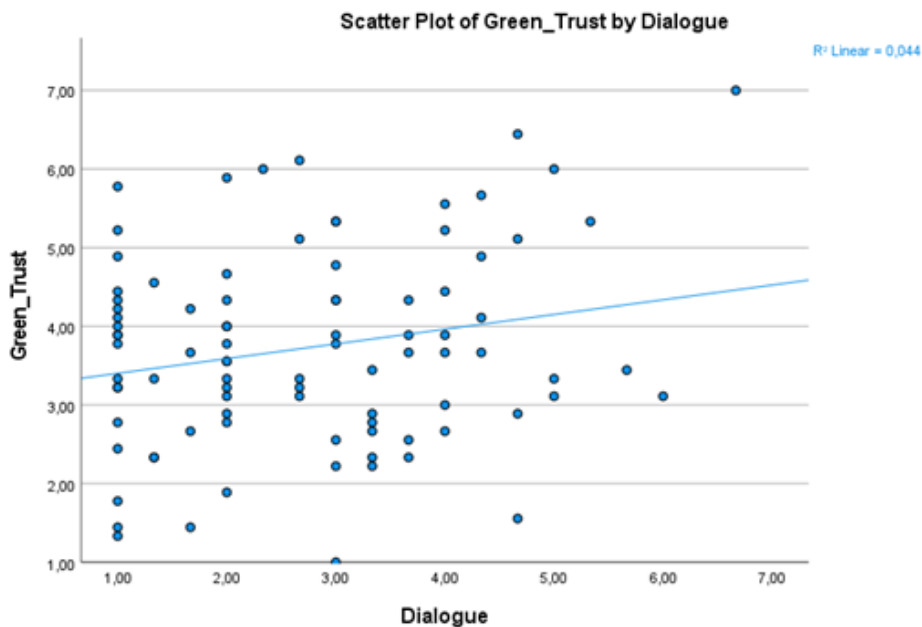
Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization

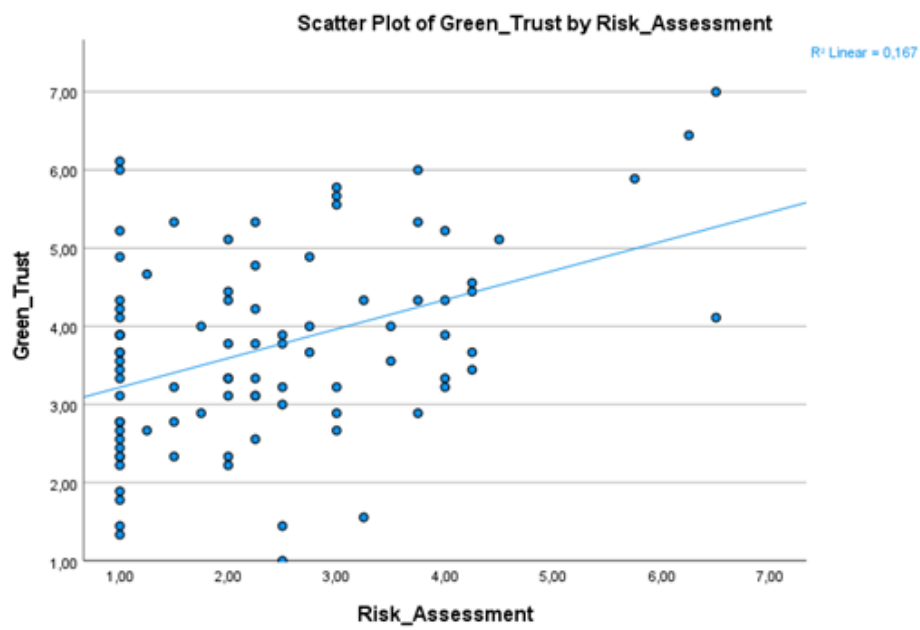
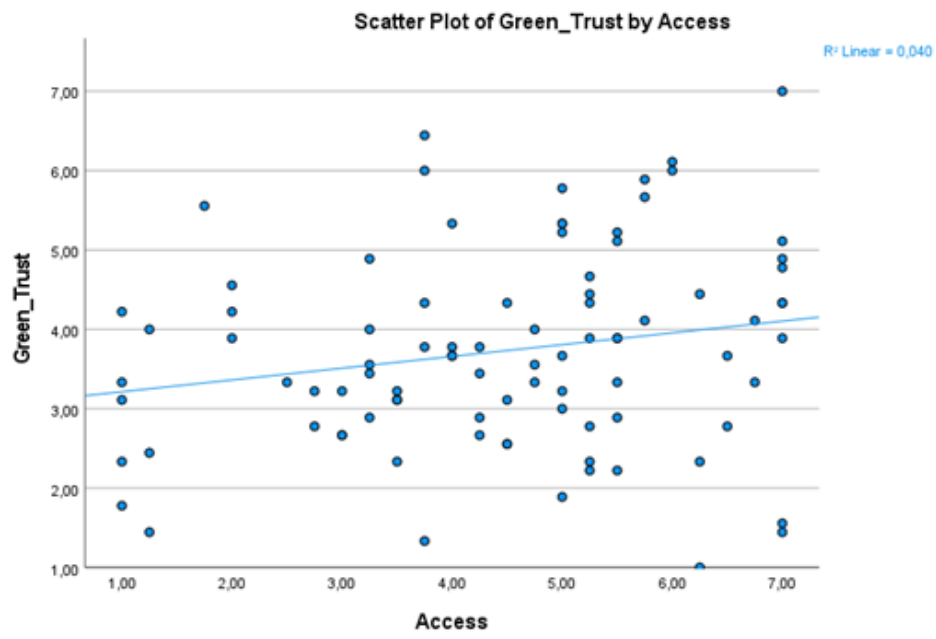
Appendix D – Assumptions in multivariate analysis

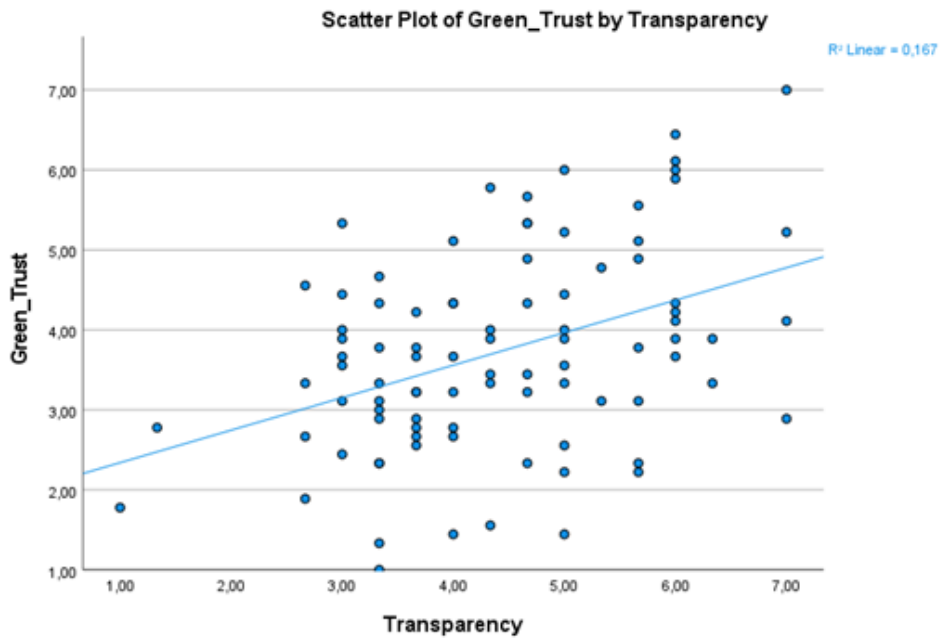
Appendix D1: Normal probability plot green trust



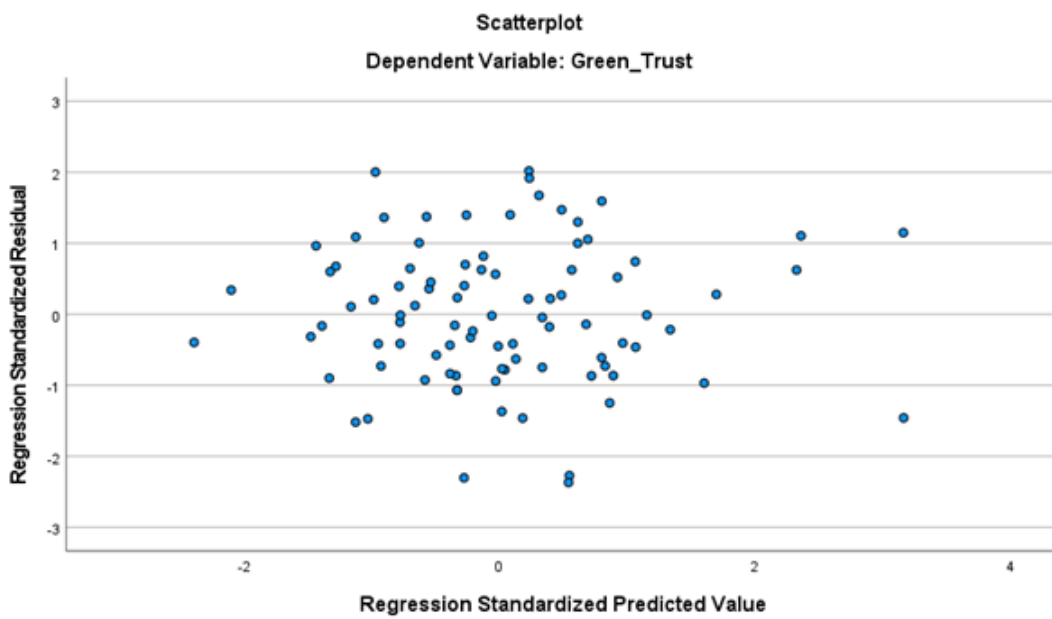
Appendix D2: Linearity scatter plots green trust





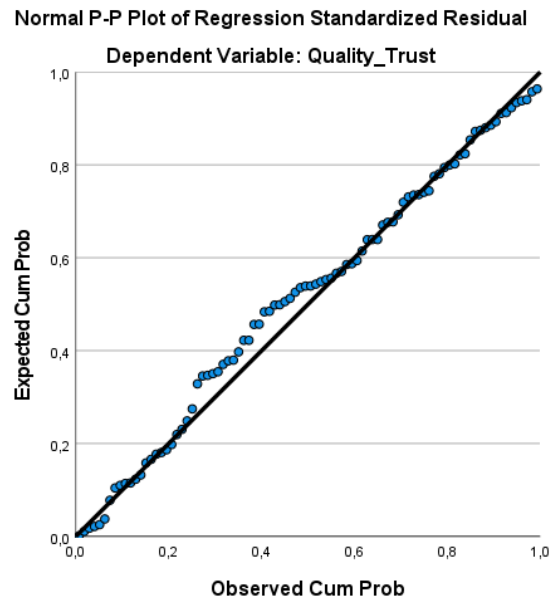


Appendix D3: Residual plot green trust

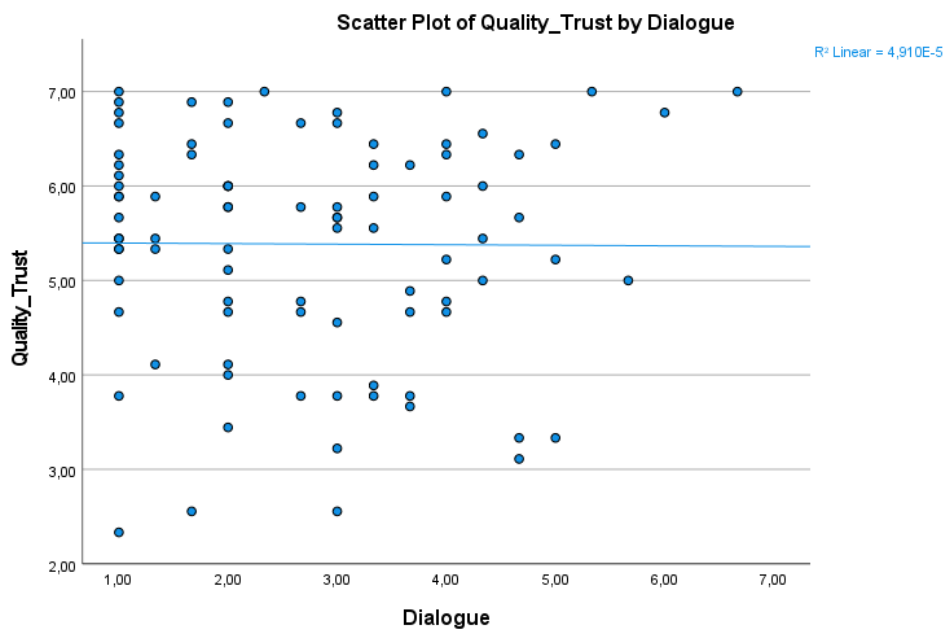


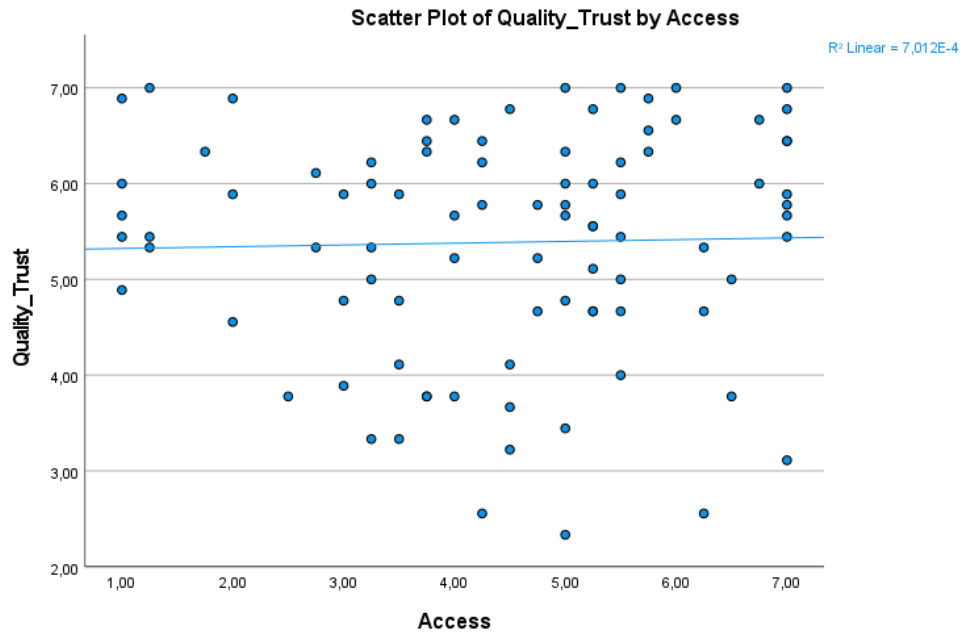
Appendix E – Additional findings

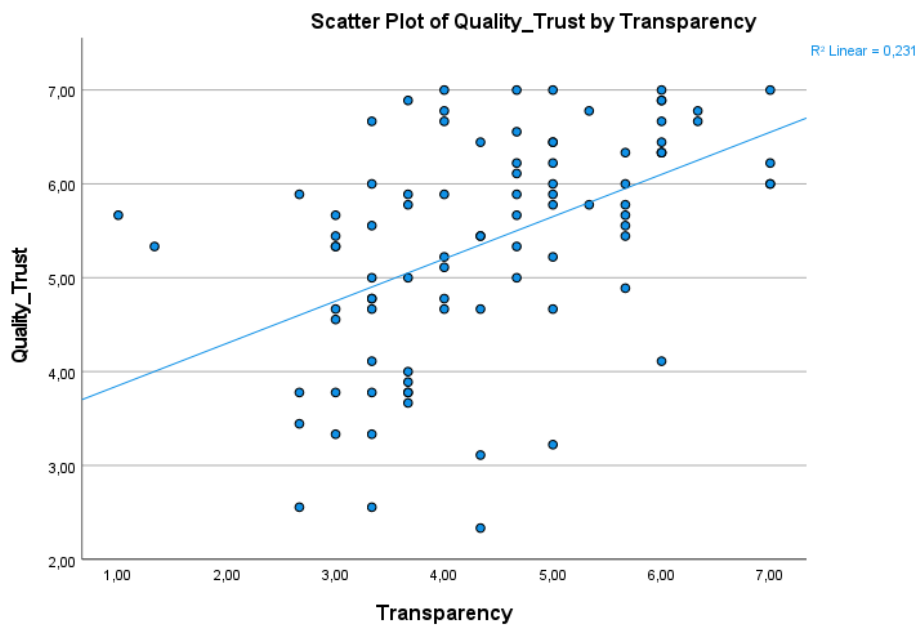
Appendix E1: Normal probability plot quality trust



Appendix E2: Linearity scatterplots quality trust







Appendix E3: Residual plot quality trust

