



The effects of co-creation in sustainable packaging design on green brand image

Vanessa Kunsmann
125152120

Dissertation written under the supervision of professor
Claudia Isabel de Sousa Costa.

Dissertation submitted in partial fulfilment of requirements for the MSc in Man-
agement with specialization in Strategic Marketing, at the
Universidade Católica Portuguesa, 01.06.2022.

Abstract

Companies are often accused of greenwashing and thus refrained from communicating sustainable measures. This is often the case in packaging. However, packaging is an important marketing tool that can assist brand image. This study looks at co-creation as a source of sustainable packaging communication that enhances green brand image. As co-creation lies in transparency between consumers and firms this study investigates co-created sustainable packaging as a suitable strategy to communicate sustainable packaging without the risk of being accused of greenwashing. This study uses experimental research with 140 participants to test differences in green brand perceptions of co-created and firm-created sustainable packaging. Contrary to the hypothesized effects, results show that co-created sustainable packaging negatively influences green brand image. This relationship is fully mediated by green brand trust. Interestingly, the results show that this effect is not achieved by higher trust in the brand claim as co-created sustainable packaging shows lower brand trust when compared to firm-created packaging. Moreover, the study finds that green brand image is not mediated by green skepticism and authenticity. The findings point to the downsides of communicating co-creation in sustainability as it lowers green brand trust and hence, green brand image. It is concluded by discussing the managerial and theoretical implications of the results.

Keywords: Co-Creation, Green Brand Image, Green Brand Trust, Green Skepticism, Authenticity

Title: The effects of co-creation in sustainable packaging design on green brand trust

Author: Vanessa Kunsmann

Abstrato

As empresas são frequentemente acusadas de greenwashing, pelo que se abstêm de comunicar medidas sustentáveis. Este é geralmente o caso das embalagens. Contudo, a embalagem é um importante instrumento de marketing que pode ajudar a imagem de marca. Este estudo considera a co-criação como uma fonte de comunicação de embalagem sustentável que melhora a imagem de marca verde. Como a co-criação reside na transparência entre consumidores e empresas, este estudo investiga a co-criação de embalagens sustentáveis como uma estratégia adequada para comunicar embalagens sustentáveis sem o risco de ser acusada de greenwashing. Este estudo utiliza investigação experimental com 140 participantes para testar diferenças na percepção das marcas verdes de embalagens sustentáveis resultantes de co-criação e criadas por empresas. Ao contrário dos efeitos hipotéticos, os resultados mostram que as embalagens sustentáveis co-criadas influenciam negativamente a imagem de marca verde. Esta relação é totalmente mediada pela confiança da marca verde. Curiosamente, os resultados mostram que este efeito não é alcançado por uma maior confiança na reivindicação da marca uma vez que as embalagens sustentáveis co-criadas mostram uma menor confiança na marca quando comparadas com as embalagens criadas por empresas. Além disso, o estudo conclui que a imagem de marca verde não é mediada pelo cepticismo verde e autenticidade. As conclusões apontam para as desvantagens de comunicar a co-criação em sustentabilidade, uma vez que reduz a confiança na marca verde e, conseqüentemente, a imagem de marca verde. Conclui-se discutindo as implicações administrativas e teóricas dos resultados.

Palavras-chave: Co-criação, Green Brand Image, Green Brand Trust, Green Skepticism, Authenticity

Título: Os efeitos da co-criação na concepção de embalagens sustentáveis na confiança da marca verde

Autor: Vanessa Kunsmann

Table of Contents

<u>ABSTRACT</u>	2
ABSTRATO	3
<u>TABLE OF CONTENTS</u>	4
<u>LIST OF FIGURES</u>	6
<u>ACKNOWLEDGEMENTS</u>	7
<u>INTRODUCTION</u>	8
CO-CREATION	9
<u>LITERATURE REVIEW</u>	11
SUSTAINABILITY	11
GREENWASHING	11
GREEN SKEPTICISM	12
PACKAGING	13
SUSTAINABLE PACKAGING	13
AUTHENTICITY	14
BRAND TRUST	15
GREEN BRAND TRUST	15
BRAND IMAGE	16
GREEN BRAND IMAGE	16
CO-CREATION	16
INNOVATION PERSPECTIVE (FIRMS' PERSPECTIVE)	17
SERVICE DOMINANT PERSPECTIVE (CO-CREATING CONSUMER & OBSERVING CONSUMER)	17
MODEL EXPLANATION AND HYPOTHESIS DEVELOPMENT	19
<u>METHODOLOGY</u>	22
METHOD	22
DESIGN	23
<u>DATA ANALYSIS AND RESULTS</u>	28
COMPARISON OF GROUPS	28

MEDIATION	30
<u>CONCLUSIONS AND LIMITATIONS</u>	<u>32</u>
DISCUSSION	32
THEORETICAL IMPLICATIONS	33
MANAGERIAL IMPLICATIONS	34
LIMITATIONS AND FUTURE RESEARCH	35
<u>APPENDIX</u>	<u>36</u>
APPENDIX 1: SURVEY DESIGN	36
APPENDIX 2	39
APPENDIX 2.1: MANIPULATION CHECK	39
APPENDIX 2.2: RELIABILITY STATISTICS	39
APPENDIX 2.3: COMPARISON OF GROUPS	55
APPENDIX 2.4: MEDIATION	57
APPENDIX 2.5: DEMOGRAPHICS	61
<u>BIBLIOGRAPHY</u>	<u>63</u>

List of Figures

Figure 1: Conceptual Model _____ 21

Acknowledgements

I would like to thank my family for all the support. A special thanks to my parents, for providing me the opportunity to study in another country and giving me the best guidance and always supporting me on my academic, professional, and personal life. Also I would like to thank my sister to always having my back and supporting me in any kind of situation, no matter how far we are from each other.

Introduction

Consumers are increasingly demanding firms to display socially responsible behavior, including factors like social justice and environmental impact, which are then reflected in consumers' purchase decisions (Rubio, Villaseñor & Yagüe, 2020). The awareness of personal and corporate decisions' impact on the environment demands a collective behavioral change to tackle the challenges of climate change (Rubio et al., 2020). Specifically, different studies show that consumers are adopting more environmental-friendly consumption and purchase behavior, to minimize ones' ecological footprint (Paparoidamis, Tran, Leonidou & Zeriti, 2019). As consumer preferences shift towards greener products, companies shift towards more sustainable offers to remain relevant for consumers and thus stay competitive. However, not only the change per se is important, but also the communication is crucial in order to achieve consumer-related goals. As marketing serves as the voice of a company, focusing on communicating sustainability and developing greener marketing brings benefits such as environmental compliance, obtaining competitive advantage, improving corporate images, seeking new markets or opportunities, and enhancing product value (Chen, 2010).

However, this pressure to become more sustainable and display more sustainable business practices is tempting some companies to exacerbate products' green claims. In 2020, H&M, a fast-fashion label, was accused of greenwashing after launching their sustainable line "conscious collection" (Wicker, 2020). The critical consumers considered it to be greenwashing since the brand was giving insufficient information about the production process, misleading consumers to develop a greener brand image of the company (Wicker, 2020; Kaner, 2021). Coca-Cola, the biggest beverage company, was accused of greenwashing, after launching the "plantbottle" (Lanthorn, 2013). The company labeled the bottles as "up to 30% plant-based", implying that the plant-based part could be any figure between 0% and 30% (Lanthorn, 2013). Coca-Cola presented the information in a way that consumers perceived the product packaging to be greener than it was, leading to greenwashing accusations. With this example, it can be seen that not only for the product itself but also for the packaging, consumers are very critical of real greenness. Companies implementing and promoting sustainable measures often start with packaging because it might be less costly and risky than product adaptations (Peattie & Charter, 1992). However, this might not necessarily change fundamental production issues, which are also recognized by critical consumers and are therefore often referred to as greenwashing with negative effects on consumer perceptions (Boz, Korhonen & Sand, 2020). Nonetheless, packaging is an

extremely relevant marketing tool for product differentiation and might, therefore, serve as a supportive green marketing tool, with the right communication (Rundh, 2013).

Companies wanting to display green approaches to the public are put under extreme scrutiny. Digital tools and platforms allow consumers to research and due to the related information transparency, sustainable strategies must be well planned and executed as well as communicated to consumers. Claiming sustainability without authentic evidence that is clearly communicated to companies' stakeholders might even worsen the green company image (Boz et al., 2020). This behavior, when consumers question the green cues of a company, is generally termed green skepticism (Leonidou & Skarmeas, 2017). When consumers' green brand trust in a company is questioned, the consumer tendency to search for more rational, objective information increases, leading to challenges in new customer acquisition as well as the ability to retain current consumers (Leonidou & Skarmeas, 2017). As the purchase decision and preferences will be affected, it is highly relevant to satisfy the consumers' needs for a transparent and authentic green branding that does not imply any false claims or greenwashing attempts (Mourad & Ahmed, 2012).

Co-Creation

Co-creation is defined as a strategy where firms involve customers actively in their innovation process, instead of performing the innovation internally (Mahr et al. 2014). Within the service marketing literature, co-creation mainly exists to provide customers the possibility of active participation in the process of value creation (Cui & Wu, 2016). Hereby, not only the co-creating consumer is targeted but also, and especially, the observing customer whose brand perception shall be influenced by commercializing those external innovations (Liljedal & Dahln, 2015; West & Borges, 2014). Several companies have already implemented the co-creation strategy. For instance, Procter & Gamble, a global fast-moving consumer goods company, owns a co-creation platform called "P&G connect and develop" (Procter & Gamble, 2018). With this open innovation platform, the company invites external creative minds to pitch innovative ideas for new products or product improvements (Procter & Gamble, 2018). Another example of a company initiating co-creation is the apparel retailer Threadless (Piller, 2010). The retailer opened its product design process to its consumers, enabling them to design their shirts or review on and vote for other users' designs (Piller, 2010).

Existing studies suggest that consumer preferences shifted towards consumer-created products when labelling a product as consumer-created versus designer created on point of sale

(Nishikawa, Schreier, Fuchs & Ogawa, 2017). Moreover, co-creation already impacted brand perceptions, including brand image, positively (Dijk, Antonides & Schillewaert, 2014). Researches imply that consumers that observe the co-creation process, prefer to buy from user-driven rather than designer-driven firms because of an enhanced identification with the company and therefore, a feeling of empowerment by being involved (Dahl, Fuchs & Schreier, 2014). Several studies emphasized that co-creation initiatives increase brand trust due to the comprehensive transparency required by this strategy (Randall, Gravier & Prybutok, 2011; Shrivastava, 2016). Especially, in a very competitive environment, consumers are facing uncertainty and, therefore, require businesses to commit to personal interests and needs as well as to provide added value (Alves & Mainardes, 2017). Though, consumers' trust in the company is an essential asset for a company as it increases for instance loyalty (Alves & Mainardes, 2017) and purchase intention (Shulga, Busser, Bai & Kim, 2021). The focus of previous research was mainly on the core product itself. Only little research focused on co-creations in packaging design and its effects on observing consumers. As the environmental consciousness of consumers is rising, it is relevant to examine how co-creations in sustainable packaging design affect consumers' brand perceptions. Especially, under the fact that various companies prefer not to promote their sustainable measures regarding packaging, to avoid greenwashing accusations and related negative consumer perceptions (Boz et al., 2020).

This research is investigating to which extent initiating and communicating co-creation of sustainable packaging affects **green brand image** compared to firm-designed sustainable packaging. This work will be reviewing the extant literature on the topics of co-creation, sustainability, greenwashing, green skepticism as well as authenticity, green brand trust, and green brand image. It will be analyzed how co-creation could foster sustainability within a company's value chain to receive a positive impact on a green brand image. It will be tested in experimental approach what effects co-creation in sustainable packaging design will have on the consumers' green brand image. How will promoting co-created sustainable packaging to observing consumers influence green skepticism, authenticity, and green brand trust? How will this affect the green brand image of observing consumers? Finally, the main research question is:

Should companies communicate co-created sustainable packages?

Literature Review

Sustainability

The Cambridge Dictionary defines the term sustainability as “the quality of being able to continue over a period of time” and related to the environment as “the quality of causing little or no damage to the environment and therefore be able to continue for a long time” (Cambridge Dictionary, 2022). The exact meaning depends on the social, economic, or ecological context (Brown, Hanson, Liverman & Robert W. Merideth, 1987). The level of consumptions are exceeding the earths’ capacity to feed the 8 million habitants that are expected in 2050 (McDonagh & Prothero, 2014). The results are massive destructions and exploitations of natural resources and ecosystems (Peattie & Charter, 1992). Greenhouse gas emissions levels are forcing society to equate more sustainable options (Paparoidamis et al., 2019).

This work focuses on green products which can be defined as “products that are safe and environmentally friendly, do not pollute the earth or damage natural resources, can be recycled, and use ingredients and packaging that do not threaten the environment” (Górska-Warsewicz, Dębski, Fabuš & Kováč, 2021). Sustainable or green development is defined as “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundland, 1987). In combination with the related growing consumer preference for environmentally friendly products (Paparoidamis et al., 2019) companies are motivated to develop and implement green marketing strategies aiming at highlighting their good intentions regarding the environment (Zhang, Li, Cao & Huang, 2018). A study from Nielsen shows that in 2015, 66% of consumers were willing to pay more for sustainable brands with a tendency to increase even more (Nielsen, 2015). Hence, companies face the challenge to satisfy the needs of green consumers and understand the relationship between their environmental concerns and purchase behavior (Peattie & Charter, 1992) as well as own capacities/abilities.

Greenwashing

To communicate environmental efforts, companies pursue green marketing strategies, aiming to attract green consumers and gain an advantage over competitors (Szabo & Webster, 2021). However, instead of making the effort and improving environmental footprints, some companies claim to implement environmental initiatives without proper accuracy, resulting in an

exaggeration of or even lies about environmental efforts (Szabo & Webster, 2021). The misalignment between company claims and practices is known as *greenwashing*. A firm does greenwash when communicating a positive environmental performance, even when poorly performing environmentally (Delmas & Burbano, 2011). 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” (Delmas & Burbano, 2011). Therefore, companies take advantage of environmental trends for their own opportunities. The drawback for companies is that greenwashing strategies have negative effects on the brand relationship with consumers, especially when the companies are being accused of greenwashing. It might undermine the confidence of the consumer, leading to confusion and therefore a decrease in brand trust and an increase in green skepticism (Szabo & Webster, 2021). In addition, greenwashing is negatively related to the green brand image (Chen, Tien, Lee & Tsai, 2016).

Green Skepticism

Skepticism can be defined as “an attitude that shows you doubt whether something is true or useful” (Cambridge Dictionary, 2022). Green skepticism occurs when consumers are in doubt about the environmental benefits or performance of a product or company (Leonidou & Skarmeas, 2017). Therefore, skepticism toward green claims of brands also decreases the level of trust in such claims (Chen, Huang, Wang & Chen, 2020). Consumers might perceive those measures as insincere and this might lead to a negative attitude towards the firm as well as green products and influence the purchase intention negatively (Goh & Balaji, 2016). Finally, consumer skepticism towards sustainable claims might have adverse effects on company image and performance (Farooq & Hendro, 2021).

Early research studied that green skepticism towards brands can be measured by the following four items: (1) Most environmental claims made on package labels or in advertising are true. (2) Because environmental claims are exaggerated, consumers would be better off if such claims on package labels or in advertising were eliminated. (3) Most environmental claims on package labels or in advertising are intended to mislead rather than to inform consumers. (4) I do not believe most environmental claims made on package labels or in advertising (Mohr, Eroğlu & Ellen, 1998).

Packaging

A highly competitive market requires companies to focus on innovations to ensure competitive advantage (Rundh, 2013). Packaging can therefore be an extremely relevant marketing tool for product differentiation (Rundh, 2013). On point of sale, packaging attracts consumers' attention and enables companies to communicate messages within the retailing environment (Draskovic, 2007). Moreover, packaging influences consumer brand perceptions, communicates brand identity, and positions the product within a product segment (Draskovic, 2007; Gómez, Martín-Consuegra & Molina, 2015). Various literature took into consideration that packaging might even be defined as the fifth "P" of Kotler and Keller's marketing mix, next to the product, price, place, and promotion (Kotler & Keller, 2006) which highlights its importance. Finally, packaging might also be a method to communicate the sustainability of a company.

Sustainable Packaging

Companies implementing and promoting sustainable measures often start with the packaging since eco-friendly changes in packaging might be less costly and less risky than changing the core product or even the production process (Peattie & Charter, 1992). Additionally, in more developed markets the packaging is often considered a source of waste and preferences are shifting to a more environmentally safe packaging (Agariya, Johari, Sharma, Chandraul & Singh, 2012).

Literature focuses on two main definitions of sustainable packaging. The Sustainable Packaging Coalition (SPC) considers a packaging to be sustainable when the packaging is beneficial, safe and healthy for individuals and communities throughout the product's life cycle; meets market criteria for performance and cost; is sourced, manufactured, transported, and recycled using renewable energy; optimizes the use of renewable or recycled source materials; is manufactured using clean production technologies and best practices; is made from materials healthy throughout the life cycle; is physically designed to optimize materials and energy; and is effectively recovered and used in biological and/or industrial closed-loop cycles (Sustainable Packaging Coalition, 2011). Likewise, the Sustainable Packaging Alliance (SPA) defines that a sustainable packaging should be *effective* by reducing product waste, improving functionality, preventing overpackaging, reducing business costs, achieving a satisfactory return on investment (ROI); *efficient* by improving the product/packaging ratio, improving energy, material, and water efficiency, increasing recycled content, reducing waste to landfill; *cyclic* by being returnable,

reusable, recyclable, biodegradable; and *clean* by reducing airborne, waterborne, and greenhouse gas emissions, reducing toxicity and littering impacts (Lewis, Fitzpatrick, Verghese, Sonneveld, & Jordon, 2007).

As demonstrated by the two definitions, sustainable packaging is a complex topic and might be challenging to implement. However, not only the implementation but also the communication might be a challenge to companies. As already mentioned, Boz et al. (2020) states that various companies prefer not to promote their sustainable measures regarding packaging to avoid greenwashing accusations and related negative consumer perceptions. Therefore, if the sustainable packaging is not authentically communicated to the consumer, it might negatively influence a company's green brand image by firstly, a decrease in perceived authenticity, secondly, an increase in green skepticism, and thirdly, a negative effect on the green brand trust. However, since sustainable packaging could also serve as a supportive green marketing tool, it is important to analyze ways of communication to prevent negative word of mouth due to green skepticism.

Authenticity

Authenticity is defined as “the quality of being real or true” (Cambridge Dictionary, 2022). In general, it can be said that brand authenticity is one of the constituting characteristics that consumers associate with a brand (Bruhn, Schoenmüller, Schäfer & Heinrich, 2012). In a brand management context, authenticity can be defined as “a subjective evaluation of genuineness ascribed to a brand by consumers” (Napoli, Dickinson, Beverland & Farrelly, 2014). Consumers want brands that are sincere and do not appear commercialized (Beverland, 2005). Therefore, it is extremely relevant to ensure that consumers have a high perception of brand authenticity. From a consumer perspective, this means that a brand should have a clear philosophy which it stands for, hold on to promises, and be true to itself (Dwivedi & McDonald, 2018). Thus, it will be assumed that a transparent and sincere communication strategy is favorable for the firms' authenticity. Previous research indicates that the level of authenticity can be differentiated into the four different dimensions continuity, credibility, integrity, and symbolism (Morhart, Malär, Guèvremont, Girardin & Grohmann, 2015). Each of the dimensions can be scaled by related items as follows. (1) Continuity: A brand with a history; a timeless brand; a brand that survives times; a brand that survives trends. (2) Credibility: A brand that will not betray you, a brand that accomplishes its value promise; an honest brand. (3) Integrity: A brand that gives back to its consumers; a brand with moral principles; a brand true to a set of moral

values; a brand that cares about its consumers. (4) Symbolism: a brand that adds meaning to people's lives; a brand that reflects important values people care about; a brand that connects people with their real selves; a brand that connects people with what is really important (Morhart et al., 2015).

Brand Trust

In general, brand trust can be defined as “the confident expectations of the brand's reliability and intentions” (Delgado, Munuera, & Yagüe, 2003) and is built through the equality inherent in dialogue (Randall et al., 2011). Bonds of integrity and shared risk between customers and the firm as well as the belonging customer community are built through this dialogue, allowing the customer to rely on the firms' honesty, fairness, responsibility, helpfulness, and benevolent (Randall et al., 2011). In a competitive environment, consumers are confronted with uncertainty (Alves & Mainardes, 2017). Therefore, brands have to invest in building trust with customers by committing to customers' interests and needs to provide the added value (Alves & Mainardes, 2017). Building a trust-relationship is essential for companies because it influences factors like brand loyalty, which in turn maintains a positive relationship to brand equity, brand image as well as purchase intention (Alves & Mainardes, 2017; Delgado-Ballester & Munuera-Alemán, 2005; Mudzakkir & Nurfarida, 2015; Shulga et al., 2021).

Green Brand Trust

Consumers need transparent green branding without involving false claims or greenwashing, to establish a green trust relationship (Mourad & Ahmed, 2012). The set of perceptions and associations that are linked to environmental terms must be reliable and well communicated. It is the willingness to depend on a product, service or brand based on the belief or expectation resulting from its credibility, benevolence, and ability about its environmental performance” (Chen, 2010). Greenwashing negatively affects consumers' brand trust by misleading and unclear information. It leads to confusion and suspiciousness regarding environmental claims and hints (More, 2019). Building long-term relationships based on trust become hence impossible which in turn diminishes the brand equity. According to Chen (2010), there are 5 items to measure green brand trust: (1) general reliable environmental commitments (2) general dependable environmental performance (3) general trustworthiness towards environmental arguments (4) environmental concerns are meeting expectations (5) keeping promises and commitments for environmental protection.

Brand Image

Brand image can be defined as the consumer's mental picture of a brand that is linked to an offering (Cretu & Brodie, 2007) and, thus, composes characteristics and attributes that consumers associate with a brand (Bruhn et al., 2012). Brand image is important for companies as it is crucial for product differentiation and communication of functional benefits, symbolic benefits, and experiential benefits (Chen, 2010).

Green Brand Image

Green brand image is a set of perceptions and associations in the mind of the consumer about the environmental commitments of a company (Mourad & Ahmed, 2012). Customers' environmental needs must be satisfied to heighten customers' favorability towards the brand and, therefore, firms must enhance environmental performance to strengthen brand equities (Chen, 2010). Thus, positive green brand image is highly relevant to companies to ensure a positive relationship with green consumers. Chen (2010) developed five main items to measure green brand image: (1) benchmark (2) professional about environmental reputation (3) success about environmental performance (4) well established about environmental concerns (5) trustworthy about environmental promises.

Co-creation

Co-creation is a strategy where firms involve customers actively in their innovation process, instead of performing the innovation internally (Mahr, Lievens, & Blazevic, 2014). The customers and firms systematically interact, learn, share information, and integrate resources to jointly create value (Prahalad and Ramaswamy 2014). In general, there are three perspectives when addressing co-creation. Firstly, the firm initiates and controls the innovation **process** (Cui & Wu, 2016). Secondly, the co-creating consumer actively participates in the innovation process (Cui & Wu, 2016). Thirdly, the observing consumer observes the co-creation process and is considered an end-consumer (Cui & Wu, 2016). The literature is divided into two different dimensions of co-creation. On the one hand the innovation perspective (Mahr et al., 2014), and on the other hand the service-dominant / marketing perspective (Ramaswamy & Venkat, 2004). While the innovation literature is mainly relevant from a firm's perspective, the service-dominant literature focuses on the consumers' perspective.

Innovation perspective (Firms' perspective)

Within the innovation perspective, external search depth is associated with radical innovation (Laursen & Salter 2006), and co-creation is an attractive tool for product development (Cui & Wu, 2016). It mainly focuses on involving customers in the process of innovation aiming at designing new products and improving the fit to the market needs (Cui & Wu, 2016). Existing theory developed three different forms of customer involvement during the innovation process, as an information source, as co-developers, and as innovators. Firstly, the customer as the information source is not directly involved in generating the product, however, he provides the firm with relevant information based on their needs as well as knowledge (Cui & Wu, 2016). Secondly, the customer as co-developers is in a collaborative process with the co-creating company (Cui & Wu, 2016). Together with the new product development, solutions to consumer problems are designed. Thirdly, customers as innovators are the primary contributor to a new product development. By the firm sharing and providing technical knowledge with the customer, he is responsible to design a solution on his own (Cui & Wu, 2016). Additional literature highlights that producers' advantage of the user as innovator might be that producers' designs are incomplete and thus, users can adapt the technology to fit their exact needs and contexts (Bogers, Afuah, & Bastian, 2010). Understanding users' needs is an essential imperative for successful innovation (Bogers, Afuah, & Bastian, 2010). Those innovation activities were usually in a conventional, firm-centered strategy, performed by the company and its employees itself (Ramaswamy & Venkat, 2004). Co-creation can lead to various advantages such as reduction of search and development costs, an increase in product relevance and performance, and opening up new markets (Dijk et al., 2014).

Service dominant perspective (co-creating consumer & observing consumer)

This study is focusing on the service-dominant dimension of co-creation. Within the service marketing literature, co-creation mainly exists to enable the customer the possibility of active participation in the process of value creation (Cui & Wu, 2016). There are two entities to be targeted. Firstly, the co-creating consumer, and secondly the observing consumers.

The *co-creating consumer* is considered the smaller target audience of both. Mostly, it is not about convincing the co-creating consumer to also operate a purchase but motivating him to participate in the value creation process: On the one side for innovational purposes (Bogers et al., 2010) and on the other side for commercializing purposes to attract the more widely represented observing consumer (West & Borges, 2014).

For *observing consumers*, co-creation is aiming to lead consumers to a purchase decision as a consequence of observing the innovation process (Liljedal & Dahlén, 2015). Observing consumers are the end-consumers who do not actively participate in the co-creation process, but actively observe the process and are influenced by brand perception due to commercializing these external innovations (Liljedal & Dahlén, 2015). Dahl et al. (2014) states that observing consumers tend to buy more from user-driven firms because of an enhanced identification with the firm that has adopted this user-driven philosophy. Since consumers are social identities, they feel empowered by being involved in the design process and they consider co-created products to fulfill better their needs compared to firm-designed products (Dahl et al., 2014; Dijk et al., 2014). This effect is mainly applicable when consumers belong to the social group of the participating consumers (Dahl et al., 2014). More theory states that the developed perceived brand innovativeness positively influences consumers' attitudes towards the brand, customer loyalty, brand commitment, and stability of buyer-seller relationship (Hubert, Florack & Gattringer, 2017) and might lead to a stronger brand attachment (Kull & Heath, 2016).

Referring to the relevant topic of sustainability within companies, recent literature investigated sustainable innovations enabled by co-creation. With the aid of diverse sustainable-oriented stakeholders in innovation networks, companies might be able to successfully develop and implement sustainable innovations (Moons, Daems, & Van de Velde, 2021; Arnold, 2017). Including consumers' practical and contextual knowledge, enables companies to open additional sustainable potentials or even structural changes (Arnold, 2017). In the food sector, for instance, co-creation already led to ideas for sustainable packaging (Filieri, 2013). However, in this case it was mainly focused on the design and usability rather than the sustainable aspects (e.g. Filieri, 2013). Nevertheless, one of the co-created outcomes in Filieri's study was a fully recyclable packaging what triggered innovation within the company (Filieri, 2013). Yet, it was concluded that there is a literature gap on co-creating sustainable packaging. Existing literature did not cover the topic of co-creating sustainable packaging and its effects on the green brand image of observing consumers. It is relevant to examine this topic because various companies prefer not to promote their sustainable measures regarding packaging, to avoid greenwashing accusations and related negative consumer perceptions (Boz et al., 2020). However, packaging has an important role in consumer (post) buying behavior and can be a powerful marketing tool, also to conduct green marketing (Agariya et al., 2012). Co-creating sustainable packaging could therefore be a solution to communicate sustainable packaging while decreasing the risk of being

accused of greenwashing and simultaneously enhancing trust and authenticity towards a brands' sustainable image.

Model explanation and hypothesis development

Since the co-creation strategy is based on systematical information exchange with an open, transparent, and hence, authentic dialogue with the consumer, it is expected that co-created sustainable packaging will influence the perceived brand authenticity after communicating to the general target group (Dijk et al., 2014). This work assumes that co-created sustainable packaging positively influences the evaluation of geniuses ascribed to a brand and that this strategy will not appear as a commercialization of sustainable activities. It is expected that co-created sustainable packaging will be perceived as a transparent and sincere communication and therefore ensure high levels of continuity, credibility, integrity, and symbolism compared to firm-created sustainable packaging. Thus H1 is constituted as follows:

H1: Consumers display higher perceived authenticity in co-created sustainable packages than in firm-designed sustainable packages.

Due to several companies practicing greenwashing, consumers skepticism towards green labels enhances, making it difficult to companies to communicate their sustainable measures (Szabo & Webster, 2021; Chen et al., 2020). On the other hand, inviting the consumers to jointly find a solution for sustainable packaging imbedded within a sincere storyline, and therefore accommodating the green consumers' needs, might lower green skepticism towards the brand compared to Firm-Created Sustainable Packaging, as co-creation is combined with transparency and open communication (Ramaswamy & Venkat, 2004; Goh & Balaji, 2016; Randall et al., 2011). Hence, by involving consumers into the innovation process, companies might overcome the issue of green skepticism (Ramaswamy & Venkat, 2004). It will be assumed that compared to an internal co-created sustainable packaging, open innovation will lower levels of doubt toward the brands' sustainability claims on packages and advertising. Hence, the following hypothesis will be tested:

H2: Labeling a sustainable package as co-created lowers consumers' green skepticism towards the brand compared to labelling it as firm-created packaging.

It will be expected that there is a strong significant positive impact of internal co-created sustainable packaging on green brand trust since co-creation, in general, has a strong significant positive impact on trust and a similar effect in terms of sustainability will be assumed

(Shrivastava, 2016). Consumers' tendency to purchase green products increases with their level of trust in sustainable products claims (Goh & Balaji, 2016). As co-creation requires comprehensive transparency of the firm and its products as well as communication, it will be assumed that implementing a sustainable co-creation in the form of packaging will positively influence the consumer's trust in the claims (Randall et al., 2011).

H3: Co-created sustainable packaging leads to consumers' higher green brand trust than firm-created sustainable packaging.

Packaging influences brand perceptions and thus brand image likewise co-creation impacts brand perceptions positively (Draskovic, 2007; Dijk et al., 2014). As a consequence, it is assumed that co-created sustainable packaging will have a similar impact on green brand image. Co-created sustainable packaging might trigger several perceptions and associations that are linked with the environmental concerns of the company. Hence, it will be assumed that this strategy positively influences consumers' green brand image of the company. Additionally, since co-creation is connected to innovation (Liljedal & Dahlén, 2015) and perceived brand innovativeness positively influences consumers' attitudes towards the brand, it will be assumed that the innovation of a co-created sustainable package will also positively influence consumers' perceived green brand image (Hubert et al., 2017).

H4: Co-created sustainable packaging positively influences consumers' green brand image.

Moreover, it will be assumed that all three variables, authenticity, green skepticism, and green brand trust function as mediators between co-created sustainable packaging and brand trust. Hereby, it is expected that authenticity affects the level of green brand image, depending on the firms' sincere communication and storyline of the co-created sustainable packaging with the consumer. Likewise, since it is expected that co-created sustainable packaging lowers levels of green skepticism, this, in turn, increases the perceived green brand image. Self-serving motivations diminish attitudes towards firms in contrast, it is expected that co-creation, with a customer-centric motivation, elevates the green brand image (Raska & Shaw, 2012). Additionally, it will be assumed that green brand trust functions as a mediator of co-created sustainable packaging and green brand image, since there is theoretical evidence about the positive correlating relationship between brand trust and brand image (Deheshti, Adabi Firouzjah & Alimohammadi, 2016). Therefore the following hypotheses was developed:

H5.1: Perceived authenticity mediates the positive relationship between co-created sustainable packaging and green brand image.

H5.2: Green skepticism mediates the positive relationship between co-created sustainable packaging and green brand image.

H5.3: Green brand trust mediates the positive relationship between co-created sustainable packaging and green brand image.

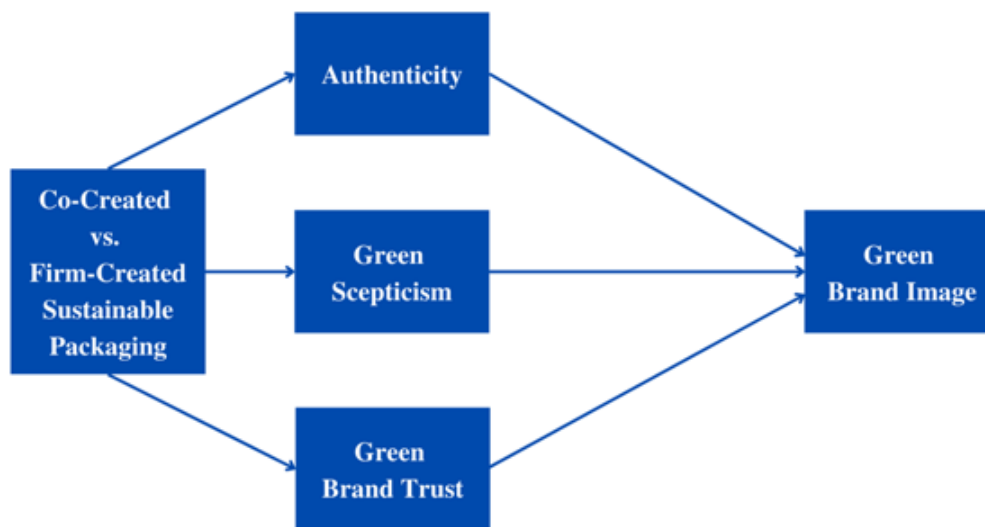


Figure 1: Conceptual Model

Methodology

Method

To approach the research question and test the hypotheses, a quantitative research will be performed. The quantitative research method is commonly used to receive objective measurements and observations. Since it is to examine the cause and effect relationship between co-created sustainable packaging and green brand image with authenticity, green brand trust, and green skepticism, this research can be described as causal (Malthora, Nunan & Birks, 2017). Using an experimental research design, we have a controlled condition in which the independent variable will be manipulated to test the hypotheses on the dependent variables and the outcomes due to the experimental treatments (Malthora et al., 2017). In this specific study, an experimental design with a post-test only control group will be used. Two randomly assigned groups are used: One experimental group (EG/ consumer group) which will be exposed to the treatment and one control group (CG/ professional group), which will not be exposed to the manipulation. In this design, no pre-treatment will be measured. Only the post-treatment of both groups will be measured and compared afterward to identify if there is a significant difference. This design is considered fairly simple to implement, as no pre-measurement is required and testing effects are eliminated (Malthora et al., 2017). *Testing effects* are caused by the process of experimentation. The main testing effect of testing occurs when a prior observation affects a later observation. In other words: post-treatment attitudes were influenced more by pre-treatment attitudes than by treatment itself. Therefore this method ensures consistency and internal validity (Malthora et al., 2017). Moreover, it possesses significant advantages in terms of time, cost, and sample size requirements (Malthora et al., 2017). It involves only two groups and only one measurement per group. Therefore, it is also the most popular design in marketing research (Malthora et al., 2017). However, this method also has some downsides as it is sensitive to *selection bias*, due to the improper assignment of participants to treatment conditions, and *mortality*¹ since it is difficult to determine which discontinues are similar to their counterparts within the control group (Malthora et al., 2017). Additionally, this design does not consider *maturation*, which means it does not allow the researcher to examine changes in individual participants (Malthora et al., 2017).

¹ Mortality: “Mortality refers to the loss of participants while the experiment is in progress” (Malthora, Nunan, & Birks, 2017)

The next step is to identify a target population. The target population is the group of individuals that this work should analyze and draw conclusions. The target population will be defined as “consumers of fashion brands”. The participants will be answering screen questions to understand behaviors of all gender and age. Therefore, this target population is not limited to these factors.

Since analyzing the whole market exceeds the size of this study in terms of organizational, time and cost constraints, the target population will be limited to a sample. The sample and the target population must share the same characteristics (Malthora et al., 2017). For this reason, the sample must be representative in to generalize the results. To ensure this, random sampling technique will be chosen. Random sampling ensures that each sample has an equal probability of being chosen. In other words, each population member has an equal probability of selection, all independently (Malthora et al., 2017). The sample is drawn by a random procedure from a sampling frame consisting out of university students and graduates. The questionnaire was sent via email and published on various social media platforms, including LinkedIn, Instagram and Facebook.

Design

For this study, N=318 participants took part in a between-subjects design study where the design mode was manipulated to assess participants’ perceptions of co-creation. The study was taken within a time frame of seven days with the platform Qualitrics. 44.3% were females and the average age was between 18 and 25 years (40.7%) and 26 and 35 years (52.9%). 66.4% of the participants were Germans. 50.7% indicated “employee” as a profession, and 32.9% were students.

First, participants were welcomed and informed about the research purpose. At the start, everyone was introduced to the fictitious company launching a new sustainability strategy. A fictitious brand was chosen to ensure that the participants had no previous relationship with the brand which could influence the results. Each participant read the same information about the company, including the operating industry (apparel) and the company’s current concerns about sustainable measurements (see Appendix 1 for details).

Manipulation Check

Method: Participants were randomly assigned to the professional and consumer group. The descriptive statistics demonstrated that 72 out of 140 participants, which corresponds to 51.40%, were assigned to the consumer group and 65 (48.6%) to the professional group. The participants in the professional group read that the firm created sustainable packaging. The participants in the consumer group read that consumers co-created the packaging. After reading about the new innovation and seeing a picture of the creation platform as well as the packaging with the corresponding label, the participants completed a manipulation check indicating whom they perceived to be mainly responsible for it [*“Who do you think was involved in creating or designing the new package?”* 1= consumers; 2= company & consumers; 3=company].

Measure: The goal of the manipulation check was to examine whether or not the manipulation of the independent variable has had its intended effect on the participants. Also, it provides evidence for the construct validity of the manipulation. Therefore, an analysis of variances (ANOVA) was applied to test if there is a significant difference between the means of the groups. The descriptive statistics show that the professional group has a mean of 2.29 ($M_{\text{Prof}} = 2.29$) with $Sd = 0.459$ and the consumer group a mean of 1.83 ($M_{\text{CC}} = 1.83$) with $Sd = 0.581$. To prove a statistically significant difference, the p-value of ANOVA has to be observed, which shows a value of <0.001 .

Result: Since $F(1,138) = 26,882$, $p < 0.001$, it can be assumed that the groups are significantly different and the manipulation was successful.

Afterward, all participants were asked to complete a series of questions. All of those questions consisted of a 7-Point Likert scale from strongly disagree to strongly agree, respectively. The participants were asked to evaluate the level of agreement/ disagreement on different items demonstrated as statements. To prove the reliability of the variables and the included items, the Cronbach's Alpha coefficient should score a minimum of 0.7 or higher (Malthora et al., 2017). If this requirement is fulfilled, the variable is considered reliable and can be used for further analysis (Malthora et al., 2017). In case the requirement is not fulfilled, the items from the Cronbach's Alpha if Item deleted that overscore the Cronbach's Alpha value shall be removed (Malthora et al., 2017). Afterward, the same procedure is applied again until the Cronbach's Alpha scores a value higher than 0.7.

Green Brand Orientation

Method: The participants were asked to evaluate their *consumer sustainable orientation* in an ecological dimension. This question is important to analyze whether the favourability towards sustainability influences the answers of the survey. For this Roth and Robbert (2013) defined a scale to measure orientation towards ecological, social, and economical sustainability. As already explained in the literature review, it will be focused on the ecological aspect. Therefore a 7-Point Likert scale (from strongly disagree to strongly agree) with five items, based on Roth and Robbert (2013) was applied.

Measure: The Cronbach Alpha yields $\alpha = 0.820$ and is therefore > 0.7 .

Result: The variable green brand orientation can be considered as reliable.

Authenticity

Method: The first variable which was tested was *authenticity*. It was measured based on the its previous discussed four dimensions, continuity, credibility, integrity, and symbolism (Morhart et al., 2015). Each dimension consists of different items. The items were demonstrated as statements, which were then evaluated by the participants. The items consisted out of statements about for example honesty of the brand for credibility and moral principles of the brand for integrity.

Measure: Since the literature review yields that authenticity consists of 4 dimensions, each dimension is analysed by its reliability and afterward a factor analysis will be run in order to prove their existence. The Cronbach Alpha yields credibility $\alpha = 0.818$, integrity $\alpha = 0.820$, symbolism $\alpha = 0.824$ and continuity $\alpha = 0.838$. Therefore, all items in each dimension and thus, each dimension is considered reliable. To assess the suitability of data for the factor analysis, the correlations in the correlation matrix need to be checked. It can be seen that all variables are overscoring 0.3 which means no variables have to be excluded (Malthora et al., 2017). The KMO test gave a sampling adequacy of 0.779 and therefore, $\geq 0,6$. Hence, there is a correlation and factor analysis can be used (Malthora et al., 2017). The Bartlett Test $p < 0.001$ which is < 0.05 significance level (Malthora et al., 2017). The "Total Variance Explained" already demonstrates that one factor can be kept since for the first component the eigenvalue scores 2.650, which is the only value > 1.0 (Malthora, Nunan, & Birks, 2017). Finally, the component matrix shows that one component was extracted. This proves that the four dimensions of authenticity build one factor. The analysis can be therefore continued and the variable

authenticity can be computed. The new computed variable authenticity yields a Cronbach Alpha of $\alpha = 0.822$.

Result: The factor analysis proves that authenticity consists out of the four dimensions. The resulting Cronbach Alpha $\alpha = 0.822$ shows that the variable is considered as reliable.

Green Skepticism

Method: The level of green skepticism towards the presented brand was measured by four different items, for example “I believe most environmental claims made on this package label are true” and “I think the environmental claims of TRUE Apparel are exaggerated” (Mohr, Eroğlu, & Ellen, 1998).

Measure: The variable “green skepticism” appeared to be just over 0.7. The Cronbach Alpha of green skepticism gives a coefficient of $\alpha = 0.710$ and is higher than the minimum reliability requirement of 0.7. Nonetheless, to ensure high reliability, a closer look was taken at the items. The item statistics *show* that the median of the item “I believe most environmental claims made on this package label are true” scores 5.29 which might be significantly different compared to the other values. *Cronbach’s Alpha if Item deleted* is with a score of $\alpha = 0.838$ for this item > 0.71 . Hence, the variable this item was deleted in order to provide more reliability. All *Cronbach’s Alpha if Item deleted* remain under the new value of $\alpha = 0.838$.

Result: The new Cronbach’s Alpha with the remaining three items scores a value of $\alpha = 0.838$ and is now considered as reliable. The new variable “Green skepticism” constitutes out of the remaining three items.

Green Brand Trust

To find out how co-created versus firm-created sustainable packaging influences green brand trust, the participants read 5 different statements corresponding to 5 different items (Chen, 2010). The statements contained for example personal feelings about the dependency on environmental commitment.

Measure: The Cronbach Alpha yields $\alpha = 0.894$ and is therefore > 0.7 .

Result: The variable green brand trust can be considered reliable.

Green Brand Image:

To study the perceived green brand image of the brand, five different items, identified by Chen (2010), were exposed to the participants. The participants evaluated statements about for example success of sustainable performance and trustworthiness of environmental promises.

Measure: The Cronbach Alpha yields $\alpha = 0.864$ and is therefore > 0.7 .

Result: The variable green brand image can be considered reliable.

Data Analysis and Results

Comparison of groups

In order to examine whether or not there are any statistically significant differences between the professional group and the consumer group, ANOVA was conducted respectively.

H1: Consumers display higher perceived authenticity in co-created sustainable packages than in firm-designed sustainable packages.

In terms of authenticity, the descriptive statistics show that the values of both groups do almost not differ, with $M_{\text{Prof}} = 5.2659$ and $Sd_{\text{Prof}} = 0.68749$ for the professional group and $M_{\text{CC}} = 5.1262$ and $Sd_{\text{CC}} = 0.84228$ for the consumer group. The mean for authenticity in the professional group is slightly higher than in the experimental group. In H1, it was assumed that co-creation would increase perceived authenticity compared to firm-creation, which does not apply here. However, this is still not enough evidence to make about a statistical significant difference. Therefore, ANOVA was asserted and demonstrated that no significant difference between the groups can be assumed since $p = 0.286 > 0.05$, $F(1,138) = 1.149$, $p = 0.286$. Finally, H1 can be rejected, co-created sustainable packaging does not influence perceived authenticity.

H2: Labeling a sustainable package as co-created lowers consumers' green skepticism towards the brand compared to labelling it as firm-created packaging.

The descriptive statistics demonstrate that the values of both groups regarding green skepticism slightly differ, with $M_{\text{Prof}} = 3.8137$ and $Sd_{\text{Prof}} = 1.43330$ for the professional group and $M_{\text{CC}} = 4.0370$ and $Sd_{\text{CC}} = 1.42365$ for the consumer group. The mean for green skepticism in the consumer group is slightly higher than in the professional group. Especially, in H2 it was assumed that co-creation would decrease consumers' green skepticism compared to the professional group and not contrary as is the case now. However, this is still not enough evidence to assume a significant difference. ANOVA showed that $p = .357$ and hence, $p > 0.05$, which means there is no significant difference between both groups, $F(1,138) = 0.855$, $p = 0.357$. Finally, it can be said that co-created sustainable packaging does not influence green skepticism and H2 can be rejected.

H3: Co-created sustainable packaging leads to consumers' higher green brand trust than firm-created sustainable packaging.

The descriptive statistics show that the mean values of both groups differ, being $M_{\text{Prof}} = 5.3000$ and $Sd_{\text{Prof}} = 0.78455$ for the professional group and $M_{\text{CC}} = 4.9139$ and $Sd_{\text{CC}} = 1.05394$ for the consumer group. Hence, the value for green brand trust in the professional group is slightly higher than in the consumer group. In H3, it was assumed that the manipulation triggers a higher green brand trust, which does not correspond to the results but still there is assumed to be a difference between the groups. However, there is not enough evidence yet to conclude that the means are significantly different. To test whether the groups are significantly different, ANOVA was asserted and proved that there is a significant difference between the professional and consumer group with a p-value of $p = 0.016$ and hence, $F(1,138) = 5.990$, $p = 0.016 < 0.05$. In the end, it can be said that the label of co-created sustainable packaging does significantly impact the level of green brand trust compared to firm-created sustainable packaging. However, it was assumed that the impact has a positive impact on green brand trust. The results show the opposite: The label co-created sustainable packaging negatively influences green brand trust compared to firm-created sustainable packaging.

H4: Co-created sustainable packaging positively influences consumers' green brand image.

The descriptive statistics show that the values of both groups in terms of the green brand image almost do not differ, with $M_{\text{Prof}} = 5.3088$ and $Sd_{\text{Prof}} = 0.69061$ for the professional group and $M_{\text{CC}} = 5.0889$ and $Sd_{\text{CC}} = 1.05771$ for the consumer group. The mean value for green brand image in the professional group is slightly higher than in the consumer group which does not conclude H4. In H4 it was assumed that co-created sustainable packaging enhances consumers' green brand image compared to firm-creation. However, this is not enough evidence to conclude a statistically significant difference. ANOVA demonstrated that with a p-value of 0.15 there is no significant difference between the groups, $F(1,138) = 2.096$, $p = 0.150 > 0.05$. Finally, this means that there is no significant difference in green brand image when the sustainable packaging is co-created or firm-created and H3 can be rejected.

Green Brand Orientation

To review whether results were influenced by green brand orientation the two groups were analyzed and compared by asserting ANOVA. With means of $M_{\text{Prof}} = 6.0676$ (professional group) and $M = 5.8567$ (consumer group) and a p-value of $0.136 > 0.05$, it can be confirmed that it exist equal variances in green brand or between both groups, $F(1,138) = 2.252$, $p = .136 > 0.05$. This sets out that the results were not influenced by the green brand orientation of the participants.

Mediation

H5.1-H5.3

A simple mediation via process macro (Hayes, 2013) was performed to analyze whether co-created sustainable packaging predicts green brand image and whether the direct path would be mediated by the factors authenticity, green skepticism, and green brand trust. However, no total effect of co-created sustainable packaging on the green brand image could be observed, with regression coefficient $\beta = -0.2199$ and $p = 0.1482 > 0.05$. Even though there still can be mediation. Since the pure effect of mediation is described by the indirect effect, for many statisticians this is the most important criterion to be able to speak of mediation - regardless of the other conditions (Chen, 2010).

Based on Hayes (2013), after entering the mediator *authenticity* into the model 4, it was found that co-creation does not predict the mediator significantly, $\beta = -0.1398$, $p = 0.2862$. However, authenticity predicts green brand image significantly, $\beta = 0.7828$, $p < .001$. The direct effect of co-creation on green brand image remains not significant with a p-value of 0.3278 and $\beta = -0.1105$. Indirect effects could not be concluded, as indirect effect $ab = -0.1094$, 95%-CI[-0.3206, 0.0995] and H5.1 can be rejected.

When entering the mediator *green skepticism* into the model 4 (cf. Hayes, 2013), co-creation did not predict the mediator significantly as $\beta = 0.2233$ and $p = 0.3604$. Likewise, green skepticism did not influence green brand image significantly as $\beta = 0.0884$ and $p = 0.1540$. The direct effect of co-creation on green brand image did thus, remain not significant with $\beta = -0.2397$ and $p = 0.1144$. Also, no indirect effect could be concluded, indirect effect $ab = 0.0197$, 95%-CI[-0.0268, 0.0927]. Finally, the relationship between co-created sustainable packaging and green brand image is not mediated by green skepticism and H5.2 can be rejected

After entering *green brand trust* as a mediator into the model (cf. Hayes, 2013), co-creation did significantly predict the mediator, $\beta = -0.3861$ and $p = 0.0155$. Likewise, green brand trust predicted green brand image with $\beta = 0.7681$ and $p < 0.001$ and the indirect effect yields $ab = -0.2966$, 95% CI[-0.5528, -0.0553]. Hence the relationship between co-created sustainable packaging and green brand image is fully but negatively mediated by green brand trust and H5.3 can be accepted. It is important to highlight that the direct effect of co-creation on green brand image was insignificant, and for this reason, there is a full (negative) mediation of this relationship through green brand trust.

Finally, the following can be concluded. Co-created sustainable packaging does not have a direct effect on green brand trust. However, co-created sustainable packaging has a significant influence on green brand image that fully mediated by green brand trust. Authenticity has an impact on green brand image, however, the green brand image through co-creation is not explained by authenticity and green skepticism.

Conclusions and limitations

Discussion

The goal of the research was to examine whether and to which extent co-created sustainable packaging will influence the consumers' green brand trust compared to firm-designed sustainable packaging. This study was aiming to develop a strategical communication solution for companies to promote their sustainable measures regarding packaging without risking greenwashing accusations.

The outcomes of the study demonstrate that claiming sustainable packaging as co-created will negatively influence green brand image only through the mediator green brand trust. However, it was expected that co-creation would have a positive influence on the consumers' perception. The study shows the opposite: When comparing the sustainable packaging label of consumer-created and firm-created, the firm-created label evokes a higher green brand trust than the consumer-created label. Hence, green brand image is rather negatively influenced by co-created sustainable packaging through green brand trust. The conclusion of this study would therefore be, that it is not more effective to promote a co-created sustainable packaging than firm-created. Now the question arises how results could differ from the existing literature. It was discussed that the co-creation process enhances trust accompanied by transparency and communication (Shrivastava, 2016). Therefore, elaborating this to a sustainable level and assuming equivalency through a similar effect, it was expected that co-created sustainable packaging also enhances green brand trust, which was not the case in this study. A possible reason for this could be the sustainability factor. There is the possibility that co-creation related to sustainability topics might elicit different levels of trust compared to for example functional co-creations like with the Procter and Gamble co-creation platform (Procter & Gamble, 2018). This does not mean there is no relevant influence. Indeed, this study proves that co-created sustainable packaging has an impact on green brand trust, however, the influence is negative, and not positive as assumed.

Furthermore, a direct effect co-created sustainable packaging on green brand image was not confirmed, although authors argued, on the one hand, that packaging in general influences brand perceptions (Draskovic, 2007) and, on the other hand, that co-creation impacts brand perceptions positively (Dijk et al., 2014). Additionally, literature argued that co-created products fulfill better consumers' needs than firm-designed products (Dijk et al., 2014). However, this

might not appeal to sustainable packaging and co-creation in combination. The influence of co-creation only exists through its mediator green brand trust. A possible explanation for this might be that co-creation of core products versus the periphery packaging might lead to different brand perceptions.

In terms of authenticity and green skepticism, it seems irrelevant to the consumer whether the sustainable packaging is co-created or firm-created. Previously, it was argued that an open, transparent, and authentic dialogue would influence the perceived brand authenticity (Dijk et al., 2014). As this work argued that co-creation requires comprehensive transparency (Shrivastava, 2016), it was expected that the strategy will also have an impact on authenticity and lower green skepticism, which could not be concluded.

Theoretical Implications

This research provides valuable insights about the relationship between co-creation and sustainable packaging and its effects on green brand trust and green brand image through green brand trust in the apparel industry. Previous research has focused on the positive effects of co-creation on observing consumers on core products. In this research it was tested whether these effects would also apply on the periphery packaging. The results do not fit with the theory which leads to the conclusion that in terms of packaging, co-creation might not enhance green brand image through enforced green brand trust.

There is the possibility of a different perception of co-creations in the core product and in the periphery packaging. In a next step, it should be researched whether sustainable co-creations in the core product would lead to the same results. In the case that they differ, and a significant difference between a sustainable product as co-creation or firm-creation can be observed, this would lead to the conclusion that sustainable co-creation is more effective on the core product than on the periphery packaging. Under the circumstance that results remain equal, the research should be repeated in order to see whether co-created packaging without any sustainable incentives, would lead to the same results. In this context, similar results and no significant differences would lead to the assumption that neither in packaging nor in terms of sustainability co-creation has a positive impact on green brand trust and hence, green brand image. If a significant difference would be detected, once could assume that co-creation is perceived differently in terms of sustainability.

Lee and Kang (2016) already provided some research to the literature about the differences in a core product and A peripheral innovation. The authors examined that most literature mainly considers innovations for core products to have major effects on the overall innovation or on the market outcomes (Lee & Kang, 2016). However, they suggest a framework in which it is demonstrated how peripheral innovation can indeed create a significant competitive advantage (Lee & Kang, 2016). The research summarizes four to implement a peripheral innovation successfully (Lee & Kang, 2016), as follows: “First, find customer hassles latent in the core components. Second, address those pain points by improving usability through peripheral components. Third, create synergy between the core and peripheral components. Finally, minimize costs associated with changes to peripheral components” (Lee & Kang, 2016). Taking this framework into consideration as well as the topics of co-creation and sustainability, the sustainable co-creation in the periphery could eventually become better accepted by the consumer when adapting the third stage of the framework. Hence, one could assume that if synergy between the sustainable co-creation and the core product, in our example the clothes, would be created, the green brand trust would increase. Therefore, only co-creating sustainable packaging might not be enough, as it should also be related to the product itself. This might be an interesting topic for future research.

Managerial Implications

The managerial implication would be not to use co-creation as a strategy to promote sustainable packaging as it lowers levels of green brand trust and thus, has a negative impact on green brand image. This can in turn lead to negative word of mouth and the risk of greenwashing accusations as discussed at the beginning of this research. Therefore, co-creation might not be a favorable solution to communicate sustainable packaging without being accused of greenwashing, as proposed in the beginning. Additionally, co-creating sustainable packaging does neither influence the brand authenticity nor does it lower the green skepticism which lead to the assumption that there would be no incentive to communicate co-creation. However, in case that an implementation of this strategy is desired, it will be recommended to focus enormously on green brand trust, since this is the main factor that diminishes green brand image through co-creation. Establishing a strong consumer relationship based on trust might also have a positive effect on green brand trust when introducing co-creation for sustainable packaging.

Limitations and Future Research

Firstly, the scenario chosen for this research was limited to the apparel industry. Further research could examine if green consumer perceptions vary depending on the industry. Other industries that might be interesting to analyze could be online-retailer in general, fast-moving consumer goods as well as the food and beverage industry, where high amounts of waste are produced through packaging.

Secondly, the scenario chosen for this research was limited to an unknown, invented start-up company. The intention was that consumers do not have any kind of former relationship with the investigating brand. The results could change depending on consumers' previous relationships with brands or the size of the company. For instance, results could differ when companies are already known for their sustainable implementations or when companies already have been confronted with greenwashing accusations, and are environmentally questionable. Also the size, age, or country of origin of a company could provoke different results.

Thirdly, the target population "consumers of fashion brands", mainly focussed on ages between 18 and 35 and the main professions were "students" and "employees" (see Appendix 2.5). It will be recommended to repeat the study in a broader scope to ensure that several age groups, genders, nationalities, and professions are represented and to observe whether results change depending on different demographics.

Lastly, as already implied in the implication section, it will be recommended to research whether results differ when a sustainable core product and not a sustainable packaging is co-created and communicated to the observing customer. Additionally, it would be interesting to find out if green brand image is perceived differently when sustainable measures within the company are being co-created, that are not directly product related.

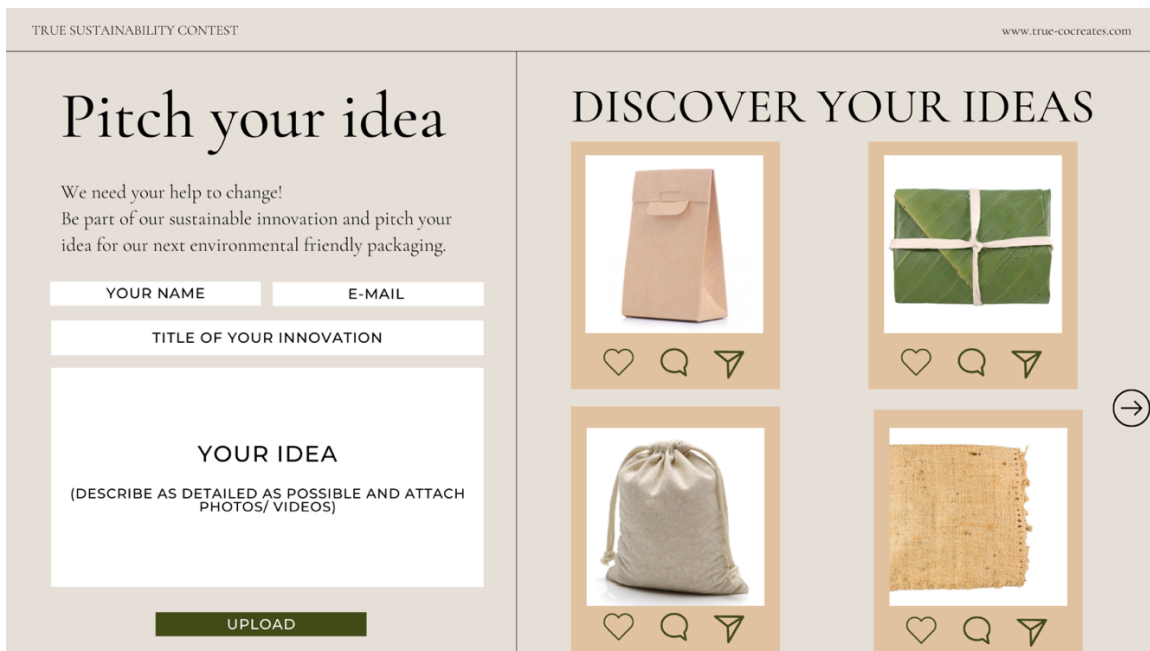
Appendix

Appendix 1: Survey design

[TRUE Apparel is a clothing start-up from Berlin that only distributes online through their own online shop. They offer a small range of apparel products, including t-shirts, pants and dresses, which were sold successfully within their first business year. The company receives its textiles from various distributors, as they are still new to the industry and accordingly need to establish relationships first. Therefore, it is not known where exactly the clothes are produced. One year after their launch, they decide to foster more sustainability within their company and minimize waste. TRUE Apparel is aiming to follow a zero-waste policy.]

Consumer Group

[Packaging is a relevant topic to the start-up since they are only selling products online and shipping them directly to their customers' homes. To become more sustainable, TRUE Apparel launched a platform where consumers can pitch their own ideas for sustainable packaging since packaging is often a source of waste. In order to offer the consumers some key facts about the company, which might be helpful for the idea creation, participants received detailed information about (1) how TRUE Apparels' current packaging process works, (2) what TRUE Apparels' future goals are and (3) what kind of resources they have available. Everyone was able participate, review other ideas and comment on them. This is how the co-creation platform looked like. Please take a close look at the picture:]



The image shows a screenshot of the 'TRUE SUSTAINABILITY CONTEST' website. The page is divided into two main sections: 'Pitch your idea' and 'DISCOVER YOUR IDEAS'. The 'Pitch your idea' section includes a form with fields for 'YOUR NAME', 'E-MAIL', and 'TITLE OF YOUR INNOVATION', followed by a large text area for 'YOUR IDEA' with the instruction '(DESCRIBE AS DETAILED AS POSSIBLE AND ATTACH PHOTOS/VIDEOS)'. Below the form is an 'UPLOAD' button. The 'DISCOVER YOUR IDEAS' section displays a grid of four images of sustainable packaging ideas, each with a heart icon, a comment icon, and a share icon. The ideas include a brown paper bag, a green leaf-based package, a beige drawstring bag, and a piece of textured fabric. A right arrow icon is visible on the right side of the grid.

[After one year, TRUE Apparel ended the contest and announced the winner. The idea with the most consumer votes was implemented. With the help of the winner, they were able to develop and launch a fully compostable packaging that can also be used to grow plants like wildflowers or herbs. The consumer had the idea to use post-consumer materials and embed them with different plant seeds that grow when planted in soil. He came along with this idea because he hates to throw away the packages but often it's hard to up-cycle them or there are only a few ways to re-use them. With this innovation TRUE Apparel can make a special gift to environmentally concerned customers like him, leaving no waste behind. This is what the new packaging looks like. Please take a close look at the picture:]



Professional Group

[Packaging is a relevant topic to the start-up since they are only selling products online and shipping them directly to their customers' homes. Therefore, the management team of TRUE sat down with the research and development team to find a new sustainable packaging, since packaging is often a source of waste. They came up with an internal company platform, where different design related departments were able to pitch their ideas on sustainable packaging.]

TRUE APPAREL FOR SUSTAINABLE PACKAGING
www.true-internal.com

BRAINSTORM

In terms of our zero-waste policy goals, our R&D team is trying to innovate a new sustainable package. To all departments, please brainstorm and pitch your ideas here.

DEPARTMENT NAME


TITLE OF INNOVATION

IDEA


(DESCRIBE AS DETAILED AS POSSIBLE AND ATTACH PHOTOS/ VIDEOS)

UPLOAD


DISCOVER PITCHES




R&D DEPARTMENT



PRODUCT DESIGN DEPARTM.



PACKAGING DESIGN DEPARTMENT



BUSINESS DEVELOPMENT DEPARTMENT

→

The company came up with a fully compostable packaging that can also be used to grow plants. TRUE will now use as a packaging post-consumer materials and embed them with different plant seeds that grow when planted in soil, like wildflowers or herbs. The company came along with this idea because they assume that customers hate to throw away packages but often it's hard for customers to up-cycle or re-use them. With this innovation TRUE can make a special gift to environmentally concerned customers, leaving no waste behind.]



Manipulation Check [Who do you think was involved in creating or designing the new package? Company; company & customers; customers]

Green Brand Orientation [How much do you agree or disagree with the following statements? It is important to me to take care of our environment.; It is important to me that the manufacturing of products does not harm our environment.; I think it is important that products can be recycled.; The long-run preservation of natural resources concerns me.; It is important to me, that products are reusable to conserve natural resources.]

Authenticity [How much do you agree or disagree with the following statements? TRUE Apparel is... **Credibility:** a brand that will not betray you; a brand that accomplishes its value promise; an honest brand. **Integrity:** a brand that gives back to its consumers; a brand with moral principles; a brand true to a set of moral values; a brand that cares about its consumers. **Symbolism:** a brand that adds meaning to people's lives; a brand that reflects important values people care about; a brand that connects people with their real selves; a brand that connects people with what is really important. **Continuity:** TRUE Apparel is a brand with a history; TRUE Apparel is a timeless brand; TRUE Apparel is a brand that survives times; TRUE Apparel is a brand that survives trends]

Green Skepticism [How much do you agree or disagree with the following statements? I believe most environmental claims made on this package label are true.; I think the environmental claims of TRUE Apparel are exaggerated. Consumers would be better off if such claims on package labels or the website were eliminated.; The environmental claims on these packages and the website are intended to mislead rather than to inform consumers.; I do not believe most environmental claims made on TRUE Apparel's packages and website.]

Green Brand Image [How much do you agree or disagree with the following statements? TRUE Apparel is environmentally stronger committed than its competitors; TRUE Apparel is professional about its' environmental reputation; TRUE Apparel has a successful sustainable performance; TRUE Apparel is dedicated to environmental concerns; TRUE Apparel's environmental promises are trustworthy]

Green Brand Trust [How much do you agree or disagree with the following statements about TRUE Apparel? You feel that this brand's environmental commitments are reliable; You feel that this brand's environmental performance is generally dependable; This brands' environmental argument is generally trustworthy; This brands' environmental concerns meet your expectations; This brand keeps promises and commitments for environmental protection.]

Appendix 2

Appendix 2.1: Manipulation Check

Descriptives								
Who do you think was involved in creating or designing the new package?								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Control Group	68	2,29	,459	,056	2,18	2,41	2	3
Experimental Group	72	1,83	,581	,069	1,70	1,97	1	3
Total	140	2,06	,572	,048	1,96	2,15	1	3

Tests of Homogeneity of Variances						
		Levene Statistic	df1	df2	Sig.	
Who do you think was involved in creating or designing the new package?	Based on Mean	,234	1	138	,629	
	Based on Median	,705	1	138	,403	
	Based on Median and with adjusted df	,705	1	137,625	,403	
	Based on trimmed mean	,706	1	138	,402	

ANOVA					
Who do you think was involved in creating or designing the new package?					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7,425	1	7,425	26,882	<,001
Within Groups	38,118	138	,276		
Total	45,543	139			

Appendix 2.2: Reliability Statistics

Authenticity: Credibility

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,818	,820	3

Item Statistics			
	Mean	Std. Deviation	N
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that will not betray you	5,28	1,138	140
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that accomplishes its value promise	5,53	1,007	140
How much do you agree or disagree with the following statements? TRUE Apparel is... - an honest brand	5,47	1,042	140

Inter-Item Correlation Matrix			
	How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that will not betray you	How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that accomplishes its value promise	How much do you agree or disagree with the following statements? TRUE Apparel is... - an honest brand
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that will not betray you	1,000	,574	,622
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that accomplishes its value promise	,574	1,000	,611
How much do you agree or disagree with the following statements? TRUE Apparel is... - an honest brand	,622	,611	1,000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that will not betray you	11,00	3,381	,667	,447	,758
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that accomplishes its value promise	10,75	3,858	,657	,435	,765
How much do you agree or disagree with the following statements? TRUE Apparel is... - an honest brand	10,81	3,624	,695	,484	,726

Authenticity: Integrity

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,820	,821	4

Item Statistics			
	Mean	Std. Deviation	N
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that gives back to its consumers	5,25	1,067	140
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand with moral principles	5,72	1,004	140
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand true to a set of moral values	5,60	,980	140
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that cares about its consumers	5,60	1,044	140

Inter-Item Correlation Matrix				
	How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that gives back to its consumers	How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand with moral principles	How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand true to a set of moral values	How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that cares about its consumers
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that gives back to its consumers	1,000	,428	,502	,639
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand with moral principles	,428	1,000	,624	,476
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand true to a set of moral values	,502	,624	1,000	,531
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that cares about its consumers	,639	,476	,531	1,000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that gives back to its consumers	16,92	6,375	,630	,448	,780
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand with moral principles	16,45	6,753	,603	,422	,791
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand true to a set of moral values	16,57	6,578	,670	,479	,762
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that cares about its consumers	16,57	6,304	,669	,481	,761

Authenticity: Symbolism

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,824	,826	4

Item Statistics			
	Mean	Std. Deviation	N
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that adds meaning to people's lives	4,94	1,337	140
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that reflects important values people care about	5,62	1,035	140
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that connects people with their real selves	4,73	1,393	140

How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that connects people with what is really important	5,24	1,239	140
--	------	-------	-----

Inter-Item Correlation Matrix				
	How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that adds meaning to people's lives	How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that reflects important values people care about	How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that connects people with their real selves	How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that connects people with what is really important
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that adds meaning to people's lives	1,000	,429	,597	,518
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that reflects important values people care about	,429	1,000	,512	,575
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that connects people with their real selves	,597	,512	1,000	,630
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that connects people with what is really important	,518	,575	,630	1,000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that adds meaning to people's lives	15,59	9,669	,617	,396	,795
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that reflects important values people care about	14,90	11,371	,593	,375	,806
How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that connects people with their real selves	15,79	8,770	,712	,513	,749

How much do you agree or disagree with the following statements? TRUE Apparel is... - a brand that connects people with what is really important	15,29	9,688	,695	,499	,757
--	-------	-------	------	------	------

Authenticity: Continuity

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,838	,842	4

Item Statistics			
	Mean	Std. Deviation	N
How much do you agree or disagree with the following statements? - TRUE Apparel is a brand with a history	4,26	1,432	140
How much do you agree or disagree with the following statements? - TRUE Apparel is a timeless brand	4,75	1,236	140
How much do you agree or disagree with the following statements? - TRUE Apparel is a brand that survives times	4,84	1,209	140
How much do you agree or disagree with the following statements? - TRUE Apparel is a brand that survives trends	4,86	1,232	140

Inter-Item Correlation Matrix				
	How much do you agree or disagree with the following statements? - TRUE Apparel is a brand with a history	How much do you agree or disagree with the following statements? - TRUE Apparel is a timeless brand	How much do you agree or disagree with the following statements? - TRUE Apparel is a brand that survives times	How much do you agree or disagree with the following statements? - TRUE Apparel is a brand that survives trends
How much do you agree or disagree with the following statements? - TRUE Apparel is a brand with a history	1,000	,554	,520	,511
How much do you agree or disagree with the following statements? - TRUE Apparel is a timeless brand	,554	1,000	,690	,543
How much do you agree or disagree with the following statements? - TRUE Apparel is a brand that survives times	,520	,690	1,000	,607

How much do you agree or disagree with the following statements? - TRUE Apparel is a brand that survives trends	,511	,543	,607	1,000
---	------	------	------	-------

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
How much do you agree or disagree with the following statements? - TRUE Apparel is a brand with a history	14,44	10,033	,613	,380	,826
How much do you agree or disagree with the following statements? - TRUE Apparel is a timeless brand	13,96	10,444	,711	,537	,777
How much do you agree or disagree with the following statements? - TRUE Apparel is a brand that survives times	13,87	10,516	,723	,560	,773
How much do you agree or disagree with the following statements? - TRUE Apparel is a brand that survives trends	13,85	10,862	,648	,432	,804

Factor Analysis

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
Auth_Credibility	5,4262	,91096	140
Auth_Integrity	5,5429	,82559	140
Auth_Symbolism	5,1304	1,01803	140
Auth_Continuity	4,6768	1,05022	140

Correlation Matrix					
		Auth_Credibility	Auth_Integrity	Auth_Symbolism	Auth_Continuity
Correlation	Auth_Credibility	1,000	,667	,545	,446
	Auth_Integrity	,667	1,000	,634	,463
	Auth_Symbolism	,545	,634	1,000	,531
	Auth_Continuity	,446	,463	,531	1,000
Sig. (1-tailed)	Auth_Credibility		<,001	<,001	<,001
	Auth_Integrity	,000		,000	,000
	Auth_Symbolism	,000	,000		,000
	Auth_Continuity	,000	,000	,000	

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,779
Bartlett's Test of Sphericity	Approx. Chi-Square	210,535
	df	6
	Sig.	<,001

Item Statistics			
	Mean	Std. Deviation	N
Auth_Credibility	5,4262	,91096	140
Auth_Integrity	5,5429	,82559	140
Auth_Symbolism	5,1304	1,01803	140
Auth_Continuity	4,6768	1,05022	140

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,650	66,250	66,250	2,650	66,250	66,250
2	,612	15,299	81,550			
3	,431	10,765	92,315			
4	,307	7,685	100,000			

Extraction Method: Principal Component Analysis.

Component Matrix ^a	
	Component
	1
Auth_Credibility	,822
Auth_Integrity	,859
Auth_Symbolism	,837
Auth_Continuity	,732

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

Authenticity: Final

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,822	,829	4

Inter-Item Correlation Matrix				
	Auth_Credibility	Auth_Integrity	Auth_Symbolism	Auth_Continuity
Auth_Credibility	1,000	,667	,545	,446
Auth_Integrity	,667	1,000	,634	,463
Auth_Symbolism	,545	,634	1,000	,531
Auth_Continuity	,446	,463	,531	1,000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Auth_Credibility	15,3500	5,824	,652	,481	,774
Auth_Integrity	15,2333	5,970	,711	,553	,754
Auth_Symbolism	15,6458	5,272	,687	,486	,756
Auth_Continuity	16,0994	5,627	,560	,324	,821

Green Skepticism

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,710	,673	4

Item Statistics			
	Mean	Std. Deviation	N
How much do you agree or disagree with the following statements? - I believe most environmental claims made on this package label are true	5,29	1,160	140
How much do you agree or disagree with the following statements? - I think the environmental claims of TRUE Apparel are exaggerated. Consumers would be better off if such claims on package labels or on the website were eliminated.	4,00	1,591	140
How much do you agree or disagree with the following statements? - The environmental claims on these packages and the website are intended to mislead rather than to inform consumers.	3,99	1,675	140
How much do you agree or disagree with the following statements? - I do not believe most environmental claims made on TRUE Apparel's packages and website.	3,80	1,659	140

Inter-Item Correlation Matrix				
	How much do you agree or disagree with the following statements? - I believe most environmental claims made on this package label are true	How much do you agree or disagree with the following statements? - I think the environmental claims of TRUE Apparel are exaggerated. Consumers would be better off if such claims on package labels or on the website were eliminated.	How much do you agree or disagree with the following statements? - The environmental claims on these packages and the website are intended to mislead rather than to inform consumers.	How much do you agree or disagree with the following statements? - I do not believe most environmental claims made on TRUE Apparel's packages and website.
How much do you agree or disagree with the following statements? - I believe most environmental claims made on this package label are true	1,000	,094	,024	,016

How much do you agree or disagree with the following statements? - I think the environmental claims of TRUE Apparel are exaggerated. Consumers would be better off if such claims on package labels or on the website were eliminated.	,094	1,000	,626	,646
How much do you agree or disagree with the following statements? - The environmental claims on these packages and the website are intended to mislead rather than to inform consumers.	,024	,626	1,000	,631
How much do you agree or disagree with the following statements? - I do not believe most environmental claims made on TRUE Apparel's packages and website.	,016	,646	,631	1,000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
How much do you agree or disagree with the following statements? - I believe most environmental claims made on this package label are true	11,79	18,342	,050	,013	,838
How much do you agree or disagree with the following statements? - I think the environmental claims of TRUE Apparel are exaggerated. Consumers would be better off if such claims on package labels or on the website were eliminated.	13,08	10,562	,686	,503	,520
How much do you agree or disagree with the following statements? - The environmental claims on these packages and the website are intended to mislead rather than to inform consumers.	13,09	10,445	,641	,480	,548
How much do you agree or disagree with the following statements? - I do not believe most environmental claims made on TRUE Apparel's packages and website.	13,28	10,461	,650	,503	,542

Green skepticism new

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,838	,839	3

Item Statistics			
	Mean	Std. Deviation	N
How much do you agree or disagree with the following statements? - I think the environmental claims of TRUE Apparel are exaggerated. Consumers would be better off if such claims on package labels or on the website were eliminated.	4,00	1,591	140
How much do you agree or disagree with the following statements? - The environmental claims on these packages and the website are intended to mislead rather than to inform consumers.	3,99	1,675	140
How much do you agree or disagree with the following statements? - I do not believe most environmental claims made on TRUE Apparel's packages and website.	3,80	1,659	140

Inter-Item Correlation Matrix			
	How much do you agree or disagree with the following statements? - I think the environmental claims of TRUE Apparel are exaggerated. Consumers would be better off if such claims on package labels or on the website were eliminated.	How much do you agree or disagree with the following statements? - The environmental claims on these packages and the website are intended to mislead rather than to inform consumers.	How much do you agree or disagree with the following statements? - I do not believe most environmental claims made on TRUE Apparel's packages and website.
How much do you agree or disagree with the following statements? - I think the environmental claims of TRUE Apparel are exaggerated. Consumers would be better off if such claims on package labels or on the website were eliminated.	1,000	,626	,646

How much do you agree or disagree with the following statements? - The environmental claims on these packages and the website are intended to mislead rather than to inform consumers.	,626	1,000	,631
How much do you agree or disagree with the following statements? - I do not believe most environmental claims made on TRUE Apparel's packages and website.	,646	,631	1,000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
How much do you agree or disagree with the following statements? - I think the environmental claims of TRUE Apparel are exaggerated. Consumers would be better off if such claims on package labels or on the website were eliminated.	7,79	9,062	,704	,497	,774
How much do you agree or disagree with the following statements? - The environmental claims on these packages and the website are intended to mislead rather than to inform consumers.	7,80	8,694	,693	,480	,785
How much do you agree or disagree with the following statements? - I do not believe most environmental claims made on TRUE Apparel's packages and website.	7,99	8,676	,708	,502	,770

Green Brand Image

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,864	,864	5

Item Statistics			
	Mean	Std. Deviation	N
How much do you agree or disagree with the following statements? - TRUE Apparel is environmentally stronger committed than its competitors	5,01	1,150	140
How much do you agree or disagree with the following statements? - TRUE Apparel is professional about its' environmental reputation	5,33	1,134	140
How much do you agree or disagree with the following statements? - TRUE Apparel has a successful sustainable performance	5,00	1,175	140
How much do you agree or disagree with the following statements? - TRUE Apparel is dedicated to environmental concerns	5,41	1,025	140
How much do you agree or disagree with the following statements? - TRUE Apparel's environmental promises are trustworthy	5,22	1,113	140

Inter-Item Correlation Matrix					
	How much do you agree or disagree with the following statements? - TRUE Apparel is environmentally stronger committed than its competitors	How much do you agree or disagree with the following statements? - TRUE Apparel is professional about its' environmental reputation	How much do you agree or disagree with the following statements? - TRUE Apparel has a successful sustainable performance	How much do you agree or disagree with the following statements? - TRUE Apparel is dedicated to environmental concerns	How much do you agree or disagree with the following statements? - TRUE Apparel's environmental promises are trustworthy
How much do you agree or disagree with the following statements? - TRUE Apparel is environmentally stronger committed than its competitors	1,000	,537	,676	,398	,520
How much do you agree or disagree with the following statements? - TRUE Apparel is professional about its' environmental reputation	,537	1,000	,577	,519	,557

How much do you agree or disagree with the following statements? - TRUE Apparel has a successful sustainable performance	,676	,577	1,000	,633	,611
How much do you agree or disagree with the following statements? - TRUE Apparel is dedicated to environmental concerns	,398	,519	,633	1,000	,562
How much do you agree or disagree with the following statements? - TRUE Apparel's environmental promises are trustworthy	,520	,557	,611	,562	1,000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
How much do you agree or disagree with the following statements? - TRUE Apparel is environmentally stronger committed than its competitors	20,96	13,517	,650	,507	,844
How much do you agree or disagree with the following statements? - TRUE Apparel is professional about its' environmental reputation	20,65	13,495	,667	,446	,840
How much do you agree or disagree with the following statements? - TRUE Apparel has a successful sustainable performance	20,98	12,467	,782	,639	,809
How much do you agree or disagree with the following statements? - TRUE Apparel is dedicated to environmental concerns	20,56	14,334	,638	,478	,847
How much do you agree or disagree with the following statements? - TRUE Apparel's environmental promises are trustworthy	20,76	13,480	,688	,477	,835

Green Brand Trust

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,894	,895	5

Item Statistics			
	Mean	Std. Deviation	N
How much do you agree or disagree with the following statements about TRUE Apparel? - You feel that this brand's environmental commitments are reliable	5,20	1,081	140
How much do you agree or disagree with the following statements about TRUE Apparel? - You feel that this brand's environmental performance is generally dependable	4,95	1,095	140
How much do you agree or disagree with the following statements about TRUE Apparel? - This brands' environmental argument is generally trustworthy	5,18	1,108	140
How much do you agree or disagree with the following statements about TRUE Apparel? - This brands' environmental concerns meet your expectations	5,05	1,183	140
How much do you agree or disagree with the following statements about TRUE Apparel? - This brand keeps promises and commitments for environmental protection	5,13	1,193	140

Inter-Item Correlation Matrix					
	How much do you agree or disagree with the following statements about TRUE Apparel? - You feel that this brand's environmental commitments are reliable	How much do you agree or disagree with the following statements about TRUE Apparel? - You feel that this brand's environmental performance is generally dependable	How much do you agree or disagree with the following statements about TRUE Apparel? - This brands' environmental argument is generally trustworthy	How much do you agree or disagree with the following statements about TRUE Apparel? - This brands' environmental concerns meet your expectations	How much do you agree or disagree with the following statements about TRUE Apparel? - This brand keeps promises and commitments for environmental protection
How much do you agree or disagree with the following statements about TRUE Apparel? - You feel that this brand's environmental commitments are reliable	1,000	,635	,697	,667	,650

How much do you agree or disagree with the following statements about TRUE Apparel? - You feel that this brand's environmental performance is generally dependable	,635	1,000	,630	,574	,506
How much do you agree or disagree with the following statements about TRUE Apparel? - This brands' environmental argument is generally trustworthy	,697	,630	1,000	,602	,669
How much do you agree or disagree with the following statements about TRUE Apparel? - This brands' environmental concerns meet your expectations	,667	,574	,602	1,000	,668
How much do you agree or disagree with the following statements about TRUE Apparel? - This brand keeps promises and commitments for environmental protection	,650	,506	,669	,668	1,000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
How much do you agree or disagree with the following statements about TRUE Apparel? - You feel that this brand's environmental commitments are reliable	20,31	14,819	,787	,623	,861
How much do you agree or disagree with the following statements about TRUE Apparel? - You feel that this brand's environmental performance is generally dependable	20,56	15,500	,677	,492	,885
How much do you agree or disagree with the following statements about TRUE Apparel? - This brands' environmental argument is generally trustworthy	20,33	14,769	,769	,608	,865
How much do you agree or disagree with the following statements about TRUE Apparel? - This brands' environmental concerns meet your expectations	20,46	14,480	,739	,563	,871

How much do you agree or disagree with the following statements about TRUE Apparel? - This brand keeps promises and commitments for environmental protection	20,38	14,467	,733	,574	,873
--	-------	--------	------	------	------

Appendix 2.3: Comparison of Groups

Authenticity Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Control Group	68	5,2659	,68749	,08337	5,0995	5,4323	3,83	6,60
Experimental Group	72	5,1262	,84228	,09926	4,9282	5,3241	2,90	7,00
Total	140	5,1940	,77143	,06520	5,0651	5,3230	2,90	7,00

Tests of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Authenticity	Based on Mean	1,184	1	138	,278
	Based on Median	1,197	1	138	,276
	Based on Median and with adjusted df	1,197	1	127,715	,276
	Based on trimmed mean	1,186	1	138	,278

ANOVA					
Authenticity					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,683	1	,683	1,149	,286
Within Groups	82,036	138	,594		
Total	82,720	139			

Green Skepticism

Deskriptiv Statistik								
Green Skepticism								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Control Group	68	3,8137	1,43330	,17381	3,4668	4,1607	1,33	7,00
Experimental Group	72	4,0370	1,42365	,16778	3,7025	4,3716	1,00	7,00
Total	140	3,9286	1,42759	,12065	3,6900	4,1671	1,00	7,00

Tests of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Green_Skepticism	Based on Mean	,023	1	138	,879
	Based on Median	,003	1	138	,955
	Based on Median and with adjusted df	,003	1	137,949	,955
	Based on trimmed mean	,013	1	138	,909

ANOVA					
Green Skepticism					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,744	1	1,744	,855	,357

Within Groups	281,542	138	2,040		
Total	283,286	139			

Green Brand Image

Deskriptive Statistik								
Brand Image								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Control Group	68	5,3088	,69061	,08375	5,1417	5,4760	3,80	6,80
Experimental Group	72	5,0889	1,05771	,12465	4,8403	5,3374	2,00	7,00
Gesamt	140	5,1957	,90195	,07623	5,0450	5,3464	2,00	7,00

Tests of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Brand_Image	Based on Mean	10,519	1	138	,001
	Based on Median	7,716	1	138	,006
	Based on Median and with adjusted df	7,716	1	111,875	,006
	Based on trimmed mean	10,172	1	138	,002

ANOVA					
Brand Image					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,692	1	1,692	2,096	,150
Within Groups	111,386	138	,807		
Total	113,077	139			

Green Brand Trust

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Control Group	68	5,3000	,78455	,09514	5,1101	5,4899	3,00	6,80
Experimental Group	72	4,9139	1,05394	,12421	4,6662	5,1616	2,00	7,00
Total	140	5,1014	,94952	,08025	4,9428	5,2601	2,00	7,00

Tests of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Brand_Trust	Based on Mean	3,390	1	138	,068
	Based on Median	3,023	1	138	,084
	Based on Median and with adjusted df	3,023	1	123,193	,085
	Based on trimmed mean	3,273	1	138	,073

ANOVA					
Brand_Trust					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5,214	1	5,214	5,990	,016
Within Groups	120,106	138	,870		
Total	125,320	139			

Appendix 2.4: Mediation

Mediator: Authenticity

Model : 4
 Y : Brand_Im
 X : GR
 M : Authenti

Sample
 Size: 140

OUTCOME VARIABLE:

Authenti

Model Summary

R	R-sq	MSE	F (HC3)	df1	df2	p
,0909	,0083	,5945	1,1461	1,0000	138,0000	,2862

Model

	coeff	se (HC3)	t	p	LLCI	ULCI
constant	5,4057	,1955	27,6547	,0000	5,0192	5,7922
GR	-,1398	,1306	-1,0706	,2862	-,3979	,1184

Standardized coefficients

	coeff
GR	-,1812

OUTCOME VARIABLE:

Brand_Im

Model Summary

R	R-sq	MSE	F (HC3)	df1	df2	p
,6779	,4596	,4461	41,7281	2,0000	137,0000	,0000

Model

	coeff	se (HC3)	t	p	LLCI	ULCI
constant	1,2970	,4764	2,7226	,0073	,3550	2,2390
GR	-,1105	,1125	-,9821	,3278	-,3330	,1120
Authenti	,7828	,0861	9,0958	,0000	,6126	,9530

Standardized coefficients

	coeff
GR	-,1225
Authenti	,6696

***** TOTAL EFFECT MODEL *****

OUTCOME VARIABLE:

Brand_Im

Model Summary

R	R-sq	MSE	F (HC3)	df1	df2	p
,1223	,0150	,8071	2,1145	1,0000	138,0000	,1482

Model

	coeff	se (HC3)	t	p	LLCI	ULCI
constant	5,5288	,2103	26,2885	,0000	5,1129	5,9446
GR	-,2199	,1512	-1,4541	,1482	-,5190	,0791

Standardized coefficients

	coeff
GR	-,2438

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y
 Effect se(HC3) t p LLCI ULCI c'_ps
 -,2199 ,1512 -1,4541 ,1482 -,5190 ,0791 -,2438

Direct effect of X on Y
 Effect se(HC3) t p LLCI ULCI c'_ps
 -,1105 ,1125 -,9821 ,3278 -,3330 ,1120 -,1225

Indirect effect(s) of X on Y:
 Effect BootSE BootLLCI BootULCI
 Authent -,1094 ,1037 -,3206 ,0862

Partially standardized indirect effect(s) of X on Y:
 Effect BootSE BootLLCI BootULCI
 Authent -,1213 ,1128 -,3409 ,0995

Mediator: Green Skepticism

Model : 4
 Y : Brand_Im
 X : GR
 M : Green_Sc

Sample
 Size: 140

OUTCOME VARIABLE:
 Green_Sc

Model Summary
 R R-sq MSE F(HC3) df1 df2 p
 ,0785 ,0062 2,0402 ,8423 1,0000 138,0000 ,3604

Model
 coeff se(HC3) t p LLCI ULCI
 constant 3,5904 ,3888 9,2338 ,0000 2,8216 4,3593
 GR ,2233 ,2433 ,9177 ,3604 -,2578 ,7044

Standardized coefficients
 coeff
 GR ,1564

OUTCOME VARIABLE:
 Brand_Im

Model Summary
 R R-sq MSE F(HC3) df1 df2 p
 ,1855 ,0344 ,7970 2,2248 2,0000 137,0000 ,1120

Model
 coeff se(HC3) t p LLCI ULCI
 constant 5,2115 ,3081 16,9165 ,0000 4,6023 5,8207
 GR -,2397 ,1508 -1,5889 ,1144 -,5379 ,0586
 Green_Sc ,0884 ,0616 1,4335 ,1540 -,0335 ,2102

Standardized coefficients
 coeff
 GR -,2657
 Green_Sc ,1398

```

***** TOTAL EFFECT MODEL *****
OUTCOME VARIABLE:
  Brand_Im

Model Summary
      R      R-sq      MSE      F (HC3)      df1      df2      p
,1223    ,0150    ,8071    2,1145    1,0000    138,0000    ,1482

Model
      coeff      se (HC3)      t      p      LLCI      ULCI
constant    5,5288    ,2103    26,2885    ,0000    5,1129    5,9446
GR          -,2199    ,1512    -1,4541    ,1482    -,5190    ,0791

Standardized coefficients
      coeff
GR    -,2438

```

```

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y
      Effect      se (HC3)      t      p      LLCI      ULCI      c_ps
-,2199    ,1512    -1,4541    ,1482    -,5190    ,0791    -,2438

Direct effect of X on Y
      Effect      se (HC3)      t      p      LLCI      ULCI      c'_ps
-,2397    ,1508    -1,5889    ,1144    -,5379    ,0586    -,2657

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
Green_Sc    ,0197    ,0292    -,0268    ,0927

Partially standardized indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
Green_Sc    ,0219    ,0333    -,0307    ,1056

```

Mediator: Green Brand Trust

```

Model : 4
      Y : Brand_Im
      X : GR
      M : Brand_Tr

```

Sample Size: 140

```

*****
OUTCOME VARIABLE:
  Brand_Tr

Model Summary
      R      R-sq      MSE      F (HC3)      df1      df2      p
,2040    ,0416    ,8703    6,0037    1,0000    138,0000    ,0155

Model
      coeff      se (HC3)      t      p      LLCI      ULCI
constant    5,6861    ,2289    24,8417    ,0000    5,2335    6,1387
GR          -,3861    ,1576    -2,4502    ,0155    -,6977    -,0745

Standardized coefficients
      coeff
GR    -,4066

```

```

*****
OUTCOME VARIABLE:
  Brand_Im

```

Model Summary

	R	R-sq	MSE	F (HC3)	df1	df2	p
	,8010	,6416	,2958	122,7093	2,0000	137,0000	,0000

Model

	coeff	se (HC3)	t	p	LLCI	ULCI
constant	1,1614	,2979	3,8990	,0002	,5724	1,7504
GR	,0766	,0920	,8326	,4065	-,1054	,2586
Brand_Tr	,7681	,0491	15,6568	,0000	,6711	,8651

Standardized coefficients

	coeff
GR	,0850
Brand_Tr	,8086

***** TOTAL EFFECT MODEL *****

OUTCOME VARIABLE:

Brand_Im

Model Summary

	R	R-sq	MSE	F (HC3)	df1	df2	p
	,1223	,0150	,8071	2,1145	1,0000	138,0000	,1482

Model

	coeff	se (HC3)	t	p	LLCI	ULCI
constant	5,5288	,2103	26,2885	,0000	5,1129	5,9446
GR	-,2199	,1512	-1,4541	,1482	-,5190	,0791

Standardized coefficients

	coeff
GR	-,2438

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y

Effect	se (HC3)	t	p	LLCI	ULCI	c_ps
-,2199	,1512	-1,4541	,1482	-,5190	,0791	-,2438

Direct effect of X on Y

Effect	se (HC3)	t	p	LLCI	ULCI	c'_ps
,0766	,0920	,8326	,4065	-,1054	,2586	,0850

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Brand_Tr	-,2966	,1257	-,5528	-,0553

Partially standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Brand_Tr	-,3288	,1317	-,5833	-,0642

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

NOTE: Standardized coefficients for dichotomous or multicategorical X are in partially standardized form.

NOTE: A heteroscedasticity consistent standard error and covariance matrix estimator was used.

Appendix 2.5: Demographics

Nationality					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Afghanistan	2	1,4	1,4	1,4
	Albania	2	1,4	1,4	2,9
	Algeria	1	,7	,7	3,6
	Andorra	1	,7	,7	4,3
	Angola	1	,7	,7	5,0
	Australia	1	,7	,7	5,7
	Belarus	1	,7	,7	6,4
	Brazil	2	1,4	1,4	7,9
	Canada	4	2,9	2,9	10,7
	Costa Rica	1	,7	,7	11,4
	Estonia	1	,7	,7	12,1
	France	1	,7	,7	12,9
	Georgia	1	,7	,7	13,6
	Germany	93	66,4	66,4	80,0
	Hungary	1	,7	,7	80,7
	Italy	2	1,4	1,4	82,1
	Portugal	6	4,3	4,3	86,4
	Spain	2	1,4	1,4	87,9
	Ukraine	1	,7	,7	88,6
	United Kingdom of Great Britain and Northern Ireland	2	1,4	1,4	90,0
United States of America	14	10,0	10,0	100,0	
Total	140	100,0	100,0		

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	62	44,3	44,3	44,3
	Male	78	55,7	55,7	100,0
	Total	140	100,0	100,0	

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<18	1	,7	,7	,7
	18-25	57	40,7	40,7	41,4
	26-35	74	52,9	52,9	94,3
	36-45	2	1,4	1,4	95,7

	46-55	4	2,9	2,9	98,6
	56-65	2	1,4	1,4	100,0
	Total	140	100,0	100,0	

Profession					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	46	32,9	32,9	32,9
	Employee	71	50,7	50,7	83,6
	Self-employed	17	12,1	12,1	95,7
	Unemployed	3	2,1	2,1	97,9
	Other	2	1,4	1,4	99,3
	I prefer not to say	1	,7	,7	100,0
	Total	140	100,0	100,0	

Bibliography

- Agariya, A. K., Johari, A., Sharma, H. K., Chandraul, U. N., & Singh, D. (2012). The Role of Packaging in Brand Communication. *International Journal of Scientific & Engineering Research* 3 (2), 01-13.
- Alhaddad, A. (2015). Perceived Quality, Brand Image and Brand Trust as Determinants of Brand Loyalty. *Journal of Research in Business and Management* 3 (4), 01-08.
- Alhamdi, F. (2020). Role of packaging in consumer buying behavior. *Management Science Letters* 10(6), pp. 1191-1196.
- Alves, H., & Mainardes, E. W. (2017). Self-efficacy, trust, and perceived benefits in the co-creation of value by consumers. *International Journal of Retail & Distribution Management*.
- Arnold, D. (2017). Fostering sustainability by linking co-creation and relationship management concepts. *Journal of Cleaner Production* 40(1), pp. 179-188.
- Beverland, M. (2005). Brand management and the challenge of authenticity. *Journal of Product & Brand Management*.
- Borges, M., Afuah, A., & Bastian, B. (2010). Users as innovators: A Review, Critique, and Future research Directions. *Journal of Management* 36 (4), 857-875.
- Boz, Z., Korhonen, V., & Sand, C. (2020). Consumer Considerations for the Implementation of Sustainable Packaging: A Review. *Sustainability*, 12, p. 2192.
- Brown, B. J., Hanson, M. E., Liverman, D. M., & Robert W. Merideth, J. (1987). Global Sustainability: Toward Definition. *Environmental Management* 11 (6), 713-719.
- Bruhn, M., Schoenmüller, V., Schäfer, D., & Heinrich, D. (2012). Brand authenticity: Towards a deeper understanding of its conceptualization and measurement. *Advances in consumer research* 40.
- Brundland, G. H. (1987). *World commission on environment and development. Our common future oxford*. London: Oxford University Press.
- Cambridge Dictionary . (2022, April 08). Retrieved from <https://dictionary.cambridge.org/de/worterbuch/englisch/sustainability>
- Cambridge Dictionary . (2022, April 11). Retrieved from <https://dictionary.cambridge.org/de/worterbuch/englisch/scepticism>
- Cambridge Dictionary . (2022, April 12). Retrieved from <https://dictionary.cambridge.org/de/worterbuch/englisch/authenticity>
- Chang, W., & Taylor, S. A. (2016). The effectiveness of customer participation in new product development: A meta-analysis. American Marketing Association. *Journal of Marketing*. 80(1), pp. 47-64.

- Chen. (2010). The Drivers of Green Brand Equity: Green Brand Image, Green Satisfaction, and Green Trust (93). *Journal of Business Ethics*, 307–319.
- Chen, Y. S., Huang, A. F., Wang, T. Y., & Chen, Y. R. (2020). Greenwash and green purchase behaviour: the mediation of green brand image and green brand loyalty. *Total Quality Management & Business Excellence* 31(1-2), 194-209.
- Chen, Y. S., Tien, W. P., Lee, Y. I., & Tsai, M. L. (2016). Greenwash and green brand equity. *2016 Portland International Conference on Management of Engineering and Technology (PICMET)* (pp. 1797-1803). IEEE.
- Chesbrough, H., & Schwartz, K. (2007). Innovating business models with co-development partnerships. *Research-Technology Management* 50(1), 55-59.
- Cretu, A. E., & Brodie, R. J. (2007). The influence of brand image and company reputation where manufacturers market to small firms: A customer value perspective. *Industrial marketing management*, 36(2), 230-240.
- Cui, A. S. (2016). Utilizing customer knowledge in innovation: antecedents and impact of customer involvement on new product performance. *ournal of the academy of marketing science*, 44(4), 516-538.
- Dahl, D. W., Fuchs, C., & Schreier, M. (2014). Why and when consumers prefer products of user-driven firms: A social identification account. *Management science* 61(8).
- Deheshti, M., Adabi Firouzjah, J., & Alimohammadi, H. (2016). The relationship between brand image and brand trust in sporting goods consumers. *Annals of Applied Sport Science* 4(3), 27-34.
- Delgado, E., Munuera, J., & Yagüe, M. (2003). Development and validation of a brand trust scale. *International Journal of Market Research*, Vol. 45 No. 1, 35-54.
- Delgado-Ballester, E., & Munuera-Alemán, J. L. (2005). Does brand trust matter to brand equity? *Journal of product & brand management*.
- Delmas, M., & Burbano, V. (2011). The drivers of greenwashing. *Calif Manag Rev* 54(1), 64–87.
- Dijk, J., Antonides, G., & Schillewaert, N. (2014). Effects of co-creation claim on consumer brand perceptions and behavioural intentions. *International Journal of Consumer Studies* 38(1), pp. 110-118.
- Draskovic, N. (2007). The marketing role of packaging: a review. *International Journal of Management Cases* 9(3-4), 315-323.
- Driesener, C., & Romaniuk, J. (2006). Comparing methods of brand image measurement. *International Journal of Market Research* 48(6), 681-698.
- Dwivedi, A., & McDonald, R. (2018). uilding brand authenticity in fast-moving consumer goods via consumer perceptions of brand marketing communications. *European Journal of Marketing*.
- Farooq, Y., & Hendro, W. (2021). Advancing on the analysis of causes and consequences of green skepticism 320. 128927.

- Filieri, R. (2013). Consumer co-creation and new product development: a case study in the food industry. *Marketing Intelligence & Planning* 31(1), pp. 40-53.
- Fuchs, C., & Schreier, M. (2011). Customer empowerment in new product development. *Journal of product innovation management* 28(1), 17-32.
- Fuchs, C., Prandelli, E., Schreier, M., & Dahl, D. W. (2013). All that is Users Might not be Gold: How Labeling Products as User-designed Backfires in the Context of Luxury Fashion Brands. *Journal of Marketing*.
- Goh, S. K., & Balaji, M. S. (2016). Linking green skepticism to green purchase behavior. *Journal of Cleaner Production* 131, 629-638.
- Gómez, M., Martín-Consuegra, D., & Molina, A. (2015). The importance of packaging in purchase and usage behaviour. *International journal of Consumer studies* 39(3), 203-211.
- Górska-Warsewicz, H., Dębski, M., Fabuš, M., & Kováč, M. (2021). Green Brand Equity— Empirical Experience from a Systematic Literature Review. *Sustainability* 13, 11130.
- Hayes, A. F. (2013). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. . *Guilford Press*.
- Hotten, R. (2015, December 10). *Volkswagen: The scandal explained*. Retrieved from BBC News: <https://www.bbc.com/news/business-34324772>
- Hubert, M., Florack, A., & Gattringer, R. (2017). Flag up! – Flagship products as important drivers of perceived brand innovativeness. *Journal of Business Research* 71, 154-163.
- Jenama, K., & Empirikal, K. (2017). The influence of brand image and brand personality on brand loyalty, mediating by brand trust: An empirical study. *Jurnal pengurusan* 50, 71-82.
- Kaner, G. (2021). Greenwashing: How Difficult It Is to Be Transparent to the Consumer. In C. Mukonza, R. Hinson, O. Adeola, I. Adisa, E. Mogaji, & A. Kirgiz, *Green Marketing in Emerging Markets - Strategic and Operational Perspectives*. *Palgrave Studies of Marketing in Emerging Economies* (pp. 203-226). Palgrave Macmillan.
- Karimi, P., Mahdie, O., & Rahmani, M. (2013). The Study of Relationship between Packaging Elements and Purchase Behavior: Consumers of Food, Cosmetics and Health Products. *Interdisciplinary Journal of Contemporary Research in Buisness* 5(3), pp. 281-295.
- Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of marketing* 57(1), 1-22.
- Kotler, P., & Keller, K. L. (2006). *Marketing management*. New Jersey: 12e.
- Kull, A. J., & Heath, T. B. (2016). You decide, we donate: Strengthening consumer–brand relationships through digitally co-created social responsibility. *International Journal of Research in Marketing* 33(1), pp. 78-92.
- Lanthorn, K. R. (2013). It's all About the Green: the Economically Driven Greenwashing Practices of Coca-Cola. *Augsburg Honors Review: 6* (13).

- Laursen, K., & Salter, A. (2006). Open for Innovation: The Role of Openness in Explaining Innovation Performance among UK Manufacturing Firms. *Strategic Management Journal* 27(2), pp. 131-150.
- Lee, B., & Kang, J. (2016). The Power of Peripheral Innovation: A Case Study of AmorePacific's Cushion Foundation. *Research-Technology Management* 59(4), 21-29.
- Leonidou, C., & Skarmas, D. (2017). Gray Shades of Green: Causes and Consequences of Green Skepticism. *Journal of Business Ethics* 144, 401-415.
- Lewis, H., Fitzpatrick, L., Verghese, K., Sonneveld, K., & Jordon, R. (2007). Sustainable Packaging Redefined. *Sustainable Packaging Alliance*, 26.
- Lightfoot, C., & Gerstman, R. (1998). Brand Packaging. In H. S., & M. J. (eds), *Brands* (pp. 46-55). London: Palgrave Macmillan.
- Liljedal, K. T., & Dahlén, M. (2015). Consumers' response to other consumers' participation in new product development. *Journal of Marketing Communications*, pp. 1-13.
- Mahr, D., Lievens, A., & Blazevic, V. (2014). The value of customer cocreated knowledge during the innovation process. *Journal of Production Innovation Management* 31(3), 599-615.
- Malthora, N., Nunan, D., & Birks, D. (2017). *Marketing Research: An Applied Approach 5th Edition*. Harlow: Pearson Education Limited.
- Mathobela, T. (2010). Strategies for implementing sustainability: Five leadership challenges. *SAM Advanced Management Journal* 15.
- McDonagh, P., & Prothero, A. (2014). Sustainability marketing research: Past, present and future 30(11-12). *Journal of Marketing Management*, 1186-1219.
- Mohr, L. A., Eroğlu, D., & Ellen, P. S. (1998). The development and testing of a measure of skepticism toward environmental claims in marketers' communications. *Journal of consumer affairs* 32(1), 30-55.
- Moons, I., Daems, K., & Van de Velde, L. L. (2021). Co-Creation as the Solution to Sustainability Challenges in the Greenhouse Horticultural Industry: The Importance of a Structured Innovation Management Process. *Sustainability* 13, p. 7149.
- More, P. V. (2019). The Impact of Greenwashing on Green Brand Trust from an Indian Perspective. *Asian Journal of Innovation and Policy* 8(1), 162-179.
- Morhart, F., Malär, L., Guèvremont, A., Girardin, F., & Grohmann, B. (2015). Brand authenticity: An integrative framework and measurement scale. *Journal of consumer psychology* 25(2), 200-218.
- Mourad, M., & Ahmed, Y. S. (2012). Perception of green brand in an emerging innovative market. *European Journal of Innovation Management*.
- Mudzakkir, M., & Nurfarida, I. (2015, October 7). *The influence of brand awareness on brand trust through brand image*. Retrieved from SSRN: <https://ssrn.com/abstract=2670597>

- Napoli, J., Dickinson, S. J., Beverland, M. B., & Farrelly, F. (2014). Measuring consumer-based brand authenticity. *Journal of business research* 67(6), 1090-1098.
- Nielsen. (2015). *The Sustainability Imperative - New Insights on Consumer Expectations*.
- Nishikawa, H., Schreier, M., Fuchs, C., & Ogawa, S. (2017). The value of marketing crowdsourced new products as such: Evidence from two randomized field experiments. . *Journal of Marketing Research*.
- Paparoidamis, N., Tran, T., Leonidou, L., & Zeriti, A. (2019). Being Innovative While Being Green: An Experimental Inquiry into How Consumers Respond to Eco-Innovative Product Designs. *Journal of Product Innovation Management* 36 (6), pp. 824-847.
- Peattie, K., & Charter, M. (1992). Green marketing. In *The Marketing Book* (p. 726).
- Piller, F. T. (2010). Open innovation with customers: crowdsourcing and co-creation at Threadless. *Available at SSRN 1688018*.
- Procter & Gamble. (2018). *P&G connect and develop*. Retrieved from <https://www.pgconnectdevelop.com/>
- Ramaswamy, C., & Venkat, P. a. (2004). Co-creating unique value with customers. *Strategy & Leadership* 32(3), 4-9.
- Randall, W. S., Gravier, M. J., & Prybutok, V. R. (2011). Connection, trust, and commitment: dimensions of co-creation? *Journal of strategic marketing* 19(01), 3-24.
- Raska, D., & Shaw, D. (2012). When is going green good for company image? *Management Research Review*.
- Roth, S., & Robbert, T. (2013). Consumer sustainability orientation—development of a measurement instrument. *Proceedings of the 42nd EMAC Conference 2013*.
- Rubio, N., Villaseñor, N., & Yagüe, M. (2020). Sustainable Co-Creation Behavior in a Virtual Community: Antecedents and Moderating Effect of Participant's Perception of Own Expertise. *Sustainability* 12, 8151.
- Rundh, B. (2013). Linking packaging to marketing: how packaging is influencing the marketing strategy. *British Food Journal*.
- Shrivastava, P. (2016). Effect of co-creation on customer experience, trust and brand loyalty. *International Journal of Sales & Marketing Management Research and Development*. *International Journal of Retail & Distribution* 6(6), 1-14.
- Shulga, L. V., Busser, J. A., Bai, B., & Kim, H. (2021). Branding Co-Creation with Consumer-Generated Advertising: Effect on Creators and Observers. *Journal of Advertising*, 1-19.
- Simãoab, L., & Lisboaac, A. (2017). Green Marketing and Green Brand – The Toyota Case. *Procedia Manufacturing* 12, 183-194.
- Skard, S., Jørgensen, S., & Pedersen, L. (2021). When is Sustainability a Liability, and When Is It an Asset? Quality Inferences for Core and Peripheral Attributes. *J Bus Ethics* 173, 109–132.

- Sundar, A., & Kellaris, J. (2017). How Logo Colors Influence Shoppers' Judgments of Retailer Ethicality: The Mediating Role of Perceived Eco-Friendliness. *Journal Bus Ethics* 146, 685–701.
- Sustainable Packaging Coalition. (2011, August). *Definition of Sustainable Packaging*. Retrieved from <https://sustainablepackaging.org/wp-content/uploads/2017/09/Definition-of-Sustainable-Packaging.pdf>
- Szabo, S., & Webster, J. (2021). Perceived greenwashing: the effects of green marketing on environmental and product perceptions. *Journal of Business Ethics* 171(4), 719-739.
- West, J., & Borges, M. (2014). Leveraging External Sources of Innovation: A Review of Research on Open Innovation. *Journal of Product Innovation Management* 31(4), pp. 814-831.
- Wicker, A. (2020, April 16). The flawed ways brands talk about sustainability. *VOGUE Business*, pp. <https://www.voguebusiness.com/sustainability/the-flawed-ways-brands-talk-about-sustainability-coronavirus>.
- Zhang, L., Li, D., Cao, C., & Huang, S. (2018). The influence of greenwashing perception on green purchasing intentions: the mediating role of green word-of-mouth and moderating role of green concern. *J Clean Prod* 187, 740–750.