Green Talk:
The Effect of Environmental CSR Communication on the Purchase Intention of Green Products.

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Abstract

Increasing amounts of material consumption and resource use is leading to high levels of environmental damage. Green products are a part of the solution, however the adoption of these products is still too low. Organizations increasingly communicate corporate social responsibility via social media and aim to show their contributions to society and to differentiate their products as social or environmentally sustainable. This paper investigates if environmental CSR communication influences the intention to buy green products by consumers. The aims of this paper are as follows; (1)To help build consensus on the debate of the effectiveness of CSR communication strategies, by looking into a specific dimension of CSR, namely environmental CSR, and its effect on the purchase intention of green products, and (2)To find evidence/relationships that could help improve the consumption levels and adoption of green products, by looking at the influence of digital environmental CSR communication on the purchase intention of green products. The findings indicate that the communication of environmental CSR via social media negatively influences the purchase intention of green products. The communication itself does result in a higher perceived environmental concern, which on its own positively influences the purchase intention. Hence, digital environmental CSR communication can lead to an improved corporate image, which positively influences the purchase intention of green products. However, in the context of this study, its direct effect on the purchase intention of green products is negative.

Keywords
Sustainability, CSR Communication, Digital Marketing, Social Media Marketing, Purchase Intention of Green Products, Perceived Environmental Concern, Environmental Concern, Brand Credibility

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Date: 20-08-2021

Table of Contents

Introduction

Through globalization and rapid technological developments there is an ever growing consumption globally. While globalization and technological developments offer a lot of advantages, it also requires increasing amounts of resources (Hirschnitz-Garbers et al., 2016), due to the increasing amounts of material consumption (Mont et al., 2014). Resource use is intimately related with emission and waste generation (Hirschnitz-Garbers et al., 2016), and therefore, increasing natural resource use will lead to a bigger impact on our planet's environment and subsequently our well-being (Bringezu et al., 2017).

As the consumption levels are increasing globally, the throughput of energy and resources continues to grow (Mathai et al., 2020), despite technological innovations and efficiency improvements. Improving resource efficiency, i.e. resource productivity, cannot by itself achieve sustainable development, due to the occurrence of the backfire problem or 'Jevons Paradox' (Alcott, 2008), or also called rebound effects (Murray, 2012). In order to achieve sustainable development, improving resource efficiency should be complemented by striving for ecological consistency as well as sufficiency (Hirschnitz-Garbers et al., 2016; Ahlström et al., 2020). This can be achieved by reducing the consumption rate of exhaustible resources through: (1) substituting non-renewable resources for renewable resources, (2) increasing material and energy efficiency and (3) recycling (WCED, 1987).

Green products play a big role in reducing the consumption rate of exhaustible resources. In their total life-cycle, from production to post-use phases, green products have a lower environmental impact (Sheth et al., 2011). However, the level of consumption of green products is still too small to have a significant impact (Sheth et al., 2011).

Important reasons for the low success of green marketing and subsequently the adoption of green products are related to product characteristics (such as price and quality), but mainly reside in ineffective marketing and consumer distrust (also known as green skepticism) in green marketing activities (Sheth et al., 2011).

By providing information on environmental activities, green/sustainable products and their significance, firms spread awareness and reduce consumer distrust towards their green products and their

organizations (Pant et al., 2020; Terlau and Hirsch, 2015; Kang and park, 2018). Spreading awareness on the significance of green products, but also the constituents of their products (i.e. what makes them green/sustainable) is necessary to help consumers observe the additional benefits that these products offer, since consumers can't directly observe these benefits (Jäger and Weber, 2020). Therefore, organizations and especially their marketing departments, play a key role in promoting the consumption of green products.

Companies are increasingly investing large sums in implementing communication strategies as a part of marketing (Medina et al., 2021). Digital environments, and especially social media, are increasingly used for corporate communication (Hayes and Carr, 2021). A part of this communication strategy is the communication of Corporate Social Responsibility (CSR), which has been heavily invested in (Hutton et al., 2001). Through the communication of corporate social responsibility, companies aim to present themselves as ethical and responsible, and differentiate their products as social or environmental sustainable (Orazi and Chan, 2020).

However, contradictory findings in academic research lead to no consensus on the effectiveness of CSR communication strategies (Medina et al., 2021). Sarkar and Searcy (2016) argue that this is because there is no universally accepted definition of CSR. Since CSR activity is not one 'all-inclusive' activity (Godfrey and Hatch, 2006), Medina et al. (2021) argue that future research should focus on different CSR initiatives.

This paper focuses on one aspect of CSR, namely environmental CSR, and tries to answer the question if digital communication of environmental CSR by organizations influences consumers' intention to buy green products. By answering that question, the aims of this paper are; (1) to help build consensus on the debate of the effectiveness of CSR communication, and (2) to find evidence/relationships that could help improve the consumption levels and adoption of green products.

The paper is structured as follows, first a brief introduction is given into the background of the themes, describing the paper's relevance. Followed by a systematic literature review that aims to provide a general overview of social media marketing and how social media can be used for CSR communication. Next, in the Theoretical Development, the conceptual framework, its variables and their relationships,

and subsequently the hypotheses are described, in combination with the methods and procedure of the experiment and the survey. The paper concludes with the results of the survey, then its discussion, limitations and suggestions for future research.

In this way, it tries to combine digital marketing with sustainability, and to aid in the knowledge generation in this field, since literature that combines digital marketing with sustainability is scarce (Diez-Martin et al., 2019). Furthermore, the paper has several touchpoints with research priorities as formulated by the Marketing Science Institute (MSI) for the period 2020-2022, relating to communication messages (of CSR and sustainability) and the usage of (digital) marketing in creating sustainable and society-relevant marketing strategies.

Background

This section provides a brief introduction into the background of the themes that are used, and describes the paper's relevance. Starting with the need for sustainable development and subsequently green consumption, followed by CSR and its communication strategies, and concluding with digital marketing and social media.

Need for Sustainable Development

Since global consumption is ever increasing, resource use and subsequently waste and emission generation are increasing (Hirschnitz-Garbers et al., 2016). This rapid growth in consumption gives rise to eco-system resource constraints and environmental degradation risks (Sheth et al., 2011; Mont et al., 2014). Increasing natural resource use will lead to a bigger impact on our planet's environment and subsequently our well-being (Bringezu et al., 2017). For future generations to be able to meet their needs, sustainable development is necessary, and is defined as: *"development that meets the needs of the present without compromising the ability of future generations to meet their own need*s" (WCED, 1987, p.43). Sustainable development however, is not achievable by only focusing on improving resource efficiency (Hirschnitz-Garbers et al., 2016; Ahlström et al., 2020), and this is where multilateral agencies, politicians, businessmen, and non-governmental organizations (NGO's) largely reduce their approach to (Hoffman, 2015). Hoffman (2015) argues that this is because "*changing technologies is much easier than altering societies and their socio-economic drivers*" (p. 2). For sustainable development to be realistic and achievable, improving resource efficiency should be enhanced with striving for ecological consistency as well as sufficiency (Hirschnitz-Garbers et al., 2016; Ahlström et al., 2020). Resource efficiency leads to the occurrence of the backfire problem or 'Jevons Paradox' (Alcott, 2008), or also called rebound effects (Murray, 2012). This concerns the situation that "*an increase in efficiency in using a resource leads to increased use of that resource rather than to a reduction in its use*" (Giampietro and Mayumi, 1998, p.3), and with increased productivity, prices decrease, leading to a higher demand of such resources (Khazzoom, 1980). Ecological consistency, or 'industrial ecology', "*aims at an industrial metabolism that is consistent with nature's metabolism*"

(Huber, 2000, p.2), and is partly focused on minimizing the consumption rate of exhaustible resources through; (1) substituting non-renewable resources for renewable resources, (2) increasing material and energy efficiency and (3) recycling (WCED, 1987).

Green Consumption

Consumers and their consumption patterns have a significant role in the waste generation and resource use caused by production-consumption systems, since household consumption accounts for 70-80% of the whole cycle impact of products (Tukker et al. 2006). Green products play a crucial role in reducing the consumption rate of exhaustible resources. Green products "*strive to protect or enhance the natural environment by conserving energy and/or resources and reducing or eliminating use of toxic agents, pollution, and waste*" (Ottman et al., 2006, p.24). In their total life-cycle, from production to post-use phases, green products have a lower environmental impact (Sheth et al., 2011). However, the demand for green products is still low (Lai and Cheng, 2016), and hence the consumption of green products is still too small to have a significant impact (Sheth et al., 2011).

Sheth et al. (2011) give as reasons for the low consumption of green products: the low success of green marketing, and subsequently the adoption of green products, the compromises in performance quality of green products, combined with limited availability and high prices, ineffective marketing and consumer distrust of green marketing due to green washing. However, market demand is one of the most important factors in accelerating the innovation of green products (Pant et al., 2020; Wei and Morgan, 2004). Hence, in order to improve product related characteristics of green products, market adoption and consumption is important. Through innovation, some of the barriers related to the green product's characteristics can be reduced/minimized. This means better product quality, lower prices (efficiency gains in manufacturing processes), and a better availability of these products. This in turn also leads to a more positive attitude towards green products. Consumers are indicating that they want to buy green products if they are easily available at competitive prices (Pant et al., 2020).

Ineffective marketing and consumer distrust of green marketing are also seen as important barriers of green consumption (Goh and Balaji, 2016; Sheth et al., 2011). Green skepticism is a consequence of exposure to greenwashing activities from companies (De Jong et al., 2018), and is a

response towards potentially misleading and/or false green claims (Nyilasy et al., 2014). This negatively influences consumers' intention to buy green products (Goh and Balaji, 2016; Sheth et al., 2011). Greenwashing occurs when an organization makes green claims but their actual environmental performance does not reflect that, leading to a false positioning as a green company (De Jong et al., 2020).

Manufacturers should focus on spreading awareness on the significance of their green products (Pant et al., 2020; Terlau and Hirsch, 2015; Jäger and Weber, 2020), complemented by information on their CSR initiatives, since this positively influences consumers' trust in the firm and its products (Kang and park, 2018). Digital media can be very effective in spreading this kind of information (Pant et al., 2020; Kumar and Christodoulopoulou, 2014).

CSR and CSR Communication

A common strategy that is used by organizations to increase organizational image, reputation and credibility, is to position themselves as contributing to the social good and not simply on organizational returns (Hayes and Carr, 2021). Through corporate social responsibility (CSR) organizations show their efforts to demonstrate care and pro-social action for society (Hayes and Carr, 2021), and differentiate their products as social or environmental sustainable (Orazi and Chan, 2020).

Companies are increasingly investing large sums in implementing communication strategies as a part of marketing (Medina et al., 2021), part of this communication strategy is the communication of Corporate Social Responsibility, which has been heavily invested in (Hutton et al., 2001).

However, contradictory findings in academic research lead to no consensus on the effectiveness of CSR communication strategies (Medina et al., 2021). Literature on effective CSR communication strategies is under-researched (Edinger-Schons et al., 2019). Sarkar and Searcy (2016) argue that corporate social responsibility is not fulfilling its potential, partly due to the fact that there is no universally accepted definition of CSR. The definitional problems make it difficult to compare results from different studies, and limit the understanding of strategic implications of CSR (Sarkar and Searcy, 2016). They propose the following definition of CSR (p. 1433):

"CSR implies that firms must foremost assume their core *economic* responsibility and *voluntarily* go beyond legal minimums so that they are *ethical* in all of their activities and that they take into account the impact of their actions on *stakeholders* in *society*, while simultaneously contributing to global *sustainability*".

Their extensive study on the network structure of the definition of CSR, spanning a time period from 1953 to 2014, resulted in 6 core dimensions; Economic, Ethical, Social, Stakeholders, Sustainability and Discretionary. Sustainability overlaps with environmental CSR, but has broader implications, since it also focuses on the welfare of future generations, through the preservation of natural and human resources (Reilly and Weirup, 2010; Reilly and Hynan, 2014).

Since the results of CSR communication on for example purchase intention is not clear, Medina et al. (2021) argue that future research should focus on different CSR initiatives, such as environmental or societal, and how they are processed by consumers.

Digital Marketing and Social Media

Digital environments, and especially social media, are an increasingly used way to communicate, for example corporate social responsibility (CSR) statements (Hayes and Carr, 2021). Digital and social media marketing provides organizations with significant opportunities (Dwivedi et al., 2020), and helps achieve marketing objectives at low costs (Ajina, 2019; Kang and Park, 2018).

Digital and social media marketing can play a significant role in promoting green products and subsequently the adoption (Kumar and Christodoulopoulou, 2014). Hence, provides an interesting avenue for research (Reilly and Hynan, 2014). However, literature that combines digital marketing with sustainability is scarce (Diez-Martin et al., 2019).

Kannan and Li (2017) define digital marketing as "*an adaptive, technology-enabled process by which firms collaborate with customers and partners to jointly create, communicate, deliver, and sustain value for all stakeholders*" (p. 23). Online communication tools such as social media have enabled consumers to respond to firms, and this pushed firms to adopt a more digital presence (Tiago and Verissimo, 2014). Through digital presence, the main goal for firms is to achieve a competitive

advantage by improving corporate image and reputation (Troise and Camilleri, 2021). Companies use social media to increase sales and demand, and to improve communication with customers, employees or partners (Reilly and Weirup, 2010). Social media can be defined as "*internet-based, disentrained, and persistent channels of masspersonal communication facilitating perceptions of interactions among users, deriving value primarily from user-generated content*" (Carr and Hayes, 2015, p. 8).

Corporate communication via social media is a cost-effective tool to build brand image and to enrich customer relationships, via timely and direct end-consumer contact, and often takes the form of relationship marketing (Kang and Park, 2018; Kaplan and Heimlein, 2010; Hayes and Carr, 2021). Social media significantly influences brand loyalty, brand sustainability, business effectiveness and customer engagement (Dwivedi et al., 2020). Hence, social media provides a fruitful channel to communicate, advertise and promote brands/products. The systematic literature review will go further on the topic of social media marketing.

Systematic Literature Review: Social Media Marketing

The aim of this literature review is to provide a general overview of social media marketing, by looking into research themes and core concepts, and how social media can be used for CSR communication, and if this can ultimately lead to green purchase intentions.

Method

A systematic literature is conducted to ensure a robust, replicable, scientific and transparent process that minimizes bias (Tranfield et al., 2003). The methodological approach is based on aspects from the stages in a systematic review, as proposed by Tranfield et al. (2003), from insights from peer-reviewed published literature reviews (Williams et al., 2017; Geissdoerfer et al., 2017), the applied method can be found in Appendix I. The reporting approach is based on the PRISMA-S Model as described by Rethlefsen et al. (2021), with the usage and reporting of items that are only relevant and appropriate for this review (Rethlefsen et al., 2021), and can be found in Appendix II.

Search and Planning Process

Step 1: The need for a systematic literature review that combines digital marketing, corporate social responsibility (CSR) and sustainability is determined. This is conducted via a search using the Web of Science and EBSCOhost. The string that is used for Web of Science:

TS=("Literature review") AND (AK="Digital Marketing") AND (AK="Corporate social responsibility") AND (AK=Sustain*)

The string that is used for EBSCOhost:

SU=("literature review") AND (KW="Digital Marketing") AND (KW="Corporate social responsibility") AND (KW=sustain*)

For the Web of Science the database: “Web of Science Core Collection” is used, and for EBSCOhost: “Business Source Elite”. Both searches resulted in 0 articles, possibly due to the specific search, but this indicates that there are 0 literature reviews that have incorporated these three subjects. When corporate social responsibility or sustainability is removed from the string, resulting in a search with digital

marketing and one or the other (corporate social responsibility or sustainability), there are still no results. When digital marketing is removed from the string, Web of Science shows 176 results and EBSCOhost 17. This indicates that the combination of digital marketing with one of these (or both) two subjects is less researched.

Step 2: The temporal boundaries for the review are defined. Due to the focus of this review on digital marketing and social media (communications), here it is chosen to determine the boundaries on recent and relevant developments in the digital marketing environment, with a focus on social media and CSR communications. The period of 2010-2021 is selected after analyzing literature reviews on this topic, following Arrigo (2018).

Step 3: The search area is further defined by a developed list of journals to be used. The list was constructed by looking at published literature reviews (Saura et al., 2017; Geissdoerfer et al., 2017), and by looking at the journal rankings and relevant papers. This resulted in the following list, as displayed in Table 1. The relevant published literature reviews (as mentioned above) made use of these journals and after reading the aims & scopes of these journals they were considered for inclusion or exclusion. The journals have different aims with respect to research topics, and since this paper combines CSR literature with digital marketing and sustainability it was chosen to select journals that publish relevant articles with a focus on one of these research topics. As for example, the *Journal of Interactive Marketing*, focusses on topics related to interactive marketing, both online and offline, with one of the main topics being social media marketing.

Table 1. Targeted Journals.

Journals
Business Horizons, International Journal of Research in Marketing, Journal of Business Ethics, Journal of Business Research, Journal of Cleaner Production, Journal of Interactive Marketing, Journal of Marketing, Journal of Marketing Research, Journal of Research in Interactive Marketing, Sustainability

Step 4: One keyword string was developed. This string was developed to capture articles related to all the topics. This string is as follows: "digital marketing" OR "digital communication" OR "social media marketing" OR (digital* AND sustain*) OR (social media* AND sustain*) OR (digital* AND CSR*) OR (social media* AND CSR*).

Inclusion and exclusion criteria were also developed in this step. Articles with a focus on social media, or social media combined with the other keywords are included. Some examples of when articles were deemed irrelevant are; results with only hits on the keyword sustain*, resulting in papers that focus on sustainable solutions in different fields (for example building). Or when different digital marketing strategies/technologies than social media were used.

Step 5: The search was conducted using the databases "Web of Science Core Collection" with the "Social Sciences Citation Index" (SSCI), and for EBSCOhost: "Business Source Elite". For the first step in inclusion, articles needed to be peer reviewed, written in English and published in the journals mentioned in step 3. This was done to ensure the quality of the articles in the review and to reduce the number of articles. The keyword strings were run in the above mentioned databases, and this resulted in 1.635 potentially relevant articles, 955 resulting from "Web of Science" and 1.284 from EBSCOhost. Figure 1 displays the filtering process.

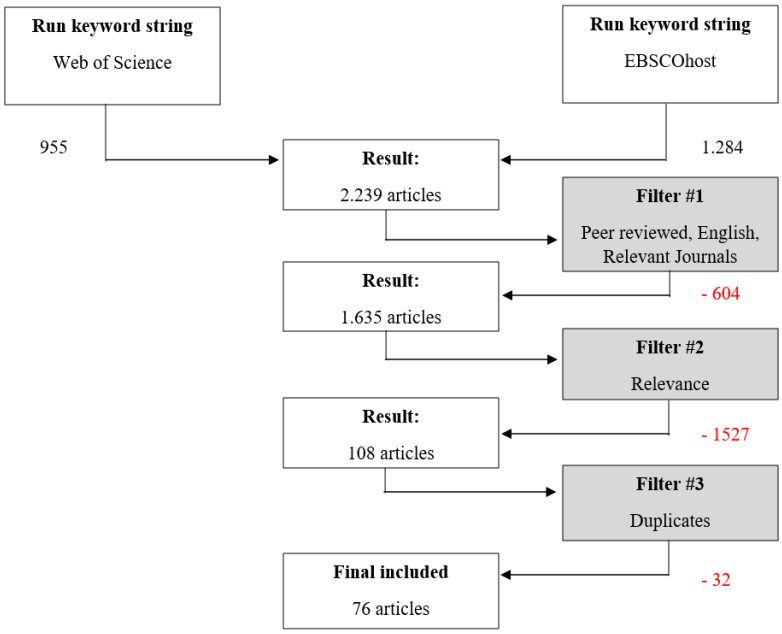

Figure 1. Filtering process.

Step 6: A database was developed containing the articles that were selected for the review, screened on relevance, after analyzing their titles and abstracts. This resulted in a number of articles to be included of 76. The included articles were subsequently analyzed on their full text for the descriptive and thematic analysis.

Descriptive and Thematic Analysis

Step 7: A descriptive analysis was conducted, the results can be found in the Descriptives paragraph below.

Step 8: As a final step, a thematic analysis was conducted. The included articles were coded so that their primary focus was described. This resulted in 7 primary themes. These themes are broad, and hence, sub-themes and representative articles are presented in table 5, displayed in Appendix III. Core concepts are identified, and displayed in table 6, Appendix IV.

Descriptives

From 2010 until 2016, articles published related to digital marketing and social media, CSR and sustainability were limited, averaging less than 2 articles published per year, see Figure 2. Since 2016, the articles published on these topics has increased dramatically, with 67 of 76 included articles stemming from 2016.

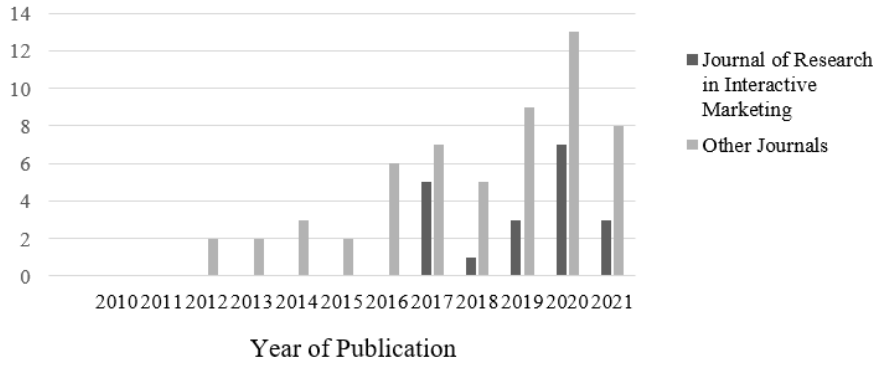

Figure 2. Distribution of publications on digital marketing and social media, CSR and sustainability (per year).

The *Journal of Research in Interactive Marketing* was used as a comparable since this was the most used journal in this literature review, with 19 out of 76 included articles. The second most used journals were *Sustainability* and *Journal of Business Research*, with both 16 included articles. The citation statistics from SSCI was used to develop a list of the top 20 cited articles that were used in the review, Table 2 on page 14 displays this.

While the distribution depicted in figure 2 suggests that research into digital marketing and social media is increasing the last few years, the top cited articles are stemming from before 2018.

Following the research themes in these articles, see Figure 3, it is found that most articles address behavioral (24) and content (19) themes. Research themes with fewer published articles are; Brand management or marketing (11), Strategy (14), CSR (5), Firm performance (2), Green-Marketing (1).

Figure 3. Research Themes

2. Top cited articles.

Authors	Year	Title	Journal	# citations
Kim, A.J., Ko, E.	2012	*Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand*	JOURNAL OF BUSINESS RESEARCH	572
Smith, A.N., Fischer, E., Chen, Y.J.	2012	*How Does Brand-related User-generated Content Differ across YouTube, Facebook, and Twitter?*	JOURNAL OF INTERACTIVE MARKETING	357
Kumar, A., Bezawada, R., Rishika, R., Janakiraman, R., Kannan, P.K.	2016	*From Social to Sale: The Effects of Firm-Generated Content in Social Media on Customer Behavior*	JOURNAL OF MARKETING	239
Godey, B., Manthiou, A., Pederzoli, D., Rokka, J., Aiello, G., Donvito, R., Singh, R.	2016	*Social media marketing efforts of luxury brands: Influence on brand equity and consumer behavior*	JOURNAL OF BUSINESS RESEARCH	176
Felix, R., Rauschnabel, P.A., Hinsch, C.	2017	*Elements of strategic social media marketing: A holistic framework*	JOURNAL OF BUSINESS RESEARCH	165
Yadav, M.S., de Valck, K., Hennig-Thurau, T., Hoffman, D.L., Spann, M.	2013	*Social Commerce: A Contingency Framework for Assessing Marketing Potential*	JOURNAL OF INTERACTIVE MARKETING	160
Chang, Y.T., Yu, H.J., Lu, H.P.	2015	*Persuasive messages, popularity cohesion, and message diffusion in social media marketing*	JOURNAL OF BUSINESS RESEARCH	107
Tiago, M.T.P.M.B., Verissimo, J.M.C.	2014	*Digital marketing and social media: Why bother?*	BUSINESS HORIZONS	97
Lee, K., Oh, W.Y., Kim, N.	2013	*Social Media for Socially Responsible Firms: Analysis of Fortune 500's Twitter Profiles and their CSR/CSIR Ratings*	JOURNAL OF BUSINESS ETHICS	88
Schulze, C., Scholer, L., Skiera, B.	2014	*Not All Fun and Games: Viral Marketing for Utilitarian Products*	JOURNAL OF MARKETING	84
Zhu, Y.Q., Chen, H.G.	2015	*Social media and human need satisfaction: Implications for social media marketing*	BUSINESS HORIZONS	78
Wang, Z., Kim, H.G.	2017	*Can Social Media Marketing Improve Customer Relationship Capabilities and Firm Performance? Dynamic Capability Perspective*	JOURNAL OF INTERACTIVE MARKETING	71
Reilly, A.H., Hynan, K.A.	2014	*Corporate communication, sustainability, and social media: It's not easy (really) being green*	BUSINESS HORIZONS	65
Saboo, A.R., Kumar, V., Ramani, G.	2016	*Evaluating the impact of social media activities on human brand sales*	INTERNATIONAL JOURNAL OF RESEARCH IN MARKETING	51
Sogari, G., Pucci, T., Aquilani, B., Zanni, L.	2017	*Millennial Generation and Environmental Sustainability: The Role of Social Media in the Consumer Purchasing Behavior for Wine*	SUSTAINABILITY	38
Lin, H.C., Bruning, P.F., Swarna, H.	2018	*Using online opinion leaders to promote the hedonic and utilitarian value of products and services*	BUSINESS HORIZONS	36
Choi, E., Ko, E., Kim, A.J.	2016	*Explaining and predicting purchase intentions following luxury-fashion brand value co-creation encounters*	JOURNAL OF BUSINESS RESEARCH	35
Barcelos, R.H., Dantas, D.C., Senecal, S.	2018	*Watch Your Tone: How a Brand's Tone of Voice on Social Media Influences Consumer Responses*	JOURNAL OF INTERACTIVE MARKETING	33
Halliday, S.V.	2016	*User-generated content about brands: Understanding its creators and consumers*	JOURNAL OF BUSINESS RESEARCH	31
Gong, S.Y., Zhang, J.J., Zhao, P., Jiang, X.P.	2017	*Tweeting as a Marketing Tool: A Field Experiment in the TV Industry*	JOURNAL OF MARKETING RESEARCH	31

Results

To be able to create a general overview of the articles that are used in this literature review, this section is divided into 4 paragraphs. It starts with an overview of the core concepts that are mentioned across the different research themes within this literature review, followed up by an overview of the research themes, finishing with the conclusion that is formulated towards the main objective of this review.

Core Concepts

The overview of the theoretical concepts that are mentioned across the different research themes, indicating their relevance towards the literature of social media marketing, is shown in table 6, Appendix IV. Four core concepts that help in creating a general overview are identified. These are; *Engagement, Brand Communities, Consumer-based Brand Equity (CBBE), Social Media Marketing Activities (SMMA).* A short description of the concepts will be given here.

Engagement

Engagement is an important concept, since it impacts 'Consumer-based Brand Equity' (CBBE) (Chahal and Rani, 2017; Correa et al., 2020; Rosenthal and Brito, 2017), and can increase awareness of responsible environmental behavior (Sultan et al., 2020). Engagement is defined as "*specific interactive experiences which are an indispensable component of a customer's particular engaged state and that these interactions take place between a specific 'engagement subject' (e.g. consumer) and 'engagement object'* " (Brodi et al., 2020, p. 259).

Engagement can be divided into affective, cognitive and behavioral engagement (Peltier et al., 2020; Correa et al., 2020). Consumers have multiple reasons to engage with other users on social media, with users being firms and other individuals (any entity for that matter). What kind of digital engagement practices an individual engages in, is dependent on their motivational brand engagement state, age and their usage of online media (Eigenraam et al., 2018). They categorized digital engagement practices into five types;

1. For fun
2. For learning
3. For giving feedback
4. Talk about a brand
5. Work for a brand

Brand communities

Brand communities offer consumers a way to engage with their brands and with other users that share the same interests. Brand communities are used by consumers to gather information on brands and purchase decisions (Zollo et al., 2020). Furthermore they can act as a tool to achieve life goals (Halliday, 2016). An online brand community is "*an aggregation of self-selected people who share similar interests and communicate with each other about a brand through computer-mediated communications*" (Baldus et al., 2015, p. 256). Brand communities can be customer-initiated and firm-initiated, and both offer different benefits (Porter et al., 2013). Engagement with a brand community can influence consumers' brand perception, their brand association, loyalty and brand satisfaction (Pathak and Pathak-Shelat, 2017; Clark et al., 2017).

Consumer-based Brand Equity (CBBE)

Consumer-based Brand Equity (CBBE) differs from brand-equity, as it adds two more dimensions to the concept. The four dimensions describing CBBE are; *brand awareness*, *brand image*, *perceived quality* and *brand loyalty* (Chahal and Rani, 2017, p. 329). Keller's (2002) model of brand equity only consists of *brand awareness* and *brand image.*

Brand equity is defined as "*brand assets and liabilities linked to a brand, its name and symbol that add or subtract from the value provided by a product or service to a firm and/or to that firm's customers*" (Aaker, 1991, p. 15). CBBE is a way to understand brand equity from the consumers' perspective, indicating the extensiveness of the consumers' attachment, loyalty and awareness of brands (Yoo and Donthu, 2001).

High CBBE offers firms a lot of preferable outcomes, such as; increased brand preference (Godey et al., 2016; Zollo et al., 2020), willingness to pay a premium price (Morra et al., 2018; Godey et al., 2016), increased loyalty (Morra et al., 2018; Godey et al., 2016), higher profit margins (Morra et al., 2018),

purchase intention (Zollo et al., 2020), future purchase/repurchase behavior (Morra et al., 2018; Godey et al., 2016) and higher stock returns (Zollo et al., 2020).

Social Media Marketing Activities (SMMA)

Social media offers an interactive, two-way direct communication, and eliminates time, location and medium restrictions in the communication between brands and customers (Kim and Ko, 2012). Social Media Marketing Activities (SMMA) are "*promotional and relational communication tools that compliment organizational marketing strategies by offering enhanced interactivity through online relationships between organizations and consumers*" (Ibrahim et al., 2020, p. 5). These SMMAs can be described in five main dimensions of social media marketing efforts (Zollo et al., 2020), and include; entertainment, interaction, trendiness, customization and word of mouth (WOM) (Kim and Ko, 2012).

SMMAs contribute as effective marketing communication methods by improving customer equity drivers (Kim and Ko, 2012; Ibrahim et al., 2021; Zollo et al., 2020; Godey et al., 2016) and improving interactivity (Ibrahim et al., 2020).

Research Themes

7 different research themes were found while analyzing the included articles. They are presented in table 5, appendix III. A short description of the themes will be given here.

Behavioral

Most of the articles considered consumer behavioral aspects, since consumer factors serve as antecedents to engagement (Peltier al., 2020), and subsequently brand equity (Dhaoui and Webster, 2021; Chahal and Rani, 2017; Correa et al., 2020; Rosenthal and Brito, 2017). Since engagement is such an important concept, it is important to know how consumer engagement arises and how brands can influence consumer engagement on social media. Consumer engagement behavior can be understood in the context of consumer-brand and consumer-consumer interactions (Dhaoui and Webster, 2021). Motives to use social media significantly influences engagement, and can be described in terms of social factors and consumer-based factors (Chahal and Rani, 2017). The different motives to use social media

stem from differences in the needs of consumers (Zhu and Chen, 2015) and influence brand-consumer interactions and branding outcomes (Qin, 2020). Cultural differences also influence attitudes and intentions to use social media (Alsaleh et al., 2019), suggesting that culture also influences engagement.

Brand Management or Marketing

Within brand management or marketing, the concept of 'Consumer-based Brand Equity' (CBBE) is central. Through the usage of SMMAs, the literature focuses on how the dimensions of CBBE can be enhanced. When comparing traditional media with social media, traditional media loses its effectiveness on brand equity, due to lower interactivity and less relationship development (Morra et al., 2018).

By engaging in social media marketing activities, firms can help customers grow confidence in the brand, which increases brand trust and brand loyalty (Ibrahim et al., 2021). SMMAs can be used to build brand image and increase brand awareness, and offer brands a tool to attract and retain customers (Khan et al., 2019).

Brands can use social media to build brand communities, where consumers search for information related to brands and to help them make purchase decisions (Zollo et al., 2020). By engaging with such communities, brands can influence consumers' brand perception, their brand association, loyalty and brand satisfaction (Pathak and Pathak-Shelat, 2017; Clark et al., 2017).

Social media offers firms a significant resource to help build new CRM capabilities for organizational transformation and to add firm value (Wang and Kim, 2017). Effective brand management should focus on analyzing the interactions within brand communities, to help identify shared interests and needs among community members, and engage in non-commercial conversations, in order to enhance brand value (Pathak and Pathak-Shelat, 2017).

Content

Another extensively researched theme is related to content. Content can be divided into user-generated (UGC) and firm-generated content (FGC).

In the literature, 12 dimensions of user-generated content have been identified (Smith et al., 2012; Roma and Alioni, 2019), examples are; Promotional Self-Presentation, Brand centrality, Brand Sentiment and Brand recommendation. Through developing social interactions, online word-of-mouth (OWOM) and brand relationships, UGC influences consumer brand perceptions (Smith et al., 2012). User-generated content positively influences brand loyalty, perceived brand quality and purchase decisions (Roma and Alioni, 2019).

Firm-generated content has been found to have a significant positive impact on consumers' behavior (Kumar et al., 2016). In FGC, message design plays a crucial role. Several articles describe message characteristics or structural features that have different effects on consumer-based dimensions (Barcelos et al., 2018; Kang and Park, 2018; Lim and Childs, 2020; Ho et al., 2020; Roma and Alioni, 2019; Reilly and Hynan, 2014; Conte et al., 2018; Smith et al., 2012; Park et al., 2020; Grigsby and Mellema, 2020; van Laer et al., 2019).

Consumers can have different motives to use social media, stemming from differences in their needs (Zhu and Chen, 2015). This leads to differences in social media platforms and how they promote UGC (Smith et al., 2012; Roma and Alioni, 2019).

CSR

Social media provides firms with a communication channel in which they can communicate their CSR initiatives and sustainability achievements (Reilly and Hynan, 2014). Firms that were classified as green also made more use of social media than non-green firms (Reilly and Hynan, 2014). Firms with high CSR credentials have increased user-driven communication (or UGC) and this provides them with more benefits from the usage of social media, signaling instrumental benefits of CSR (Lee et al., 2013). For example, they receive more positive word-of-mouth and less negative word-of-mouth (Vo et al., 2019).

The different dimensions of CSR also have different influences on user/consumer engagement, for example, the communication of environmental CSR related content resulted in a higher engagement when compared to social aspects (Conte et al., 2018).

CSR communications have been found to have a positive impact on brand reputation, can influence consumer support, but are seldom related to purchasing behavior (Okazaki et al., 2020).

Firm Performance

The amount of research articles that examine the value-generating potential of social media is little, while 'social commerce' is a hot topic among practitioners (Yadav et al., 2013). This literature review encountered similar results while looking at the included articles.

To help assess the potential of social commerce, Yadav et al. (2013) propose a contingency framework that examines the role of computer-mediated social environments (CMSEs) in four different phases. These are; (1) the need-recognition phase, (2) Pre-purchase phase, (3) Purchase-decision phase and (4) Post-purchase phase. Within each phase CMSEs have different purposes.

SMMAs perceived by consumers were found to positively influence a brand's future profit (Kim and Ko, 2012). By engaging in SMMAs, firms improve customer equity drivers, which in turn influences; willingness to pay a premium price (Morra et al., 2018; Godey et al., 2016), higher profit margins (Morra et al., 2018), purchase intention (Zollo et al., 2020), future purchase/repurchase behavior (Morra et al., 2018; Godey et al., 2016) and higher stock returns (Zollo et al., 2020).

Green Marketing

While sustainability was one of the keywords in the string, articles that focused primarily on the usage of social media and sustainability concepts were limited. This confirms the image that Diez-Martin et al. (2019) addressed.

In the wine industry, social media increases sustainability awareness among consumers, and this subsequently influences consumers' buying behavior in the sense that they are willing to pay a price premium (Sogari et al., 2017).

Consumers acknowledge companies' eco-marketing activities primarily through observations made on their products ecological (friendly or not) packaging and SMMAs (Bojanowska and Kulisz, 2020).

The literature also indicated some differences due to age and gender, where females displayed higher awareness on zero-waste activities and pro-ecological social campaigns (Bojanowska and Kulisz, 2020), young consumers were found to be more sensitive to energy issues (Sogari et al., 2017).

Strategy

Tiago and Verissimo (2014) argue that to effectively utilize the advantages that the internet offers, firms must adopt social media. The adoption of social media by SMEs are impacted by organizational, technological and environmental factors (Rahman et al., 2020).

In their efforts to create a holistic social media marketing framework, Felix et al. (2017) propose four interdependent dimensions that firms need to consider when creating social media marketing strategies. These are; (1) SMM Scope, (2) SMM Culture, (3) SMM Structure and (4) SMM Governance.

Digital and social media marketing strategies can be considered from four business strategies, which help firms and marketeers to prioritize their aims and marketing tactics (Olson et al., 2021). These business strategies are; 1) prospectors, (2) analyzers, (3) low-cost defenders and (4) differentiated defenders. These strategies offer different perspectives that help to formulate the aims of the proposed digital marketing strategy and to find the best suitable digital marketing strategy.

Furthermore, some articles examined specific strategies related to; Influencer/opinion leaders-marketing (Campbell and Farrell, 2020; Lin et al., 2018), freemium-strategies (Saboo et al., 2016), viral-marketing (Schulze et al., 2014).

Conclusion

The aim of this literature review was besides giving a general overview, to look into how social media can be used for CSR communication, and if social media marketing can increase the purchase intention of green products. Since the overview is provided by the results section, describing the social media marketing literature in four concepts and seven research themes, this section will only describe the latter two aims.

Firstly, sustainable firms that have high CSR credentials can obtain more benefits from using social media, achieving stronger and faster social transmission through an increase in user-driven communication (UGC) (Lee et al., 2013). Furthermore, they receive more positive and less negative word-of-mouth (Vo et al., 2019). This signals that firms that engage in CSR can obtain additional benefits when using social media. Social media provides firms with a communication channel in which they can communicate their CSR initiatives and sustainability achievements (Reilly and Hynan, 2014). Users following a firm's CSR account appear to be interested in CSR related messages, resulting in a greater audience reaction (Saxton et al., 2013).

When communicating CSR messages, firms must incorporate message design features. Message characteristics and structural features influence consumer-based dimensions (Barcelos et al., 2018; Kang and Park, 2018; Lim and Childs, 2020; Ho et al., 2020; Roma and Alioni, 2019; Reilly and Hynan, 2014; Conte et al., 2018; Smith et al., 2012; Park et al., 2020; Grigsby and Mellema, 2020; van Laer et al., 2019). Firm-generated content has a significant positive impact on consumers' behavior (Kumar et al., 2016).

However, firms' CSR communication often resembles advertisements and public relation approaches to communication, these approaches can have negative consequences since consumers focus on negative moralizations of firms (Boyd et al., 2016). Furthermore, this can also explain why positive CSR is ignored by consumers (Boyd et al., 2016). Therefore, firms must focus on non-commercial brand-consumer interactions (Kang and Park, 2018) and move away from a firm-centered focus (Okazaki et al., 2020; Boyd et al., 2016). When creating FGC, firms must avoid using informal expressions (Kang and Park, 2018) and employ good social media etiquette (Reilly and Hynan, 2014).

CSR communications have been found to have a positive impact on brand reputation, can influence consumer support, but are seldom related to purchasing behavior (Okazaki et al., 2020). However, some articles do indicate that CSR communications influence consumers' buying behavior (for example Sogari et al., 2017; Pant et al., 2020). Medina et al. (2021) suggest that a lower willingness to purchase a green product revolves around variations in the processing of CSR messages by each consumer. This

could potentially explain the contradicting results, since the CSR messages used in the articles could be designed with (or even without) different message characteristics and structural features.

Concluding, social media proves to be an effective way to communicate brand related information. CSR communications via social media receive a lot of public attention, provoking consumer reactions, which lead to consumer-consumer interactions and brand-consumer interactions. This in turn influences engagement, which subsequently influences brand equity, which results in multiple favorable outcomes as for example purchase intention. It is therefore assumed that, firms' CSR related communications, can influence (green product) purchase intentions, if they are constructed properly (structural features), communicated on the right platform and to the right audience.

Future research

From the articles in this literature review, important research questions are selected, and are placed with respect to the research themes. For every research theme, two questions are selected. Table 7, Appendix V displays them.

Theoretical Development

This chapter discusses the constructs, their relations and the resulting hypotheses, that are used to investigate the main research question.

Conceptual framework

To help investigate the influence of digital environmental CSR communication on the purchase intention of green products, two mediating variables, a moderating variable and three control variables are added. Figure 4. depicts the model without the control variables. The conceptual framework, its variables and their relationships, and subsequently hypotheses are described in this paragraph.

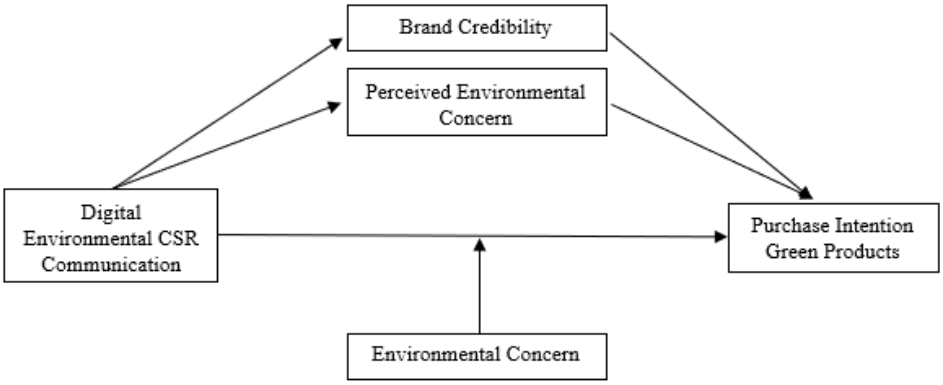

Figure 4. Conceptual framework

Digital Environmental CSR Communication

The main focus of this study lies on digital environmental CSR communication and its influence on the purchase intention of green products. Digital communication is defined as the usage of digital communication tools to convey messages/content. These digital communication tools are online, virtual platforms, and can be social networks, such as Facebook, Twitter and YouTube, or websites, (micro)blogs and search engines (Çizmeci & Ercan, 2015). The construct of digital environmental CSR communication is defined as the communication of content related to the environmental dimension of CSR, using digital communication tools. For this paper, this construct is further operationalized as the

communication of environmental CSR content via Facebook, a social network. Facebook is used as platform for the communication of environmental CSR in this survey.

Important reasons for the low success of green marketing and subsequently the adoption of green products are related to product characteristics (such as price and quality), but mainly reside in ineffective marketing and consumer distrust (also known as green skepticism) in green marketing activities (Sheth et al., 2011). By providing information on environmental activities, green/sustainable products and their significance, firms spread awareness (Sogari et al., 2017) and reduce consumer distrust towards their green products and their organizations (Kang and Park, 2018). Spreading awareness on the significance of green products, but also the constituents of their products (i.e. what makes them green/sustainable) is necessary to help consumers observe the additional benefits that these products offer, since consumers can't directly observe these benefits (Jäger and Weber, 2020). Manufacturers should therefore focus on spreading such kind of information (Pant et al., 2020). Digital and social media can be very effective in spreading this (Kumar & Christodoulopoulou, 2014), at low costs (Ajina, 2019; Kang and Park, 2018).

H1: Digital environmental CSR communication positively influences the purchase intention of green products

Perceived Environmental Concern

Through providing consumers with information on environmental activities, green/sustainable products and their significance, firms can increase the perception that they are genuinely trying to be environmentally responsible and not just to position themselves as a green company to make more money. When communicating environmental CSR initiatives and their green products, firms increase awareness (Sogari et al., 2017) and reduce consumer distrust towards their green products (Kang and Park, 2018). Through CSR initiatives corporations can improve their reputation (Park et al., 2014). In their study, Park et al. (2014) show that ethical and philanthropic CSR activities only improve corporate reputation when they engender integrity trust and social benevolence trust (described in Brand Credibility). This means that corporate reputational outcomes of such CSR initiatives only improve when consumers actually believe that the company is genuinely concerned and are consistent with their values and behavior. This is in line with Pérez (2015), who states that CSR reporting or communication

helps to improve corporate reputation when there is no perception among stakeholders of ulterior motives, such as financial or economic incentives. Perceived corporate social responsibility directly influences corporate reputation, which in turn improves purchase intentions, with a more positive corporate reputation leading to a higher purchase intention (Gatti et al., 2012). The variable 'Perceived Environmental Concern' is defined as the degree a consumer thinks a company is genuinely trying to be environmentally responsible (Reich and Soule, 2016). Since consumers' perception of corporate social responsibility (or environmental responsibility in this study) influences their purchase intention, and the communication and nature of the CSR messages play an important role in the formation of these perceptions, it is expected that perceived environmental concern mediates the relation between digital environmental CSR communication and the purchase intention for green products (**H2**).

H2: Perceived environmental concern mediates the relation between digital environmental CSR communication and the purchase intention for green products

Brand Credibility

Since the low adoption of green products is partly a result of consumer distrust in such products, it is important manufacturers communicate and spread awareness about their green products. An antecedent of consumers' distrust in green products lies in consumers their uncertainty about product attributes and/or benefits. Brands can influence these attitudes by reducing information asymmetry about their products, and help consumers learn and evaluate brand information (Erdem et al., 2002).

However, consumers' past experiences with green products or corporate communications of such products also plays a major role in attitude formation, in this case distrust, which affects consumers' choice behavior. Consumers' skepticism on environmental communication (also known as green skepticism) has an indirect negative effect on green purchase intentions (Goh and Balaji, 2016; Sheth et al., 2011). Green skepticism is a consequence of exposure to greenwashing activities from companies (De Jong et al., 2018). Greenwashing occurs when an organization makes green claims but their actual environmental performance does not reflect that, leading to a false positioning as a green company (De Jong et al., 2020). Since consumers are exposed to these kinds of false environmental communications, the impact of their perceptions on the credibility of environmental communications on their behavior is

essential. Credibility is seen as a subcategory of trust (Lock and Seele, 2017), and is defined as "*a perceptual state, i.e. the outcome of an attribution process in which recipients of messages form judgments about their sources and therefore assess them as credible or not*" (Jackob, 2008, p. 1). Trust is considered a multidimensional construct, with factors such as; ability, benevolence and integrity, explaining the majority of trustworthiness (Mayer et al., 1995). The factor benevolence, or mentioned as social benevolence trust by Park et al. (2014) "*refers to consumers' belief that a company is genuinely concerned with the preservation and enhancement of the welfare of society*" (p. 297). Since social benevolence trust is linked to corporate social responsibility, this perspective of trust is considered in this study.

An important antecedent in the formation of consumer attitude is brand credibility (Kumar et al., 2021). Brand credibility refers to consumers' confidence in a firm's product claims (Erdem and Swait, 1998). Brand credibility is defined as "*the believability of the product position information contained in a brand*" (Erdem et al., 2002, p. 3). The two main dimensions of brand credibility are trustworthiness and expertise (Erdem et al., 2002). In order to be perceived as credible, a brand needs to be perceived as willing and able to deliver what is promised (Erdem and Swait, 1998; Erdem et al., 2002).

Since consumers are exposed to greenwashing activities from firms, and greenwashing results in confused and skeptical consumers making them reluctant to buy green products (Chen and Chang, 2013), it is important to reduce the perception of greenwashing by disclosing more information. Brand credibility improves consumer evaluation of green brands, resulting in higher perceived quality and likelihood of purchase (Kumar et al., 2021).

By disclosing more information on green products and their significance and environmental CSR activities, firms can reduce the perception that they are greenwashing and that they are genuinely trying to make a positive impact. It has been found that CSR has a significant positive effect on corporate brand credibility and reputation (Hur et al., 2014). It is therefore expected that brand credibility mediates the relation between digital environmental CSR communication and the purchase intention of green products (**H3**).

H3: Brand credibility mediates the relation between digital environmental CSR communication and the purchase intention for green products

Environmental Concern

Environmental concern is a strong antecedent of attitudes towards green products and the willingness to purchase green products (Jaiswal and Kant, 2018), and is seen as an important predictor of green purchase intentions (Goh and Balaji, 2016). Environmental concern refers to "*values, attitudes, emotions, perceptions, knowledge and behaviors related to the environment*" (Paul et al., 2016, p. 1) and is defined as the degree an individual is concerned and involved with environmental issues (Goh and Balaji, 2016). However, as Goh and Balaji (2016) state, research points out that there are contradictory findings. Newton (2015) explains that this is partly the result of an 'overly' simplistic conceptualization of environmental concern, since it is often conceptualized as a direct predictor of purchase intentions. This means that when someone is seen as environmentally concerned, this will immediately lead to preferences in green products. In his study, Newton (2015) found that consumers need information that supports them in evaluating the environmental aspects of available product choices, before engaging in environmental purchase intentions.

Since this paper investigates the communication of environmental CSR, and by communicating environmental CSR consumers are provided with information regarding the environmental CSR initiatives and green products that a company pursues and offers, it is assumed that environmental concern positively moderates the relation of digital environmental CSR communication and the purchase intention of green products (**H4**).

H4: Environmental concern positively moderates the relation of digital environmental CSR communication and the purchase intention of green products

Purchase Intention Green Products

Purchase intention is considered as an important indicator of actual purchasing behavior, since the intention is formed under the assumption of participating in a transaction (Chang and Wildt, 1994). A behavioral intention, as for example purchase intention, is defined as "*the person's subjective*

probability that he will perform the behavior in question" (Fishbein & Ajzen, 1975, p. 12). As for the purchase intention of green products, this translates into the person's subjective probability that he/she will purchase the green product.

Control variables

Three control variables are added to help explain differences within the results that are not explained by the conceptual framework.

Demographics

Differences in Age and Gender have been found to lead to different results, for example, females displayed higher awareness on zero-waste activities and pro-ecological social campaigns (Bojanowska and Kulisz, 2020) and young consumers were found to be more sensitive to energy issues (Sogari et al., 2017). By exposing different age groups and genders to the same environmental CSR message (or not), differences in results can occur.

Consumer profiles: Habitual vs Reluctant Consumers

Medina et al. (2021) incorporated these two consumer profiles in their study that assesses consumers' processing of CSR messages, and stated that not all consumers respond the same way to CSR communication. These two profiles differ at the psychographic and behavioral level, resulting in different CSR message processing (Medina et al., 2021). Habitual consumers purchase green products regularly, whereas reluctant consumers avoid them. Differences in results could therefore occur due to a consumer's classification.

Methods

To test whether environmental CSR communication on social media has an influence on the intention to buy green products, an experiment is conducted where participants are exposed to multiple messages of environmental CSR communication of a fictional organization on the social media platform Facebook. A fictional company was used, called SCENT, to eliminate the effect of past experiences and attitudes towards brands, so that evaluations can be linked to the result of exposure to the stimuli. A similar approach is used in the study of Hayes and Carr (2021), where the effects of feedback to social media CSR statements was studied. SCENT was presented as a Scandinavian firm, established in 2010, that produces shampoo and soap from sustainable materials, with their bottles being made from 100% recycled plastic and being 100% recyclable. Since recently they offer their products on the European market. Since shampoo and soap are products almost everybody uses and are familiar with, participants are more exposed to the question if they are willing to buy a sustainable version of such a product versus the question if they would buy the product in general.

Participants

In this study, a convenience sample is used, and consists of respondents that are collected by making use of the author's personal network. The survey will be distributed via Facebook, and with that it also tackles the one criterion for inclusion. Since the platform in which the environmental CSR messages are created is Facebook, the respondents must be familiar with Facebook. To make matters more interesting for respondents to participate in this study, two Amazon gift cards of €25 were randomly distributed among participants. This resulted in 118 respondents, with 39 unfinished responses which were subsequently removed, furthermore three participants did not answer the control question correctly, resulting in a sample of 76 participants. Removal of outliers, see chapter Results, resulted in the removal of another 6 participants, bringing the sample size that is used for analysis to 70. The sample's mean age is 35 (SD = 16.3) represented by 55.7 % (N = 39) self-identified Males. The average duration for the participants to finish the survey was 20.72 minutes (SD = 56).

Experimental Design

To effectively measure the influence of digital environmental CSR communication on the purchase intention of green products it is necessary to incorporate message design features. This is of importance since message characteristics/structural features have different outcomes on consumer-based dimensions (Kang and Park, 2018; Barcelos et al., 2018; Lim and Childs, 2020; Ho et al., 2020; Roma and Alioni, 2019; Reilly and Hynan, 2014; Conte et al., 2018; Smith et al., 2012; Park et al., 2020; Grigsby and Mellema, 2020; van Laer et al., 2019). By writing these messages with the structural features in mind, the replicability and transparency of this study design is also ensured. To achieve this, this paper will use three important message structural features as described by Kang and Park (2018), who applied findings from communication science to corporate social media marketing. The environmental CSR communication messages are designed based on the structural features interactivity, formality and immediacy. An extensive description of these structural features can be found in Table 8, Appendix VI.

Furthermore, to design relevant environmental CSR messages, a closer look is taken on how large multinationals communicate their environmental CSR activities and green products. The firms that are used as examples are; Unilever, Nokia and Hewlett-Packard. These companies were classified as 'green firms' in the study of Reilly and Hynan (2014), and after analyzing their official Facebook page it was found that they communicate a lot of environmental CSR statements and messages on their page.

To test whether exposure to environmental CSR statements/messages has an influence on the purchase intention of green products, a control group was created in which participants were also exposed to messages/statements about the fictional firm's green products but without complementary information on the environmental activities of the firm and significance of the green products that they offer. These messages are designed in the same way as the environmental CSR communications. Firms that are used as an example here are; Dollar General and Tyson Foods. These were classified as 'non-green firms' in the study of Reilly and Hynan (2014), and after analyzing their official Facebook page it was found that most of the messages were related to commercially written messages on their products as well as more societal CSR messages, but with no links to environmental activities, issues or sustainable products. For

most of the messages an image was added, since Facebook is used to communicate with users through text-based posts, pictures, videos and chats (Pelletier et al., 2020). The analysis of the Facebook pages of the above mentioned brands also showed that with almost every message posted an image was added. However, the choice for the added images were random and were based on the content of the message. This is due to the fact that the influence of images is not considered in this study, future research could incorporate this in the study design.

The participants were randomly assigned to a group, this resulted in 33 respondents for the control group and 37 for the group that got exposed to environmental CSR messages.

For each group 6 messages were created. Two messages are presented in both groups, these pertain to the product offering of SCENT. By sending the groups the same message about the products, any differences regarding the results can be accounted to exposure to the other messages. Since the main research question is whether environmental CSR messages communicated via Facebook influences the purchase intention of green products, the treatment that the manipulated group received pertained the communication of environmental messages, versus the control group that received no environmental messages. Hence, it was chosen to specifically focus on how environmental CSR messages influences consumers their attitude and behavior. Due to time and resource constraints, described in limitations, it was not possible to incorporate the effects for the use of images or the number of CSR messages (or the specific environmental CSR messages themselves for that matter).

- To incorporate interactivity in the communication, one of the 6 messages in each group is a reaction to a former message and 'responds' to questions or reactions from the 'community'.
- Formality is incorporated in every message, by using formal language in the messages.
- Immediacy is included in the messages, by using emoticons and words such as *our*, and by creating a sense that SCENT is close to its community and the planet.

The messages are shown in a sequence similar to a timeline, with a banner on top to increase the perception that these are actual Facebook messages. The only difference with a Facebook timeline is the order of the message, timelines usually go from most recent to older messages. To ensure participants

read the messages in the correct order, this was changed to the older messages first and ending with the most recent message. The influence of this subtle difference is difficult to assess, since literature that describes the influence of a non-timeline fashion of messages on a corporate Facebook page was not found. However, because the images are static vs. interactive (real-life), it is assumed that the non-timeline fashion of the presentation of the corporate Facebook messages did not influence the experiment more than the static nature of the Facebook brand page. As for the static images versus the real-life interactivity that social media offers, it is assumed that it does influence the participants behavior, since interactivity is one of the main benefits that social media provides. However, the exact influence of this difference is also unknown. The limitation of static images, as mentioned by Hayes and Carr (2021), is the "natural step" (p. 7) to overcome in order to advance research in social media marketing and could provide fruitful avenues for future research. However, following Hayes and Carr (2021), it was chosen to limit the participants to static images to improve control over the experiment (i.e. to make sure that all participants viewed the same stimuli) at the expense of decreasing external validity.

Because of the size of the images, they are shown in Figure 5 and 6 Appendix VII.

Procedure

Before exposure to the stimuli, the respondents are asked to answer introductory questions that relate to the control variables; *Demographics* and *Consumer Profile: Habitual vs. Reluctant consumers*, and the moderating variable *Environmental Concern*. The scales and their corresponding questions can be found in table 9 below (p. 35).

- ***Consumer Profile: Habitual vs. Reluctant consumers***: To measure if a participant expresses his/her concern for environmental protection through his/her purchasing behavior and consumption, the scale developed by Haws et al. (2014) is used. The scale consists of a 7 point Likert-type with 6 items, with *strongly disagree/strongly agree* as endpoints. The scale demonstrated good reliability with $\alpha = 0.876$.

- ***Environmental Concern***: To measure the degree to which a person believes that ecological crises are likely to occur because of harmful human activity, the scale used by Hartmann et al. (2016) is applied.

The scale is a 7 point Likert-type scale with five statements, with *strongly disagree/strongly agree* as endpoints. The scale demonstrated good reliability with $\alpha = 0.83$.

After respondents were exposed to either environmental CSR communication in combination with the green product or to non-environmental related communication in combination with the green product, participants were asked to answer questions related to the constructs *Brand Credibility*, *Perceived Environmental Concern* and *Purchase Intention Green Products*.

- ***Brand Credibility***: To measure the extend to which a person believes the product position information contained in a brand, the scale of Erdem and Swait (1998) is used. Brand credibility is measured by asking the participants to what extent they agree with 5 statements, for example "*This brand's product claims are believable*" on a 9-point Likert-scale, with endpoints *Strongly disagree* and *Strongly agree*. The scale originally uses 7 statements, but two of them were deemed irrelevant for this study. The scale demonstrated good reliability with $\alpha = 0.862$.

- ***Perceived Environmental Concern***: To measure the degree a participant believes a company is genuinely trying to be environmentally responsible and not just acting that way to make more money (similarities with green washing activities), the scale developed by Reich and Soule (2016) is used. The scale is an 8-itemed, 7-point Likert-scale, with the endpoints of items 1 to 6 as *strongly disagree/strongly agree*, and endpoints of items 7 and 8 *not at all* and *extremely*. The scale demonstrated good reliability with $\alpha = 0.817$.

- ***Purchase Intention Green Products***: To measure the extent to which a consumer expresses an inclination to purchase a particular product, the scale developed by White et al. (2016) is used, but is changed from a nine-point semantic differentials scale, to a 5-point Likert-scale, with 3 items. One item is added from the scale used by Zúñiga (2016). Three items are added from the measurement scale used by Paul et al. (2016), they used a 5-point Likert-scale, with endpoints *strongly disagree* and *strongly agree*. The scale demonstrated excellent reliability with $\alpha = 0.924$.

Table 9. Constructs and used scales

Construct	Operationalization	Source (Scale)	Questions/Statements
Consumer Profile: Habitual or Reluctant consumer	The extent a participant expresses his/her concern for environmental protection through his/her purchasing behavior and consumption	-Haws et al. (2014)	- It is important to me that the products I use do not harm the environment. - I consider the potential environmental impact of my actions when making many of my decisions. - My purchase habits are affected by my concern for our environment. - I am concerned about wasting the resources of our planet. - I would describe myself as environmentally responsible. - I am willing to be inconvenienced in order to take actions that are more environmentally friendly.
Environmental Concern	The degree to which a person believes that ecological crises are likely to occur because of harmful human activity	-Hartmann et al. (2016)	- Humans are severely abusing the environment. - The so-called “ecological crisis” facing humankind has been greatly exaggerated. (r) - If things continue on their present course, we will soon experience a major ecological catastrophe. - The balance of nature is strong enough to cope with the impacts of modern industrial nations. (r) - Claims that current levels of pollution are changing the earth’s climate are exaggerated. (r)
Brand Credibility	The degree to which a person believes the product position information contained in a brand	-Erdem and Swait (1998)	- This brand delivers what it promises - This brand's product claims are believable - This brand has a name you can trust - This brand reminds me of someone who's competent and knows what he/she is doing - This brand doesn't pretend to be something it isn't
Perceived Environmental Concern	The degree a participant believes a company is genuinely trying to be environmentally responsible and not just acting that way to make more money	-Reich and Soule (2016)	- SCENT feels morally obligated to help the environment. - SCENT is trying to give something back to society. - SCENT genuinely cares about the well-being of the environment. - SCENT is just taking advantage of the "Green trend" to make more money. (r) - SCENT is just trying to make their product seem more attractive so they can charge a higher price. (r) - SCENT does not genuinely care about the environment. (r) - How environmentally friendly do you think SCENT is, as a company?

			- How committed to the environment do you think SCENT is, as a company?
Purchase Intention Green Products	The extent to which a consumer expresses an inclination to purchase a particular product, in this case green product	-White et al. (2016) (item 1, 3, 4) - Zúñiga (2016) (item 2)	- How likely would you buy shampoo or soap from SCENT? - How likely would you try shampoo or soap from SCENT? - How willing are you to buy shampoo or soap from SCENT? - How inclined are you to buy shampoo or soap from SCENT?
		- Paul et al. (2016)	- I will consider buying products of SCENT because they are less polluting. - I will consider switching to SCENT's products for ecological reasons. - I expect to purchase SCENT's products in the future because of its environmental contribution.

*Note: (r) is reverse coded item

After answering the questions related to the brand credibility, participants were asked to answer a control question, asking for the name of the company, in order to verify whether participants paid attention to the stimuli and not just checked boxes. This resulted in the removal of three responses.

Results

In this chapter the model and its variables are tested on their influence on the dependent variable (purchase intention green products). To assess their relationships for statistical significance IBM SPSS version 27.0 is used. First, 4 simple regression models and their relationships are tested using SPSS, and subsequently the full model is analyzed with the PROCESS Macro version 3.5.3, written by Andrew F. Hayes. Table 15 displays the different models and the corresponding coefficients. Subsequently, the results will be described following the hypotheses described.

Data Screening

Before the model can be tested, the data resulting from the survey is screened. As mentioned before in the chapter Methods, 39 respondents did not finish the survey, resulting in missing cases on some (or all) of the variables. Hence, these data entries were subsequently removed. Next, three participants who did not answer the control question correctly were removed from the sample.

The next step is the detection of outliers. Since an outlier represents an observation (or multiple) that is inconsistent with observations from the sample data (Barnett and Lewis, 1994), regression results can be biased and misleading (Kannan and Manoj, 2015). Outlier detection is used on multiple occasions with one of them being the detection of unexpected entries in databases that can arise from multiple sources such as (but are not limited to) human error or fraudulent behavior (Hodge and Austin, 2004).

The statistic that is used to detect outliers is Cook's Distance (D). Cook's Distance is an multivariate outlier detection method, commonly used to assess influential observations in least squares regression analysis (Kannan and Manoj, 2015; Jayakumar and Sulthan, 2015). Since PROCESS Macro is an ordinary least squares (OLS) and logistic regression path analysis tool, this method is considered in this study.

SPSS gives the option to calculate Cook's Distance via linear regression, and computes a new variable with the corresponding values. An accepted rule of thumb for the cutoff value is if Cook's D exceeds 4/n, with n = number of observations (Van der Meer et al., 2010). Since the number of observations is 76, this cutoff value is 4/76 = 0.053. When comparing the cutoff value to the Cook's distance values

computed by SPSS, 6 observations can be described as outliers. When plotting Cook's Distance on a simple scatterplot, see figure 7, these influential observations or outliers become visible, indicated by a red circle.

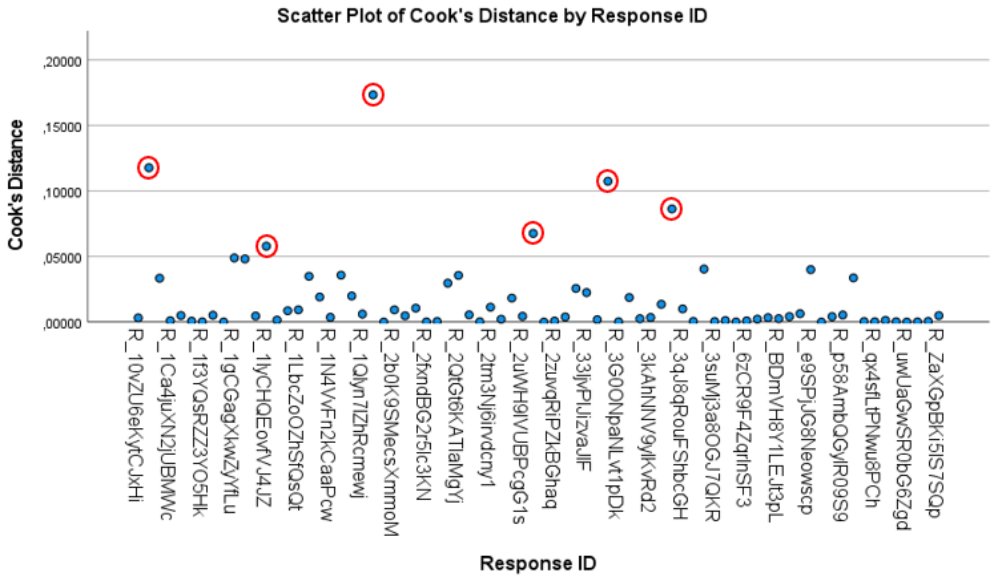

Figure 7. Scatter plot of Cook's Distance (D)

Hence, these observations were removed from the dataset, resulting in a dataset of 70 observations ready for analysis.

Data Analysis

Descriptives

After screening, the sample's descriptives are provided, to create a general overview of the data. First, the study variables and their descriptives and bivariate correlations are given in table 10. Second, the means of the control group on the study variables versus the means of the manipulated group are given, see table 11. The output for table 10 can be found in Appendix IX.

Table 10. Descriptives and bivariate correlations of study variables, with n = 70

	M	SD	1	2	3	4	5	6	7	8
1.Exposure to CSR message	-	-	-							
2.Brand Credibility Construct	5.43	1.23	-,179	-						
3.Perceived Environmental Concern construct	3.02	0.52	,284*	,527**	-					
4.Environmental Concern construct	4.89	1.25	,058	,132	,133	-				
5.Consumer profile construct (control variable)	4.74	1.01	,058	-,067	-,022	,344**	-			
6.Gender	-	-	-,208	,011	-,134	-,145	,334**	-		
7.Age	34.99	16.3	-,101	-,327**	-,166	-,148	,390**	-,196	-	
8.Purchase intention Construct	2.87	0.79	-,251*	,490**	,487**	,258*	,430**	-,154	,109	-

*Note: * indicates significance at α = 0.05
*Note: ** indicates significance at α = 0.01

What can be seen from table 10 is that the means of Environmental Concern and Consumer profile are indicating a relatively positive score on the mean. Since these were measured with a 7 point Likert-scale, their means indicate that the sample on average is slightly environmentally concerned and that their purchase behavior of environmentally friendly products is also slightly more habitual.

The sample's mean of the Purchase Intention of Green Products indicates a slightly negative mean, since it is measured on a 5 point Likert-scale. This means that on average, the sample's population had little intention to buy the green product, based on the messages that they had seen.

The high correlation and significant correlation between Brand Credibility and Perceived Environmental Concern, i.e. the mediators, could indicate that there is another not specified relation in the model. This could mean that there is a moderated mediation, or there is another variable that was not incorporated

in the model that could explain the high correlation. Secondly, since the study's main interest lies on the influence of Digital Environmental CSR Communication, the group means of the control group versus the manipulated group are given, displayed in table 11 below, created from the output seen in Appendix IX.

Table 11. Descriptives of study variables based on groups

Descriptive Statistics

Exposure to CSR message		Mean	Std. Deviation	Skewness		Kurtosis	
		Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Control group With n = 33	Age	36,7273	16,57610	,614	,409	-1,304	,798
	Gender_Dummy	0,67	,479	-0,741	,409	-1,548	,798
	Environmental Concern construct	4,8182	1,17512	-,093	,409	-,181	,798
	Consumer profile construct (control variable)	4,6818	,92079	-1,156	,409	1,698	,798
	Brand Credibility Construct	5,6606	1,08107	,572	,409	-,117	,798
	Perceived Environmental Concern construct	2,8674	,41919	-,076	,409	-,718	,798
	Purchase intention Construct	3,0779	,69261	-,422	,409	-,869	,798
Manipulated group With n = 37	Age	33,4324	16,15814	1,140	,388	-,160	,759
	Gender_Dummy	0,46	,505	,170	,388	-2,087	,759
	Environmental Concern construct	4,9622	1,32651	-,227	,388	-,996	,759
	Consumer profile construct (control variable)	4,7973	1,09159	-,222	,388	-,651	,759
	Brand Credibility Construct	5,2216	1,33399	-,213	,388	,624	,759
	Perceived Environmental Concern construct	3,1622	,56739	-,323	,388	1,283	,759
	Purchase intention Construct	2,6834	,83444	-,080	,388	-,558	,759

From table 11 it can be seen that for the variables Brand Credibility, Perceived and Environmental Concern there are different means for the groups. The manipulated group (exposed to CSR messages) scored lower on Brand Credibility and Purchase Intention of Green Products. Indicating that possibly **H1** is falsified, and that the exposure to CSR messages leads to a lower purchase intention of green products. The Perceived Environmental Concern score is higher for the manipulated group, indicating that the environmental CSR messages do influence the image of a company/brand. The table presents a mean value for gender for both respective groups. This variable is dummy coded as 1: Male and 0: Other, with other being female and other preferred description. This means that for the control group,

66,7% of the participants were male, and for the manipulated group this is 46%. Table 12 gives the frequencies of the values for the variable gender across groups.

Table 12. Gender across groups

Gender

Exposure to CSR message			Frequency	Percent	Valid Percent	Cumulative Percent
Control group	Valid	Male	22	66,7	66,7	66,7
		Female	11	33,3	33,3	100,0
		Total	33	100,0	100,0	
Manipulated group	Valid	Male	17	45,9	45,9	45,9
		Female	19	51,4	51,4	97,3
		Other preferred description	1	2,7	2,7	100,0
		Total	37	100,0	100,0	

As seen from this table, the control group consists out of 66,7% males, with the manipulated group consisting out of 45.9% males and 51.4% females. This presents a difference in group composition.

Multivariate Regression Analysis

Since the goal of the study is to measure if there is a statistical relationship between the dependent variable -or response variable- Y (Purchase Intention of Green Products) and the independent variables -or explanatory variables- Xi, regression analysis is used to model the relationships (Alexopoulos, 2010). Since the model incorporates multiple variables that try to explain the Purchase Intention of Green Products, multivariate regression analysis is used.

Assumptions Check

In their article, Preacher, Rucker and Hayes (2007) warn researchers to be aware of model assumptions when using multiple regression analysis. They state that the most important assumptions correspond with a correctly specified model (Preacher et al., 2007, p. 216), meaning the observations require to be;

- Linear
- Normally distributed
- Homoscedastic
- Independent

Linearity and Homoscedasticity

Linearity and homoscedasticity can be examined by looking into the residual plots, which plots the standardized residuals as a function of standardized predicted values (Osborne and Waters, 2002).

Multiple regression implements a linear model (Neale et al., 1994), and hence can only provide accurate estimates if the relationships between dependent and independent variables are linear (Osborne and Waters, 2002).

Another crucial assumption for the implementation of a linear model, is homoscedasticity. Homoscedasticity (also called homogeneity of covariances) refers to a constant variance in the residuals, in a regression model (Osborne and Waters, 2002). Heteroscedasticity can lead to distorted findings, and subsequently weaken the analysis. Figure 8 presents the residual scatter plot as created by SPSS, in which the linearity and homoscedasticity is visible.

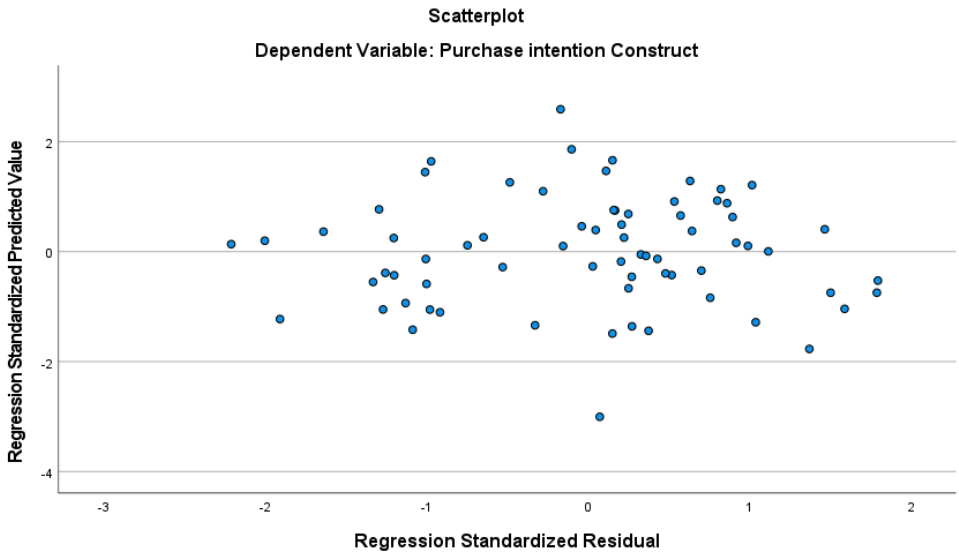

Figure 8. Scatter plot of the Residuals

For homoscedasticity, the residuals should be randomly scattered around 0, with a relatively even distribution (Osborne and Waters, 2002). Linearity can be spotted by looking at the band-like fashion in which the residuals are plotted, without presenting any curves.

Normal Distributed

The assumption of normally distributed errors is relevant for the usage of multiple regression, since inferences can be made "*about the regression parameters in the population that a sample was drawn from, even if the sample size is relatively small*" (Williams et al., 2013, p. 3). Furthermore, when errors are not normally distributed these inferences are not trustworthy (Williams et al., 2013). A visual

examination of a normal p-p plot of the standardized residuals, created by SPSS indicates this normal distribution, figure 9 depicts this.

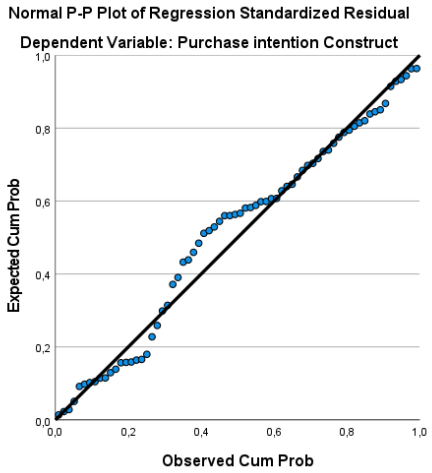

Figure 9. Normal P-P Plot of Stand. Residuals

Since the visual examination of such plots also introduces subjectivity, the Shapiro-Wilk test -which is a test of normality- is also employed.

In SPSS, the test was conducted on both the unstandardized residual as on the standardized residual, depicted by table 13.

Table 13. Tests of Normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	,112	70	,029	,972	70	,121
Standardized Residual	,112	70	,029	,972	70	,121

a. Lilliefors Significance Correction

The results indicate that the residuals are normally distributed with the Shapiro-Wilk test providing a *p*-value = 0.121, which is greater than $p = 0.05$, meaning that the null hypothesis of normally distributed data is not rejected (Razali and Yap, 2011).

Independent Observations

This assumption refers to the correlation of the residuals, a commonly used method is the Durbin-Watson test (Fomby and Guilkey, 1978). A violation of this assumption leads to biased estimates of standard errors and significance (Williams et al., 2013). A commonly used rule of thumb is that the value of the Durbin-Watson coefficient (DW) should be between 1.5 and 2.5 for independent

observations, with values from 0 to < 2 meaning positive autocorrelation and values from >2 to 4 negative autocorrelation. Table 14 shows the DW value of 2.447, meaning there is negative correlation but within acceptable boundaries.

Table 14. Durbin-Watson Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,809[a]	,655	,610	,49400	2,447

a. Predictors: (Constant), Consumer profile construct (control variable), Perceived Environmental Concern construct, Exposure to CSR message, Environmental Concern construct, Gender_Dummy, Age , Brand Credibility Construct , Int_CSRexposure_Envconc

b. Dependent Variable: Purchase intention Construct

Hypotheses Testing

To test **H1**, **H2**, **H3** and **H4,** PROCESS MACRO version 3.5 written by Andrew F. Hayes is used. This program is used as an extension in SPSS. To assess the model, its mediators, moderators and control variables (covariates), the preprogrammed model number 5 is used. Model 5 tests for mediation and moderation in the same model. To create the model, 5000 bootstrap samples are used. First, multiple simple regressions are performed. Afterwards the full model is analyzed, with the respecting paths and corresponding coefficients, depicted in figure 10. Second, the hypotheses will be tested and answers will be formulated based on the output of the PROCESS Macro and the path coefficients.

Model

Before analyzing the full model, multiple simple regressions are performed, this is depicted in table 15, and gives an overview of the relationships of the variables, and how they impact the model. The simple regressions are performed in SPSS. Since Hayes procedure makes use of bootstrapping with 5000 samples, it was chosen to the same with the simple regression models. The simple regressions were run with and without bootstrapping and the main difference occurred in the significance levels. Hence, to conduct the different analyses in a uniform matter, it was chosen to use 5000 bootstrap samples.

Table 15. Regression Analyses

Iv's (rows)	M1 DV: Brand Cred.	M2 DV: Perc. Env. Concern	M3 Purchase intentions	M4 Purchase intentions	M5 Hayes Procedure (full model)
Intercept	5.661 (SE= .186)**	2.867 (SE= .073)**	3.078 (SE= .118)**	-.181 (SE= .453)	-1.585 (SE= .552)*
CSR Communication	-.439 (SE= .286)	.295 (SE= .120)*	-.395 (SE= .180)*	-.598 (SE= .163)**	-.618 (SE= .142)**
Brand Credibility				.086 (SE= .070)	.128 (SE= .066)
Perceived env. Concern				.757 (SE= .155)**	.775 (SE= .153)**
Environmental Concern				.125 (SE= .066)	.103 (SE= .077)
Interaction term (CSR comm.*Env.concern)				-.012 (SE= .129)	-.142 (SE= .102)
Gender					-.052 (SE= .134)
Age					.002 (SE= .005)
Consumer profile					.36 (SE= .075)**
R-square	0.032	0.081	0.063	0.454	0.655

*Note: * indicates significance at α = 0.05
*Note: ** indicates significance at α = 0.001

The table displays 5 models that were run, from the main effects of digital environmental CSR communication on the mediators and the independent variable, to the incorporation of all variables without the control variables, and at last the full model. It is emphasized that, in this model, the independent variable "CSR Communication" is a dichotomous variable with the reference group being the control group (**no** exposure to environmental CSR messages). Hence, the coefficients are the difference between the mean of the manipulated group versus the control group, meaning a positive coefficient is the result of a higher mean for the manipulated group, and negative coefficients a lower

mean. Furthermore, Gender is dummy coded (as mentioned before), with female and other as reference group, this has the same implication as above.

Model 1 (M1) is a simple regression model that analyzes the relation of digital environmental CSR communication and the mediator brand credibility. The output of this simple regression can be found in Appendix X. Table 15 shows that the exposure to environmental CSR messages has a negative but insignificant effect on brand credibility. Model 1 provides a r-square of 0.032, meaning that 3.2% of the variance in the scores of brand credibility can be accounted to the variable digital environmental CSR communication.

The second model (M2) analyzes the relation of digital environmental CSR communication and the mediator perceived environmental concern. The SPSS output can be found in Appendix XI. Following table 15, the exposure to environmental CSR has a significant positive effect on perceived environmental concern, with 8.1% of the variance in the scores on perceived environmental concern being explained by digital environmental CSR communication.

Model 3 (M3) analyzes the main effect of digital environmental CSR communication on the purchase intention of green products. The output resulting from this simple regression can be found in Appendix XII. As depicted in table 15, there is a significant negative effect of the exposure to environmental CSR messages on the purchase intention of green products, with 6.3% of the variance in the purchase intention of green products being explained by digital environmental CSR communication.

Model 4 (M4) incorporates all variables but excludes the control variables, and analyzes the effect of the independent variable, the mediating and the moderating variables, on the dependent variable. The interaction term of digital environmental CSR communication and environmental concern is constructed with a mean centered product term, to remove possible effects of high correlation between the interaction term and the variables digital environmental CSR communication and environmental concern. It was chosen to only mean center environmental concern since the Hayes Procedure, in which the full model (M5) is analyzed, uses the same approach. Hence, this was done to conduct the different analyses in a uniform matter.

The SPSS output for this model can be found in Appendix XIII. In table 15 it is shown that, first of all, 45.4% of the variance in the dependent variable (purchase intention of green products) is explained by the model. Secondly, the coefficient of CSR communication changed due to the introduction of multiple variables in the model. This resulted in a more negative and more significant effect of environmental CSR communication on purchase intention.

The full model (M5) constructed from the output of the PROCESS Macro, which can be found in Appendix XIV, is depicted in figure 10 below. The figure displays the path coefficients between the dependent variable, mediators and moderators. The control variables are not displayed in this figure.

The model summary gives $F(8, 61) = 14.468$, $p < 0.001$, $R^2 = 0.655$. This can be seen in table 15, and Appendix XIV. The full model with the control variables included as covariates, explains 65.5% of the variance in the purchase intention of green products. As seen in table 15, only the control variable 'Consumer Profile: Habitual or Reluctant consumers' had a significant influence on the purchase intention. Furthermore, all coefficients of the included variables changed, with the relation of the variable 'CSR Communication' and the interaction term of (CSR communication * Environmental concern) becoming more negative with the purchase intention of green products. The coefficient of the mediator perceived environmental concern was slightly more positive.

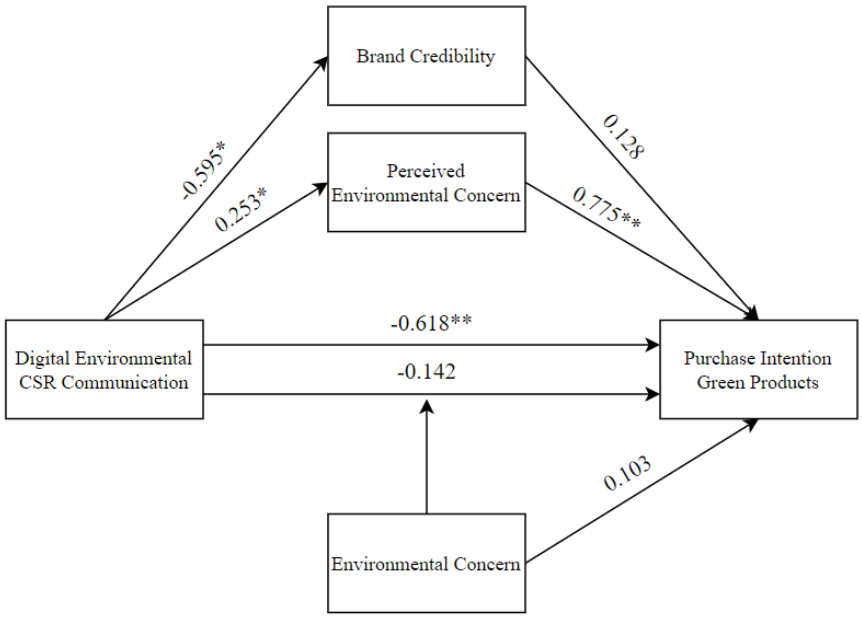

Figure 10. Model and Path Coefficients
*Note: * indicates significance at α = 0.05
*Note: ** indicates significance at α = 0.001

Hypothesis 1 (**H1**)

To test the first hypothesis (**H1**), digital environmental CSR communication positively influences the purchase intention of green products, the main effect of digital environmental CSR communication on the purchase intention of green products is analyzed. As seen in the output of SPSS, see Appendix XIV under outcome variable: purchase (which is the full model), and in figure 10, the main effect gives b = -0.618, t(61) = -4,365, $p < 0.001$. This can be interpreted as a significant negative effect of digital environmental CSR communication on the purchase intention of green products, meaning **H1** is falsified.

Hypothesis 2 (**H2**)

The second hypothesis (**H2**) states that perceived environmental concern mediates the relation between digital environmental CSR communication and the purchase intention for green products. Firstly, to test whether mediation was successful, the influence of the dependent variable (digital environmental CSR communication) on perceived environmental concern is tested. The output resulting from PROCESS Macro for SPSS, displayed in Appendix XIV under outcome variable: Perceive, gave b = 0.253, t(65) = 2.021, $p = 0.047$. Meaning a statistically significant positive relation exists between digital environmental CSR communication and perceived environmental concern.

Secondly, the relation between the mediator (perceived environmental concern) and the independent variable (purchase intention for green products) is tested. This output is shown in Appendix XIV under outcome variable: Purchase, with b = = 0.775, t(61) = 5.08, $p < 0.001$. This also indicates that a statistically significant positive relation exists between perceived environmental concern and the purchase intention for green products.

To find out whether mediation has occurred, the bootstrapping confidence intervals (95%) of the total indirect effect of perceived environmental concern on the purchase intention for green products is used, see Appendix XIV under Direct and Indirect effects. This gives indirect effect = 0.196, with SE = 0.111 and CI[0.019, 0.456]. Since the confidence interval does not include the value of zero, it is

concluded that the indirect effect was significant (Kisbu-Sakarya et al., 2014), and hence mediation occurred.

Hypothesis 3 (**H3**)

The third hypothesis, brand credibility mediates the relation between digital environmental CSR communication and the purchase intention for green products, is subsequently tested using the same method as for **H2**. The output can be found in Appendix XIV under outcome variable: Brand_cr. The relation between digital environmental CSR communication and brand credibility gave b = -.595, t(65) = -2.074, p = 0.042. This indicates a significant negative relation between digital environmental CSR communication and brand credibility.

Secondly, the relation between brand credibility and the purchase intention for green products is analyzed, the generated output is shown in Appendix XIV under outcome variable: Purchase. This gave b = 0.128, t(61) = 1.924, p = 0.059. Indicating a non-significant but positive relation between brand credibility and the purchase intention for green products.

Lastly, the indirect effect, given in Appendix XIV under Direct and Indirect effects, is -0.076 with SE = 0.052 and CI[-0.196, 0.007]. This confidence interval includes the value of zero and hence this effect is considered non-significant, resulting in no mediation. This means **H3** is falsified.

Hypothesis 4 (**H4**)

For the fourth hypothesis, stating that environmental concern positively moderates the relation of digital environmental CSR communication and the purchase intention of green products, the main effects of both independent variables on the dependent variable followed by the interaction effect of the independent variables is analyzed.

Looking at the full model, displayed in Appendix XIV under outcome variable: Purchase, the main effects on the purchase intention of green products are:

- Exposure to CSR message (dummy coded variable of digital environmental CSR

communication); b = -0.618, t(61) = -4.365, p < 0.001

- Environmental Concern; b = 0.103, t(61) = 1.346, p = 0.183.

This means that digital environmental CSR communication is a significant (negative) predictor of the purchase intention of green products, whereas environmental concern is not.

The interaction effect of exposure to CSR message and environmental concern gives, b = -.142, t(61) = -1.389, p = .17. This means that the interaction term between environmental concern and digital environmental CSR communication is non-significant, but negative. The interaction term is more positive than the main effect of digital environmental CSR communication on the purchase intention of green products, indicating that environmental concern possibly influences this relation. However, since no moderation occurred, **H4** is falsified.

Control Variables

In this paragraph, the influence of the control variables on the constructs of perceived environmental concern, brand credibility and the purchase intention of green products is tested. Figure 11, 12 and 13 display the path coefficients of the control variables 'Consumer Profile: Habitual or reluctant consumers', 'Age' and 'Gender'.

Consumer Profile: Habitual or reluctant consumers

As seen in figure 11, consumer profile has a significant effect on only the dependent variable (Purchase intention).

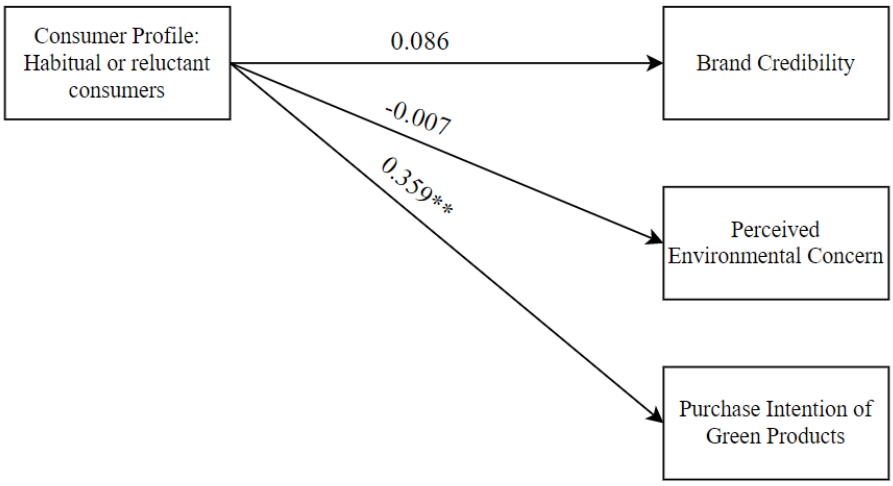

Figure 11. Path Coefficients of Consumer Profile
*Note: * indicates significance at α = 0.05
*Note: ** indicates significance at α = 0.001

The SPSS output, seen in Appendix XIV, provides as values for the relation between Consumer Profile and;

- Brand Credibility; b = 0.086, t(65) = 0.548, p = 0.586
- Perceived Environmental Concern; b = -0.007, t(65) = -0.102, p = 0.919
- Purchase Intention of Green Products; b = 0.359, t(61) = 4.817, p < 0.001

This indicates that the control variable does not influence the mediating variables in the model, but does significantly influence the purchase intention of green products. The control variable is coded that a higher score represents a more habitual consumer of green products (see scales in table 9). This means that more habitual consumers are more willing to buy green products.

Age

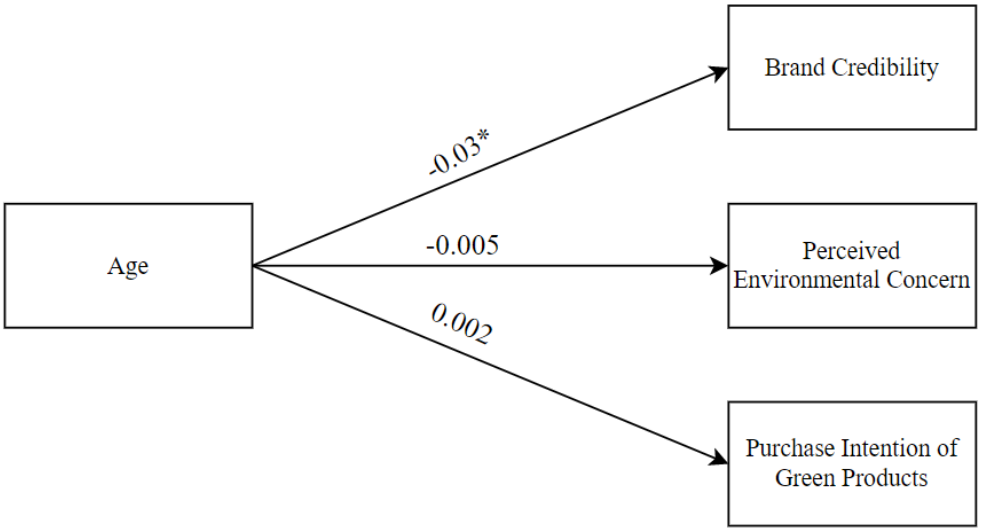

Figure 12. Path Coefficients of Age
*Note: * indicates significance at α = 0.05
*Note: ** indicates significance at α = 0.001

Figure 12 above, displays the path coefficients and their significance of Age on the aforementioned variables. The output, seen in Appendix XIV, provides as values for the relation between Age and;

- Brand Credibility; b = -0.03, t(65) = -3.182, p = 0.002
- Perceived Environmental Concern; b = -0.005, t(65) = -1.231, p = 0.223
- Purchase Intention of Green Products; b = 0.002, t(61) = 0.453, p = 0.652

Here, Age only has a small but significant negative effect on Brand Credibility. Meaning that a higher score on Age results in a lower score for Brand Credibility.

Gender

As figure 13 presents, Gender had no significant influence on any of these variables.

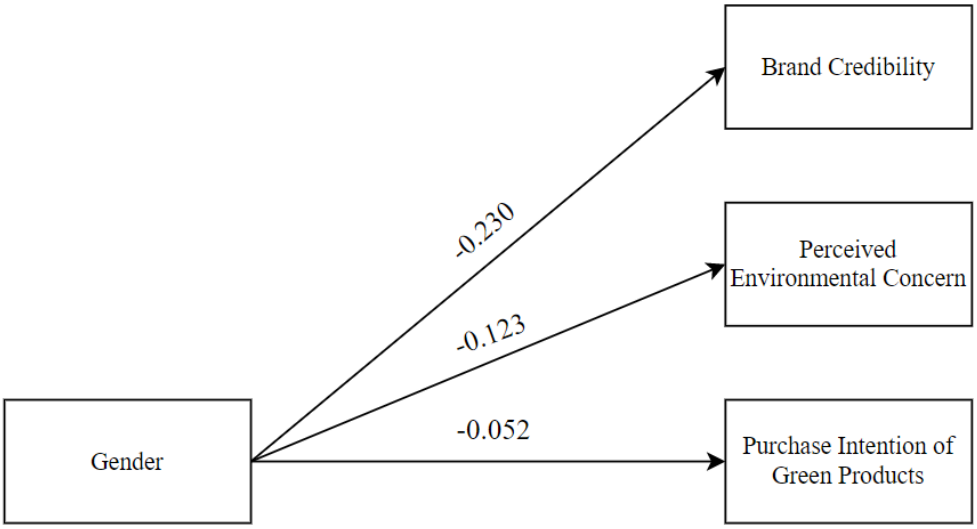

Figure 13. Path Coefficients of Gender
*Note: * indicates significance at α = 0.05
*Note: ** indicates significance at α = 0.001

The output (Appendix XIV) provides as values for the relation between Gender and;

- Brand Credibility; b = -0.230, t(65) = -0.759, p = 0.451

- Perceived Environmental Concern; b = -0.123, t(65) = -0.930, p = 0.356

- Purchase Intention of Green Products; b = -0.052, t(61) = -0.386, p = 0.701

Discussion

Organizations increasingly communicate corporate social responsibility via social media (Hayes and Carr, 2021), and aim to show their contributions to society and to differentiate their products as socially or environmentally sustainable (Hayes and Carr, 2021; Orazi and Chan, 2020). These sustainable or green products are essential in reducing the environmental impact that production-consumption systems pose on our planet. However, the consumption of these sustainable products is still too low to make a significant impact (Sheth et al., 2011). This study investigated whether the communication of CSR on social media influences consumers' intention to buy green products. This was done by incorporating the variables perceived environmental concern and brand credibility as mediators, and environmental concern as a moderator. To check whether the communication of CSR messages did influence the purchase intention of green products, respondents were randomized in a control or manipulated group. The data of the survey was collected by making use of the author's personal network.

Following the results, it was found that the group that was exposed to digital CSR messages (manipulated group) scored significantly lower on the construct of purchase intention of green products. It is possible that the communication of environmental CSR in itself does not lead to a higher purchase intention, but rather impacts brand reputation. However, even if this result was counterintuitive, there are some possible explanations for this peculiar result. It could be that consumers do not use CSR as a purchase criterion, as indicated by Mohr et al. (2001), since they haven't given any or too little thought about environmental issues.

Secondly, two groups were created, a control group which received messages that were commercially written, with no links to environmental activities or sustainable products. The second group (the manipulated group) received messages that stated information about environmental activities, issues and the sustainable aspects of the product. Both groups did see two identical messages, relating to the product offering. Since these are two extremes, i.e. zero CSR messages and only CSR messages, it is possible that this has some unforeseen implications. Firstly, a possible explanation of the results can lie in the fact that in the study's design, it was chosen to use an unfamiliar brand so that past experiences or

attitudes towards a brand were eliminated. Since an unfamiliar brand is used, it is possible that consumers have little trust in the brand. For unknown SMEs corporate trust is critical to convince consumers to purchase their products, and it is found that corporate trust has a significant impact on purchase intentions (Kang and Park, 2018). Furthermore, Kang and Park (2018) describe that the impact of trust building through social media may be small, meaning that the low score on purchase intention can possibly be explained due to a low consumer trust in the organization or brand.

Another possible explanation can be found in green skepticism among the participants. Since the manipulated group was exposed to only CSR messages (besides the product offering), negative responses to potentially misleading or false green claims of the CSR messages could have occurred. It has been found that green skepticism negatively influences consumers' purchase intention of green products (Goh and Balaji, 2016; Sheth et al., 2011). The significant negative relation could therefore be a consequence of participants' past experiences with greenwashing activities of firms. Because profit maximization is considered to be sole reason for corporations to exist, people do not perceive CSR practices as sincere and question the real motives for CSR practices (Kim and Rim, 2019), and hence only reading about CSR messages (activities, issues and sustainability) can possible have negatively influenced the purchase intention of green products.

The results on brand credibility, can be seen as a confirmation of this possible explanation. Brand credibility refers to consumers' confidence in a firm's product claims (Erdem and Swait, 1998), and the control group scored higher on this construct than the manipulated group. This means that the control group had more confidence in the brand than the manipulated group, even though the control group did not receive information on the significance of the green products, or the constituents of their products (i.e. what makes them green/sustainable). Brand credibility was not found to be a mediator in the relation between digital environmental CSR communication and the purchase intention of green products. Besides the lower scores on brand credibility for the manipulated group, the bivariate correlations that are shown in table 10 also indicate a significant correlation between perceived environmental concern and brand credibility. This finding indicates that there is a possible relationship between these two constructs which has not been specified in the model, and which could have impacted

the mediation and/or the influence of brand credibility.

Furthermore, it is also possible that the CSR messages were perceived as advertising and public relations approaches, and as indicated by Boyd et al. (2016), this works against firms since this leads to a focus on negative moralizations of firms, resulting in a lower score on brand credibility and possibly the purchase intention. Age had a significant negative influence on brand credibility. This means that an older person perceived the brand as less credible. This could be due to the nature of social media, and since this is a relatively recent phenomenon, older persons could find online brands or digital communications less trustworthy and hence less credible.

Following the hypothesis (**H2**), the results indicate that perceived environmental concern does mediate the relation between digital environmental CSR communication and the purchase intention of green products. Digital environmental CSR communication did significantly influence the perceived environmental concern, meaning that the CSR messages did influence the perception that SCENT is genuinely trying to be environmentally responsible. So the communication of environmental CSR messages via social media can positively influence a firm's image. The relation between perceived environmental concern and the purchase intention of green products was also significantly positive. This means that even though digital environmental CSR communication has a significant negative relation with the purchase intention of green products, the communication of environmental CSR does positively influence the perceived environmental concern of the firm which leads to a higher purchase intention of their green products. This could indicate that by communicating environmental CSR companies can improve their corporate image, and that this higher perceived environmental concern positively contributes to consumers' purchase intention. But since the relation between digital environmental CSR communication and the purchase intention of green products is negative, this could indicate that there are more variables and/or relationships at play then those who are incorporated in the model.

Environmental concern is seen as a strong antecedent of attitudes towards green products and the willingness to purchase green products (Jaiswal and Kant, 2018; Goh and Balaji, 2016). However, the results indicate a non-significant positive direct effect of environmental concern on the purchase intention of green products and a non-significant negative interaction effect of digital environmental

CSR communication*environmental concern on the purchase intention of green products. As this is a contradictory finding, and Goh and Balaji (2016) state that there are contradictory findings in the literature for the influence of environmental concern on the purchase intention, it is argued that future research should look into when environmental concern can be a predictor of purchase intention in the context of social media.

Implications

Even though useful information for practice resulting from the outcome of the analysis is limited, some practical implications can be made. First of all, organizations when communicating via social media should not solely focus on environmental CSR messages. This could lead to more consumer distrust of their environmental activities and/or products, and negatively influence consumers' purchase intention. These communications should not resemble advertisements or public relation approaches, as this leads to a focus on negative moralizations of firms (Boyd et al., 2016).

The communication of environmental CSR via social media does positively influence the perception that firms are genuinely concerned with the environment, so for reputation and image building the communication of environmental CSR via social media can be fruitful. The results show that an increase in perceived environmental concern also leads to a higher purchase intention, which could indicate that digital environmental CSR communication can influence purchase intentions via a better perception of the companies intentions.

For firm-generated content (FGC), as was the focus of this study design, message design is crucial. Besides the structural features within messages, the message should be designed for the firms' target audience. The results indicate a significant effect of age on the brand credibility, possibly meaning that online communications and brands are less trusted when a person is of older age. This could indicate that other channels are better suited to target this group, or that unknown brands that are only present online are less trusted. Furthermore, consumers that are habitual buyers of green or sustainable products also have a higher purchase intention of green products. Even though this may sound logical, remember that the participants were unfamiliar with the brand. So by communicating environmental CSR via social

media, this group is more likely to purchase green products. If one knows that his/her audience is reluctant to buy such products, the communication of environmental CSR will lead to negative reactions, since reluctant consumers focus on personal well-being through consumption and green products provide value to others (Medina et al., 2021). Thus, as Medina et al. (2021) state "The profitability of efforts to communicate CSR depends on properly identifying the segment of consumers who recognize value and reward in these initiatives" (p.107).

Limitations and Future Research

This study presents some limitations to its findings. First of all, the use of a fabricated organization (SCENT) in the study design removed pre-existing attitudes about a brand which could bias the results. However, this study did not incorporate the influence of already-held attitudes, which also could taint the results. These pre-existing attitudes can have more impact than CSR communication or third-party statements in the context of social media (Hayes and Carr, 2021). Following Hayes and Carr (2021), future research could investigate how existing attitudes are influenced, rather than the formation of attitudes, by CSR messages.

Since the groups were manipulated based on static images of Facebook messages, it is possible that the act of scrolling down a real Facebook-brand page could infer different results. This would mean that instead of only seeing a static image, participants can interact with Facebook posts. Moreover, the study did not incorporate the influence of comments and likes in its study design. To further advance research in this topic, these variables and their interactions should be taken into account to generate a good overview. Since the content available on social media can be divided into user-generated content (UGC) and firm-generated content (FGC), the influence of social media marketing on certain behavioral outcomes and attitude formation is the interplay of both types of content. However, since this study focused on FGC, by not taken the effects of liking and comments into account, its results are not generalizable for the effectiveness of social media marketing in communicating environmental CSR, but rather for the effectiveness of FGC content on social media in communicating environmental CSR.

Another aspect that was not taken into consideration in the experimental design was the influence of images on the attitude formation of consumers. Since Facebook is used to communicate with users through text-based posts, pictures, videos and chats (Pelletier et al., 2020), it is useful to know in what context certain kinds of images elicit different consumer responses. It is found that image symmetry and a higher image contrast results in greater consumer engagement and liking on social media (Kostyk and Huhmann, 2021). When selecting images for content creation, such image properties should be taken into account. Furthermore, CSR communications need to be in line with the core business activities of

a company (Conte et al, 2018). As for CSR communication via social media, this means that message design should also be congruent with the core business activities. It is therefore useful to know if a certain type of image (people, planet, etc.) specifically benefits one or more CSR dimensions or if the usage of such images could evoke different consumer responses.

Additionally, another limitation of the experimental design pertains to the treatment of the groups. First of all, due to time and resource constraints, it was not possible to create more groups. If multiple groups were created where the number of environmental CSR messages differed, the effect of digital environmental CSR communication on the variables would become more apparent. Since the two groups that are present in this study represented the extremes (i.e. zero CSR messages or all CSR messages), it could be that a mix of environmental CSR and commercially written messages could elicit different responses. Future research should therefore look into the influence of the number of CSR messages on a certain behavioral outcome, such as purchase intention.

Secondly, the effect of the structural features was not taken into account. Initially, the experimental design incorporated the effect of structural features, but as mentioned before, time and resource constraints made this a difficult endeavor. For this to be possible, more groups should be created where the influence of one structural feature (or all), are analyzed.

As mentioned in the discussion chapter, the mediation of brand credibility was not successful, which could be the result of its correlation with the other mediator, perceived environmental concern. Future research should investigate if a relationship exists between those variables or if another variable caused the correlation.

As this study tried to find out if environmental CSR communication resulted in a higher purchase intention, it tried to aid in the call of Medina et al. (2021), who argue that future research should focus on different CSR initiatives. Much more can be investigated on environmental CSR communication, however future research should also investigate the other multiple dimensions of CSR, as given by Sarkar and Searcy (2016): Economic, Ethical, Social, Stakeholders, Sustainability and Discretionary. By creating an overview of the variables that influence and are influenced by the multiple dimensions of CSR, the knowledge generation in the field of CSR and its communication can be accelerated. For

example, perceived environmental concern could be of bigger importance and have different behavioral outcomes for an environmental friendly brand than for a brand focusing on equality in society. The design of content, the usage of certain structural features, the usage of certain images, etc. could also have different implications for different dimensions of CSR.

Another meaningful avenue for research could be the influence of environmental concern on behavioral outcomes. Since the literature poses that environmental concern is considered a strong antecedent for purchase intentions (Jaiswal and Kant, 2018; Goh and Balaji, 2016), it was expected that environmental concern also positively moderated the relation between digital environmental CSR communication and the purchase intention of green products, but the results indicated otherwise. This could be the result of a problem related to the sample (addressed next), or because of the exposure to only CSR messages in combination with environmentally concerned consumers lead to a negative reaction, because of non-included variables (e.g. trust or high amount of knowledge on environmental issues).

Lastly, one of the main limitations of this study is the population in which the survey was conducted. Since the study made use of a personal network, it is possible that the questions are not answered correctly. After spreading the survey, it was commented that the questions themselves were constructed on a "too difficult level of English". This problem occurred, because the sample's population are mostly native Dutch speakers and the scales were selected from published papers. Therefore, if translated, this could also lead to reliability and validity issues. Future research could use the same study design, but should select a more representative population, create more treatment groups and check whether the results of this study are generalizable or an exception.

Appendix I. Systematic Review Method

Table 3. Systematic review method.

Step 1 Determine relevance of the review	• Establish need for systematic review • Search using EBSCOhost and Web of Science for past reviews
Step 2 Definition of temporal boundaries	• Include only articles published from 2010-2021 • Use boundaries of previous reviews and salient events as a basis
Step 3 Definition of the search area	• Develop list of peer-reviewed journals • Identify relevant journals from previously published literature reviews in the field of CSR, Sustainability and Digital Marketing and Social Media Marketing
Step 4 Development of search strings and inclusion/exclusion criteria	• Develop string of keywords • Develop inclusion and exclusion criteria including relevance. Process can be found in figure 2.
Step 5 Choice of database and search mode	• Search using the Web of Science's "Web of Science Core Collection" database and EBSCOhost's "Business Source Elite" database • Limit search to titles and abstracts of the papers
Step 6 Develop article database	• Remove articles that are not relevant
Step 7 Descriptive analysis	• Conduct a descriptive analysis to identify patterns and trends
Step 8 Thematic analysis	• Code entire articles according to CSR, Sustainability and Digital Marketing and Social Media Marketing concepts • Identify core theoretical concepts and primary research themes

Source: Adapted version of Williams et al. (2017)

Appendix II. PRISMA-S Checklist

Table 4. PRISMA-S Checklist

SECTION/TOPIC	ITEM #	CHECKLIST ITEM
INFORMATION SOURCES AND METHODS		
Database name	1	Name each individual database searched, stating the platform for each.
Multi-database searching	2	If databases were searched simultaneously on a single platform, state the name of the platform, listing all of the databases searched.
Study registries	3	List any study registries searched.
Online resources and browsing	4	Describe any online or print source purposefully searched or browsed (e.g., tables of contents, print conference proceedings, web sites), and how this was done.
Citation searching	5	Indicate whether cited references or citing references were examined, and describe any methods used for locating cited/citing references (e.g., browsing reference lists, using a citation index, setting up email alerts for references citing included studies).
Contacts	6	Indicate whether additional studies or data were sought by contacting authors, experts, manufacturers, or others.
Other methods	7	Describe any additional information sources or search methods used.
SEARCH STRATEGIES		
Full search strategies	8	Include the search strategies for each database and information source, copied and pasted exactly as run.
Limits and restrictions	9	Specify that no limits were used, or describe any limits or restrictions applied to a search (e.g., date or time period, language, study design) and provide justification for their use.
Search filters	10	Indicate whether published search filters were used (as originally designed or modified), and if so, cite the filter(s) used.
Prior work	11	Indicate when search strategies from other literature reviews were adapted or reused for a substantive part or all of the search, citing the previous review(s).
Updates	12	Report the methods used to update the search(es) (e.g., rerunning searches, email alerts).
Dates of searches	13	For each search strategy, provide the date when the last search occurred.
PEER REVIEW		
Peer review	14	Describe any search peer review process.
MANAGING RECORDS		
Total records	15	Document the total number of records identified from each database and other information sources.
Deduplication	16	Describe the processes and any software used to deduplicate records from multiple database searches and other information sources.

Source: Rethlefsen et al. (2012)

Appendix III. Research Themes

Table 5. Research Themes

Research Themes	Subthemes	Representative articles
Behavioral	Attitudes and beliefs	Dhaoui, C., Webster, C.M. (2021); Alsaleh, D.A., Elliott, M.T., Fu, F.Q., Thakur, R. (2019); Peltier, J., Dahl, A.J., VanderShee, B.A. (2020); Qin, Y.S. (2020); Sultan, M.T., Sharmin, F., Badulescu, A., Stiubea, E., Xue, K. (2021); Hu, M., Chen, J., Chen, Q.M., He, W. (2020)
	Perception	Park, M., Im, H., Kim, H.Y. (2020); Wheeler, H., Quinn, C. (2017); Godey, B., Manthiou, A., Pederzoli, D., Rokka, J., Aiello, G., Donvito, R., Singh, R. (2016); Choi, E., Ko, E., Kim, A.J. (2016); Eigenraam, A.W., Eelen, J., van Lin, A., Verlegh, P.W.J. (2018); Cuevas, L., Lyu, J., Lim, H. (2021)
	Motivation	Zhu, Y.Q., Chen, H.G.(2015); Grewal, L., Stephen, A.T., Coleman, N.V. (2019); Chahal, H., Rani, A. (2017); Florenthal, B. (2019); Pelletier, M.J., Krallman, A., Adams, F.G., Hancock, T. (2020); Correa, S.C.H., Soares, J.L., Christino, J.M.M., Gosling, M.D., Goncalves, C.A. (2020); Wibowo, A., Chen, S.C., Wiangin, U., Ma, Y., Ruangkanjanases, A. (2021); Rosenthal, B., Brito, E.P.Z. (2017); Aljukhadar, M., Poirier, A.B., Senecal, S. (2020); Garcia-de-Frutos, N., Estrella-Ramon, A. (2021)
	Social factors	Fujita, M., Harrigan, P., Soutar, G.N., Roy, S.K., Roy, R. (2020); Simeone, M., Scarpato, D. (2020); Zollo, L., Filieri, R., Rialti, R., Yoon, S. (2020); Leonhardt, J.M., Pezzuti, T., Namkoong, J.E. (2020)
Brand management or marketing	Brand awareness and image	Pathak, X., Pathak-Shelat, M. (2017): Ibrahim, B., Aljarah, A., Sawaftah, D. (2021);
	Consumer-brand interaction	Sheng, J. (2019); Morra, M.C., Ceruti, F., Chierici, R., Di Gregorio, A. (2018); Gligor, D., Bozkurt, S. (2021)
	Relationship marketing	Clark, M., Black, H.G., Judson, K. (2017); Liu, X., Hu, J., Xu, B. (2017); Wang, Y., Ahmed, S.C., Deng, S.J., Wang, H.Z. (2019); Khan, Z.B., Yang, Y.Z., Shafi, M., Yang, R. (2019); Saxton, G.D., Gomez, L., Ngoh, Z., Lin, Y.P., Dietrich, S. (2019); Chang, Y.T., Yu, H.J., Lu, H.P. (2015); Wang, Z., Kim, H.G. (2017)

Content	Message Design	Barcelos, R.H., Dantas, D.C., Senecal, S. (2018); Han, T.I., Stoel, L. (2017); Lim, H., Childs, M. (2020); Kang, M.Y., Park, B. (2018); Conte, F., Vitale, P., Vollero, A., Siano, A. (2018); Huang, C.C., Liang, W.Y., Lin, S.A.H., Tseng, Z.L., Wang, Y.H., Wu, K.H. (2020); Lee, K., Oh, W.Y., Kim, N. (2013); Grigsby, J.L., Mellema, H.N. (2020); Park, B., Kang, M.Y., Lee, J. (2020)
	User-generated content (UGC)	Roma, P., Aloini, D. (2019); Smith, A.N., Fischer, E., Chen, Y.J. (2012); Halliday, S.V. (2016); Vo, T.T., Xiao, X.N., Ho, S.Y. (2019);
	Firm-generated content (FGC)	Ho, J., Pang, C., Choy, C. (2020); Reilly, A.H., Hynan, K.A. (2014); Kumar, A., Bezawada, R., Rishika, R., Janakiraman, R., Kannan, P.K. (2016); van Laer, T., Feiereisen, S., Visconti, L.M. (2019)
CSR	Communication	Boyd, D.E., McGarry, B.M., Clarke, T.B. (2016); Okazaki, S., Plangger, K., West, D., Menendez, H.D. (2020); Jacob, A., Teuteberg, F. (2021); Ahmad, N., Naveed, R.T., Scholz, M., Irfan, M., Usman, M., Ahmad, I. (2021)
Firm performance	Consumer equity	Kim, A.J., Ko, E. (2012); Yadav, M.S., de Valck, K., Hennig-Thurau, T., Hoffman, D.L., Spann, M. (2013)
Green Marketing	Sustainability awareness	Sogari, G., Pucci, T., Aquilani, B., Zanni, L. (2017)
Strategy	Development	Gong, S.Y., Zhang, J.J., Zhao, P., Jiang, X.P. (2017); Rahman, R.U., Shah, S.M.A., El-Gohary, H., Abbas, M., Khalil, S.H., Al Altheeb, S., Sultan, F. (2020); Bojanowska, A., Kulisz, M. (2020); Tiago, M.T.P.M.B., Verissimo, J.M.C. (2014); Lin, H.C., Bruning, P.F., Swarna, H. (2018); Lindsey-Mullikin, J., Bonin, N. (2017); Campbell, C., Farrell, J.R. (2020); Saboo, A.R., Kumar, V., Ramani, G. (2016); Felix, R., Rauschnabel, P.A., Hinsch, C. (2017); Arora, A.S., Sivakumar, K., Pavlou, P.A. (2021); Schulze, C., Scholer, L., Skiera, B. (2014); Khan, A.A., Wang, M.Z., Ehsan, S., Nurunnabi, M., Hashmi, M.H. (2019)
	Implementation	Olson, E.M., Olson, K.M., Czaplewski, A.J., Key, T.M. (2021); Kucharska, W. (2019)

Appendix IV. Core Concepts

Table 6. Core Concepts

Definition	Description
Engagement A commonly used definition of engagement is the one of Brodi et al. (2011, p. 259): "*specific interactive experiences are an indispensable component of a customer's particular engaged state" and that these interactions take place between a specific "engagement subject" (e.g. consumer) and "engagement object" (e.g. brand or product)*. Defined by Facebook as "*the percentage of unique people who clicked on, liked, commented on or shared a post, divided by the total number of unique people who saw that post*" (Facebook Business, 2013).	Includes affective, cognitive and behavioral engagement (Peltier et al., 2020, Correa et al., 2020). Chahal and Rani (2017) describe it as a bi-dimensional construct, consisting of personal and information interest as dimensions, with engagement being influenced by social and consumer-based factors. Eigenraam et al. (2018) go further and categorized consumer digital engagement practices into five types: (1) for fun, (2) for learning, (3) for giving feedback to a brand, and practices where customers (4) talk about a brand, or (5) work for a brand. They found that "*consumers' motivational brand engagement states, age and online media use were related differently to their willingness to engage in each of the five types of digital engagement practices*" (p. 113). Engagement on social media: - Increases awareness of responsible environmental behavior (Sultan et al., 2020) - Impacts customer-based brand equity (Chahal and Rani, 2017; Correa et al., 2020; Rosenthal and Brito, 2017) - In the case of luxury fashion brands, a high level of engagement can lead to lower value perceptions (Park et al., 2020) - Seeing other users demonstrate engagement behavior leads to institutional identification (Fujita et al., 2020)
Brand Communities Zollo et al. (2020) refer to the definition of Baldus et al. (2015), and wrote that "*An online brand community is defined as an aggregation of self-selected people who share similar interests and communicate with each other about a brand through computer-mediated communications*" (p.256). Another definition was encountered in a paper by Kucharska (2019, p. 438), "*Online communities are groups of internet users who interact regularly and maintain their relationships via computer-mediated communication technologies such as online discussion boards, web blogs, and social media*" (Alhaj and Rokne, 2014).	Social media brand communities are increasingly used by consumers for information gathering on brands and purchase decisions (Zollo et al., 2020), and as a tool to achieve life goals (Halliday, 2016). Engaging with virtual brand communities leads to certain behavioral outcomes, such as consumers' perception of the brand, their association with the brand, loyalty outcomes, brand satisfaction. (Pathak and Pathak-Shelat, 2017; Clark et al., 2017) Brands then can use this to gather information such as common interest, expectations and behavior to target the consumer base (Pathak and Pathak-Shelat, 2017). Kucharska mentions Porter et al. (2013), as they provided a classification of online communities in customer-initiated and firm-initiated communities. These two sources offer different benefits.
Consumer-based Brand Equity (CBBE) Zollo et al. (2020) refer to Aaker's (1991, p. 15) definition of brand equity, and is defined as "*brand*	Morra et al. (2018) state that "brand equity in fact, represents the output of the efforts invested by the firms in the creation of a set of symbolic and emotional

assets and liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm and/or to that firm's customers". Furthermore, they describe consumer-based brand equity (CBBE) as a way to understand brand equity from the perspective of the consumer, indicating the extensiveness of consumers' attachment, their loyalty and awareness of admired brands, following Yoo and Donthu (2001). Gligor and Bozkurt (2021, p. 4) follow Machado et al. (2019), and define CBBE as "*the extent to which customers prefer to buy the products of a brand, although other brands offer comparable products*".	associations around the brand" (p. 3). Chahal and Rani (2017) found that social and consumer-based factors "*significantly impact all the four dimensions of customer-based brand equity, that is, brand awareness, brand image, perceived quality and brand loyalty*" (p. 329). Godey et al. (2016) use Keller's (1993) model of brand equity, which consists out of two dimensions, namely brand awareness and image. Here the difference between consumer-based brand equity (CBBE) and brand equity becomes apparent. Stronger/higher brand equity contributes to: - Increased brand preference (Godey et al., 2016; Zollo et al., 2020 - Willingness to pay a premium price (Morra et al., 2018; Godey et al., 2016). - Increased loyalty (Godey et al, 2016; Morra et al., 2018) - Higher profit margins (Morra et al., 2018) - Purchase intention (Zollo et al., 2020) - Future purchase/repurchase behavior (Godey et al., 2016; Morra et al., 2018) - Higher stock returns (Zollo et al., 2020)
Social Media Marketing Activities (SMMA) Ibrahim et al. (2021) refer to a meta-analysis article of Ibrahim et al. (2020) that viewed social media marketing activities (SMMA) as "*promotional and relational communication tools that complement organizational marketing strategies application by offering enhanced interactivity through online relationships between organizations and consumers*" (p. 5)	Social media enables brands and customers to communicate without restrictions based on time, location and medium, changing communications to interactive, two-way direct communication (Kim and Ko, 2012). In this way, creating new consumer-brand interactions where, "*brands and customers are working together to create new products, services, business models, and values*" (Kim and Ko, 2012, p. 1480). Kim and Ko (2012) describe five dimensions of social media marketing activities of luxury fashion brands, including: entertainment, interaction, trendiness, customization, and word of mouth (WOM). Zollo et al. (2020) goes further and extends this to five main dimensions of social media marketing efforts. Khan et al. (2019) propose two new attributes, fundamental social media marketing activities (FSMMAs) and sophisticated social media marketing activities (SSMMAs), and argues that both sets should be considered entirely when planning SMM strategies. With FSMMAs consisting of likes, followers and viewers, and SSMMAs consisting of interactions, sharing and trendiness. Social media marketing activities contribute as effective marketing communication methods by: - Improving customer equity drivers (Kim and Ko 2012; Ibrahim et al., 2021 ; Zollo et al. 2020; Godey

	et al., 2016) - Enhancing interactivity (Ibrahim et al., 2020)

Appendix V. Future Research Calls

Table 7. Future Research Questions/ Calls

Research Theme	Authors	Further Research Question/ Calls
Behavioral	- Choi et al. (2016). p.5832	- Future study should examine the potential influence of customer–customer interaction as another type of value co-creation.
	- Chahal and Rani (2017). p. 331	- Investigating how old and young consumers interact with brands via SM can further stimulate theoretical development as well as can furnish potentially valuable strategic opportunities to brand managers.
Brand management or marketing	- Clark et al. (2017). p. 50	- The word-of-mouth stemming from brand communities presents an interesting future research opportunity.
	- Pathak and Pathak-Shelat (2017) p. 33	- A number of studies focusing on a wide range of large and niche communities, different product and business categories, different consumer cultures and different platforms such as Facebook, Twitter, YouTube, Pinterest and Instagram would contribute to building a comprehensive understanding of virtual brand communities and its implication for marketing.
Content	-Smith et al. (2012). p.111	- Work could seek to understand how some of these dimensions relate to consumer meanings derived from the UGC (e.g., how do derived consumer meanings differ when one brand is central vs. when a brand is peripherally included in a constellation of similar brands?).
		- Analysis could consider user's perceptions of their audience across different social media categories and how that might influence what users post.
CSR	- Okazaki et al. (2020) p. 681	- Researchers could also explore other methods of identifying and assessing online CSR dialogs, as well as assessing what is the optimal level of organizational content relevance for niche CSR dialogs.
		- Additionally, they could employ an experimental approach by manipulating the level of relevance and the type of message strategy in online CSR dialogs to assess CSR engagement
		- Also, researchers could evaluate the motivations (or lack thereof) to participate and engage with online CSR dialogs

Firm performance	- Kim and Ko (2012) p. 1485	- Future study should develop effective instrument to measure social media marketing more appropriately. - . With necessity of defining factors driving customer equity of luxury fashion brands pointed out, an accurate equation to measure customer lifetime value of luxury fashion brands is necessary.
Green Marketing	- Bojanowska and Kulisz (2020). p. 17	- New directions for eco-marketing can be distinguished, e.g., innovation in the field of product packaging or marketing communication, such as shock advertising or guerrilla marketing, which could exponentially increase its effectiveness. - The economic aspect of purchasing decisions influenced by eco-marketing activities.
Strategy	- Schulze et al. (2014). p. 14	- Further research should continue to discuss the ethical implications and limitations of (not clearly identifiable) viral marketing in more detail.
	- Felix et al. (2017). p. 124	- Future research should also investigate how other characteristics, such as culture, the type of firm (e.g., B2B vs. B2C), the industry (e.g., financial services vs. advertising agency), company size, or available resources, influence a firm's "ideal position" on each of the dimensions of strategic social media marketing.

Appendix VI. Structural Features

Table 8. Structural Features

Structural Feature	Description
Interactivity	Go and Bortree (2017) present in their article two views of interactivity, the functional and the contingency view. The functional view regards interactivity as a property of a particular medium or communication channel. Within this view, interactivity is linked to an interface's or medium's capacity or ability to provide a platform for dialogues or information exchanges between users and the interface (Sundar et al., 2003). An increase in interactivity then means a greater amount of functions that improve the interaction between users and the interface. The contingency view of interactivity considers interactivity as a property of human-to-human interactions (Go & Bortree, 2017). Rafaeli (1988) gives a working definition of interactivity, in which interactivity is "an expression of the extent that in a given series of communication exchanges, any third (or later) transmission (or message) is related to the degree to which previous exchanges referred to even earlier transmissions" (p. 111). Sundar et al. (2003) further conceptualize this as message-based, in which interactivity is "a process involving users, media, and messages, with an emphasis on how messages relate to one another" (p. 34). Communication is fully interactive when messages in a later stage of the message sequence are dependent on the reaction in earlier information transactions/communications, as well exchanged content (Rafaeli, 1988). For this paper, the contingency view of interactivity is followed, since the functional view pertains the interactivity functions of the medium (in this case Facebook) that is used, and the focus of this paper lies on message-based structural features, within users-to-users interactions, with users being firms and/or consumers on the platform.
Formality	The structural feature 'Formality' describes the use of formal versus informal language in message design. Formality in communication is one of the variables in the style dimension of language variation (Bell, 1984). He describes that variation in language occurs when a speaker or sender designs his/her message to address different audiences. Formal language presents a demonstration of respect, and can increase social distance between sender and receiver (Park et al., 2020). On the other hand, informal language can indicate a wish or desire to develop a closer relationship, implying friendliness and consequently reducing social distance (Kang & Park, 2018; Park et al., 2020). The choice for informal or formal language is as described by Bell (1984) based on the audience that is intended to receive the message, as the choice for (in)formality influences consumers' perceptions.
Immediacy	Immediacy involves the psychological distance and physical distance between a speaker/sender and the audience/receiver (Kang & Park, 2018; Mehrabian, 1971). Mehrabian (1969) defines this as "the extent to which communication behaviors enhance closeness and nonverbal interaction with another" (p. 203). Within one-on-one interactions or physical interactions non-verbal cues are important, such as facial expressions and touching (Mehrabian (1969). These non-verbal cues cannot be taken into account when designing messages that are destined for digital communications, since there is no physical interaction between sender and receiver. However, the choice of language in communications can also indicate closeness to objects or persons, and can be subtle (Mehrabian, 1971). To illustrate this, an example of Mehrabian (1971) (p.114) is used, "I'm writing this paper for those people… versus, I'm writing a paper

for these people…, the closeness implied by ‘these’ instead of ‘those’ reflects a more positive feeling”.

Another way to decrease personal distance is by using emoticons or emoji’s in messages (Kang and Park, 2018).

Physical proximity and nonverbal cues cannot be considered in text communications via digital environments (videos and possibly images can present nonverbal cues). Therefore, greater immediacy for text communications via digital environments is a result of decreasing the psychological distance, by enhancing the perceptual availability of the communicator to the addressee (Mehrabian, 1969).

Appendix VII. Facebook Messages SCENT

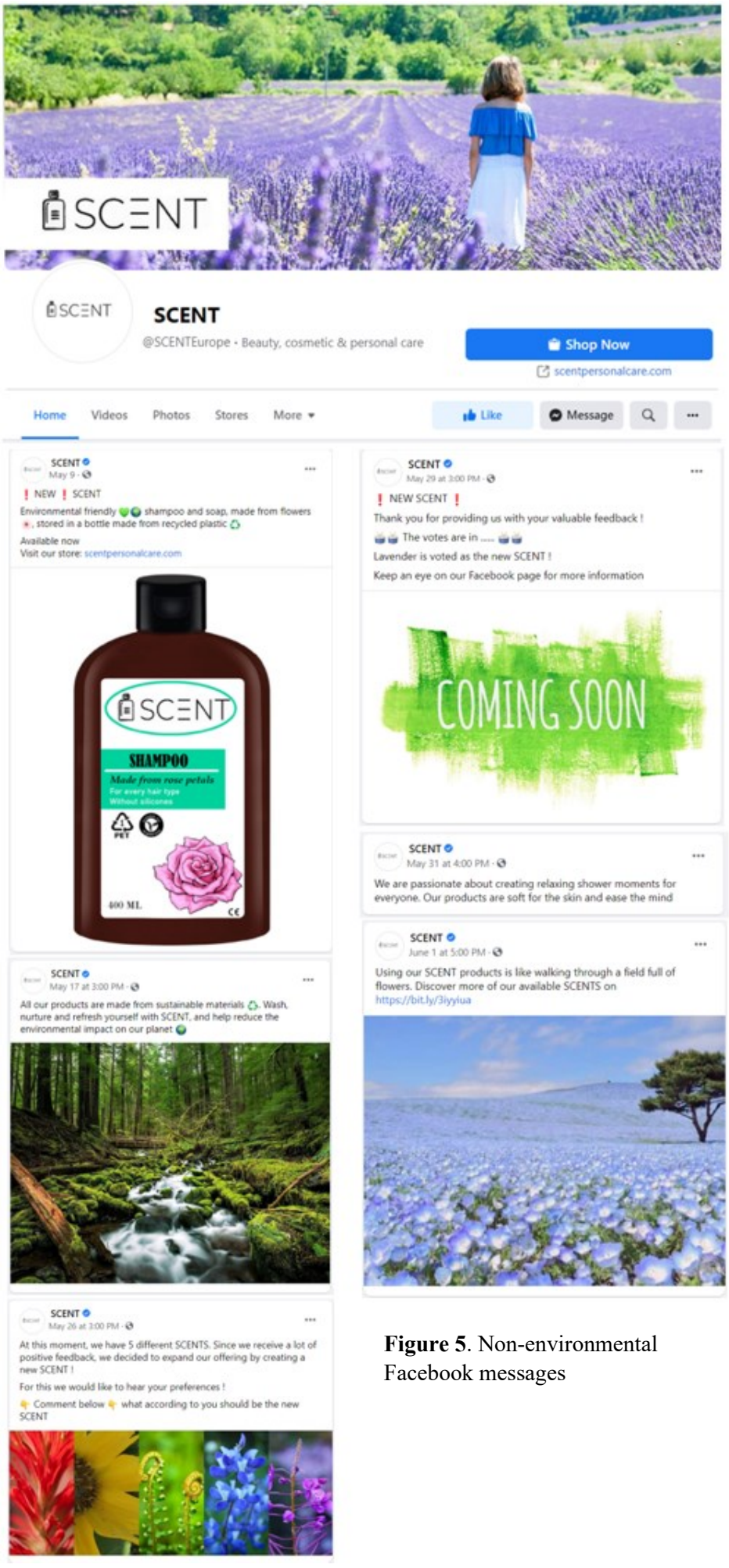

Figure 5. Non-environmental Facebook messages

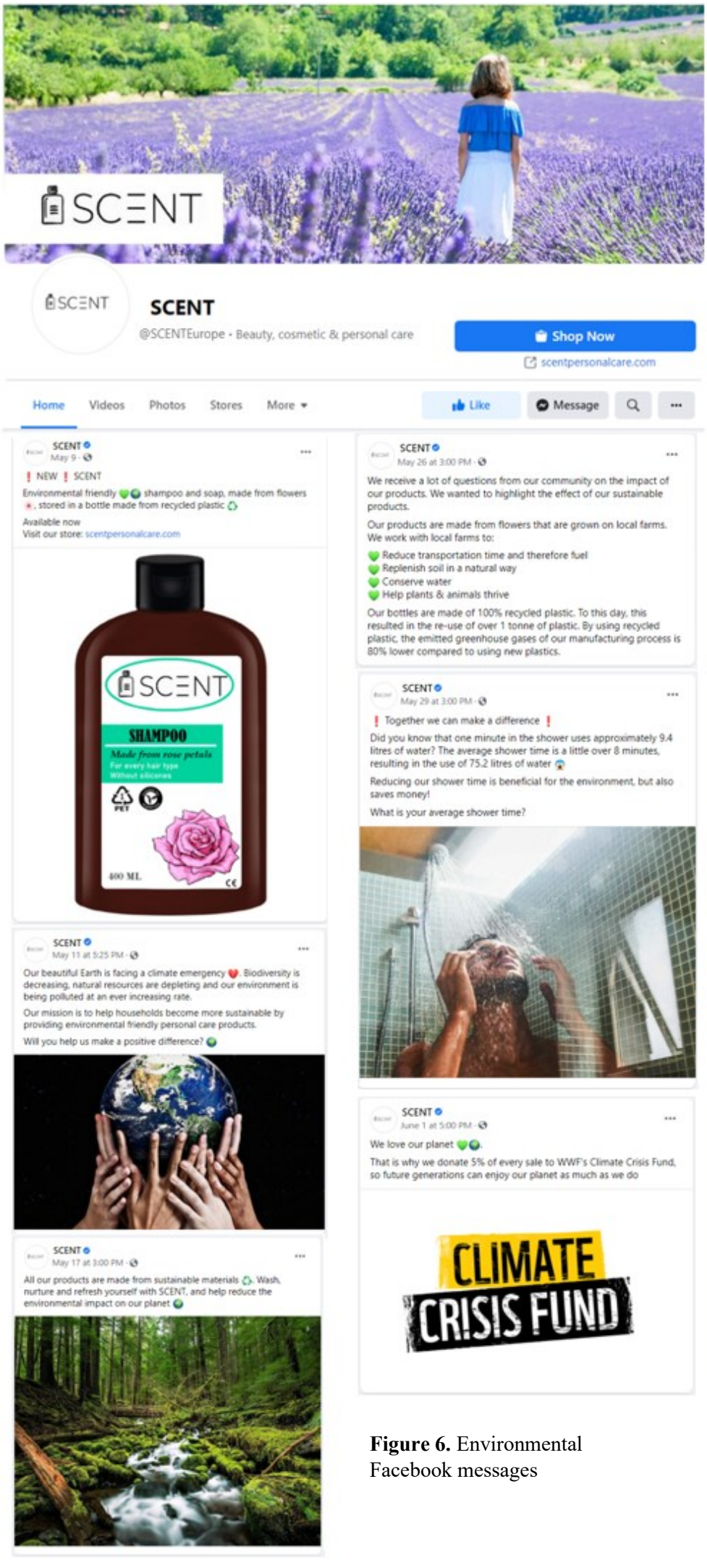

Figure 6. Environmental Facebook messages

Appendix VIII. SPSS Output Descriptives and Correlations of Constructs

Descriptives

Table 16. Descriptives of Constructs

Descriptive Statistics

	N	Mean	Std. Deviation
Age	70	34,9857	16,32149
Environmental Concern construct	70	4,8943	1,25049
Consumer profile construct (control variable)	70	4,7429	1,00909
Brand Credibility Construct	70	5,4286	1,23255
Perceived Environmental Concern construct	70	3,0232	,52098
Purchase intention Construct	70	2,8694	,79064
Gender_Dummy	70	,56	,500
Exposure to CSR message	70	,53	,503
Valid N (listwise)	70		

Correlations

Table 17. Correlations of Constructs

Correlations

		1	2	3	4	5	6	7	8
1.Environmental Concern construct	Pearson Correlation	1	,258*	,058	-,148	-,145	,344**	,132	,133
	Sig. (2-tailed)		,031	,634	,221	,230	,004	,277	,271
	N	70	70	70	70	70	70	70	70
2.Purchase intention Construct	Pearson Correlation	,258*	1	-,251*	,109	-,154	,430**	,490**	,487**
	Sig. (2-tailed)	,031		,036	,369	,204	,000	,000	,000
	N	70	70	70	70	70	70	70	70
3.Exposure to CSR message	Pearson Correlation	,058	-,251*	1	-,101	-,208	,058	-,179	,284*
	Sig. (2-tailed)	,634	,036		,403	,084	,636	,138	,017
	N	70	70	70	70	70	70	70	70
4.Age	Pearson Correlation	-,148	,109	-,101	1	-,196	,390**	-,327**	-,166
	Sig. (2-tailed)	,221	,369	,403		,104	,001	,006	,171
	N	70	70	70	70	70	70	70	70

5.Gender_Dummy	Pearson Correlation	-,145	-,154	-,208	-,196	1	-,334**	,011	-,134
	Sig. (2-tailed)	,230	,204	,084	,104		,005	,925	,270
	N	70	70	70	70	70	70	70	70
6.Consumer profile construct (control variable)	Pearson Correlation	,344**	,430**	,058	,390**	-,334**	1	-,067	-,022
	Sig. (2-tailed)	,004	,000	,636	,001	,005		,579	,858
	N	70	70	70	70	70	70	70	70
7.Brand Credibility Construct	Pearson Correlation	,132	,490**	-,179	-,327**	,011	-,067	1	,527**
	Sig. (2-tailed)	,277	,000	,138	,006	,925	,579		,000
	N	70	70	70	70	70	70	70	70
8.Perceived Environmental Concern construct	Pearson Correlation	,133	,487**	,284*	-,166	-,134	-,022	,527**	1
	Sig. (2-tailed)	,271	,000	,017	,171	,270	,858	,000	
	N	70	70	70	70	70	70	70	70

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix IX. SPSS Output for Descriptives of Groups

Table 18. Descriptives of Groups

Descriptive Statistics

Exposure to CSR message		N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
		Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Control group	Age	33	22,00	69,00	36,7273	16,576110	,614	,409	-1,304	,798
	Environmental Concern construct	33	2,00	7,00	4,8182	1,17512	-,093	,409	-,181	,798
	Consumer profile construct (control variable)	33	1,83	6,00	4,6818	,92079	-1,156	,409	1,698	,798
	Brand Credibility Construct	33	3,80	8,00	5,6606	1,08107	,572	,409	-,117	,798
	Perceived Environmental Concern construct	33	2,13	3,63	2,8674	,41919	-,076	,409	-,718	,798
	Purchase intention Construct	33	1,71	4,14	3,0779	,69261	-,422	,409	-,869	,798
	Gender_Dummy	33	0	1	,67	,479	-,741	,409	-1,548	,798
	Valid N (listwise)	33								
Manipulated group	Age	37	20,00	71,00	33,4324	16,158114	1,140	,388	-,160	,759
	Environmental Concern construct	37	2,20	7,00	4,9622	1,32651	-,227	,388	-,996	,759
	Consumer profile construct (control variable)	37	2,83	7,00	4,7973	1,09159	-,222	,388	-,651	,759

	Brand Credibility Construct	37	2,00	8,00	5,2216	1,33399	-,213	,388	,624	,759
	Perceived Environmental Concern construct	37	1,50	4,38	3,1622	,56739	-,323	,388	1,283	,759
	Purchase intention Construct	37	1,00	4,43	2,6834	,83444	-,080	,388	-,558	,759
	Gender_Dummy	37	0	1	,46	,505	,170	,388	-2,087	,759
	Valid N (listwise)	37								

Appendix X. SPSS Output Simple Regression Model 1

Model Summary (DV: Brand Credibility)

Table 19. Model Summary Model 1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,179[a]	,032	,018	1,22151

a. Predictors: (Constant), Exposure to CSR message

Coefficients

Table 20. Coefficients Model 1

Bootstrap for Coefficients

Model		B	Bootstrap[a] Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval Lower	Upper
1	(Constant)	5,661	,001	,186	,000	5,297	6,037
	Exposure to CSR message	-,439	,000	,286	,133	-1,008	,117

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples

Appendix XI. SPSS Output Simple Regression Model 2

Model Summary (DV: Perceived Environmental Concern)

Table 21. Model Summary Model 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,284[a]	,081	,067	,50312

a. Predictors: (Constant), Exposure to CSR message

Coefficients

Table 22. Coefficients Model 2

Bootstrap for Coefficients

Model		B	Bootstrap[a] Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval Lower	Upper
1	(Constant)	2,867	,001	,073	,000	2,724	3,012
	Exposure to CSR message	,295	-,001	,120	,017	,056	,526

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples

Appendix XII. SPSS Output Simple Regression Model 3

Model Summary (DV: Purchase intention)

Table 23. Model Summary Model 3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,251[a]	,063	,049	,77096

a. Predictors: (Constant), Exposure to CSR message

Coefficients

Table 24. Coefficients Model 3

Bootstrap for Coefficients

Model		B	Bootstrap[a] Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval Lower	Upper
1	(Constant)	3,078	-,001	,118	,000	2,835	3,298
	Exposure to CSR message	-,395	,000	,180	,034	-,740	-,043

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples

Appendix XIII. SPSS Output Simple Regression Model 4

Model Summary (DV: Purchase intention)

Table 25. Model Summary Model 4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,674[a]	,454	,412	,60642

a. Predictors: (Constant), CSRexposure_Envconc_Centered, Exposure to CSR message, Environmental Concern construct, Brand Credibility Construct , Perceived Environmental Concern construct

Coefficients

Table 26. Coefficients Model 4

Bootstrap for Coefficients

Model		B	Bootstrap[a] Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval Lower	Upper
4	(Constant)	-,181	-,017	,453	,684	-1,064	,719
	Exposure to CSR message	-,598	-,006	,163	,001	-,935	-,289
	Environmental Concern construct	,125	,003	,066	,063	,002	,259
	Brand Credibility Construct	,086	,001	,070	,215	-,054	,225
	Perceived Environmental Concern construct	,757	,001	,155	,000	,453	1,067
	CSRexposure_Envconc_Centered	-,012	-,004	,129	,931	-,288	,232

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples

Appendix XIV. PROCESS Macro for SPSS Output (Full Model 5)

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Version 3.5.3 ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 5
    Y  : Purchase
    X  : CSR_Expo
   M1  : Brand_cr
   M2  : Perceive
    W  : Environm

Covariates:
 Consumer Q3_1     Gender_D

Sample
Size:  70

**************************************************************************
OUTCOME VARIABLE:
 Brand_cr

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .4091      .1674     1.3428     3.2664     4.0000    65.0000      .0167

Model
             coeff         se          t          p       LLCI       ULCI
constant    6.5134      .8098     8.0436      .0000     4.8962     8.1306
CSR_Expo    -.5954      .2871    -2.0739      .0421    -1.1688     -.0220
Consumer     .0859      .1568      .5476      .5859     -.2273      .3990
Q3_1        -.0300      .0094    -3.1823      .0022     -.0488     -.0112
Gender_D    -.2303      .3037     -.7585      .4509     -.8368      .3762

**************************************************************************
OUTCOME VARIABLE:
 Perceive

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .3346      .1119      .2559     2.0480     4.0000    65.0000      .0979

Model
             coeff         se          t          p       LLCI       ULCI
constant    3.1683      .3535     8.9630      .0000     2.4623     3.8742
CSR_Expo     .2533      .1253     2.0211      .0474      .0030      .5036
Consumer    -.0070      .0685     -.1019      .9191     -.1437      .1297
Q3_1        -.0051      .0041    -1.2311      .2227     -.0133      .0032
Gender_D    -.1233      .1326     -.9304      .3556     -.3881      .1414

**************************************************************************
OUTCOME VARIABLE:
 Purchase

Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .8092      .6549      .2440    14.4683     8.0000    61.0000      .0000

Model
             coeff         se          t          p       LLCI       ULCI
constant   -1.5850      .5521    -2.8710      .0056    -2.6890     -.4811
CSR_Expo    -.6177      .1415    -4.3648      .0001     -.9007     -.3347
```

```
Brand_cr      .1276      .0663     1.9240      .0590     -.0050      .2602
Perceive      .7752      .1526     5.0797      .0000      .4700     1.0804
Environm      .1030      .0766     1.3458      .1834     -.0501      .2561
Int_1        -.1422      .1024    -1.3891      .1699     -.3469      .0625
Consumer      .3598      .0747     4.8172      .0000      .2104      .5091
Q3_1          .0021      .0046      .4532      .6520     -.0070      .0112
Gender_D     -.0519      .1344     -.3863      .7006     -.3206      .2168

Product terms key:
 Int_1    :        CSR_Expo x        Environm

Test(s) of highest order unconditional interaction(s):
       R2-chng          F        df1        df2          p
X*W      .0109     1.9295     1.0000    61.0000      .1699
----------
    Focal predict: CSR_Expo (X)
          Mod var: Environm (W)

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   CSR_Expo   Environm   Purchase   .
BEGIN DATA.
      .0000    -1.2505     3.0721
     1.0000    -1.2505     2.6323
      .0000      .0000     3.2010
     1.0000      .0000     2.5833
      .0000     1.2505     3.3298
     1.0000     1.2505     2.5343
END DATA.
GRAPH/SCATTERPLOT=
 Environm WITH     Purchase BY       CSR_Expo .

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

Conditional direct effect(s) of X on Y:
   Environm     Effect         se          t          p       LLCI       ULCI
    -1.2505     -.4398      .1826    -2.4093      .0190     -.8049     -.0748
      .0000     -.6177      .1415    -4.3648      .0001     -.9007     -.3347
     1.2505     -.7955      .1988    -4.0025      .0002    -1.1930     -.3981

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
TOTAL         .1204      .1475     -.1398      .4416
Brand_cr     -.0760      .0523     -.1962      .0074
Perceive      .1964      .1105      .0194      .4561

********************** 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: The following variables were mean centered prior to analysis:
          Environm

WARNING: Variables names longer than eight characters can produce incorrect output
when some variables in the data file have the same first eight characters. Shorter
variable names are recommended. By using this output, you are accepting all risk
and consequences of interpreting or reporting results that may be incorrect.

------ END MATRIX -----
```

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