Innovation for Corporate Sustainability in The Fashion Industry: A Stakeholder Approach

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Preface

Before you lies the thesis 'Innovation for Corporate Sustainability in the Fashion Industry: A Stakeholder Approach', where the European fashion industry was scrutinized through conducting a survey and interviews on business model innovation, corporate sustainability and stakeholder collaborations. It is the final project to complete the master specialisation in Innovation and Entrepreneurship at Radboud University. This thesis was written from January 2021 to August 2022.

This thesis originated based on my deeply rooted interest in the fashion industry and the concern about the climate crisis we are facing. In addition, I am always looking to do things differently, more efficiently and effectively, so (personal) innovation is a key part of my life. Putting these aspects together formed the topic of my research. This thesis and the research process were not easy as several personal and research obstacles occurred during the process. Luckily due to great guidance, I was able to complete this process in a way I am very proud of.

I often refer to this thesis as my passion project because the topic lies close to my heart. It has been my dream for years to be working in the fashion industry and contribute to doing better in terms of the environmental and social challenges this industry faces. This thesis enabled me to dive deep into the topic and talk to interesting people from the industry and acquire insights I otherwise would not have.

I would especially like to thank my supervisor Nanne Migchels for the guidance and mental support during this process, as it was not easy from time to time. I lost count of the number of hours I spent talking about life in your office but it always provided me with new energy to move on. Also, a special thanks to my family and close friends because you put up with me when it got difficult and listened to me when it was very much needed. You mean the world to me. Last but not least, I would like to thank all of my respondents and interviewees for taking part in my research because there would not have been a thesis without their valuable input.

I hope you enjoy reading this final passion project of my studies.

Julia Kieftenbeld
Nijmegen, August 2022

Abstract

This research aims to explore the impact of various stakeholder collaborations in the execution and transformation of business model innovation (BMI) into superior sustainability performance. The objective of this research results in the following research question: *What type of stakeholder collaborations are required to translate business model innovation into superior corporate sustainability performance within the fashion industry?* To answer this question, 30 surveys and six semi-structured interviews of 1-2 hours are conducted with individuals employed in management positions within the European fashion industry. The analysis shows that, first of all, BMI is a prerequisite for superior sustainability performance. Customers and suppliers are considered necessary stakeholders for the execution of innovated BMs to achieve superior sustainability performance. The effects for sustainability performance are stronger for smaller fashion brands compared to larger brands. This research concludes that innovated BMs do lead to superior sustainability performance of fashion brands and that collaboration with customers and suppliers is required in this internal transition.

Keywords: business model innovation, business models, corporate sustainability performance, stakeholder collaboration, fashion industry

Content

1. Introduction

The fashion industry is one of the biggest polluting industries in the world due to the industry's take-make-dispose business model (BM), which has detrimental environmental and societal consequences (Morlet et al., 2017). The negative environmental consequences are especially focused on climate change through CO_2 emissions of factories, excessive water use during production, and the use of toxic chemicals in the manufacturing process which ends up in rivers, to name a few (Charpail, 2017). Yet, it does not stop with the industry's environmental impact. The fashion industry also has an enormous negative societal impact through poor working conditions in factories because of, for example, high time pressure, bad salary, and child labour. The local population even encounter worse living conditions through polluted water coming from apparel production (Morlet et al., 2017). If the fashion industry continues conducting business in this direction without considering sustainability, it has destructive consequences and it will fail to meet the Sustainable Development Goals defined by the United Nations and the Paris Climate Agreement (Global Fashion Agenda & Boston Consulting Group, 2019).

A call for sustainability in the fashion industry aligns with the ongoing social and academic discussion on the topic. Research on sustainability started with the publication of the Brundtland Report in 1987 which introduced the term 'sustainable development' and raised even more awareness concerning sustainability. Sustainability is of high importance from an academic point of view because it evokes the need to investigate potential ways of conducting sustainable business, such as innovating for sustainability, since existing research is limited (Bocken et al., 2014). Sustainability requires a new way of conducting business and, consequently an innovated BM. What is known is that BMs are very important tools when it comes to bringing innovations to market (Chesbrough, 2010). Concerning the discussion about innovating for sustainability, the study by Pedersen et al. (2016) argues that BMI leads to better corporate sustainability performance (CSP). Moreover, innovating BMs is proven to be crucial for the sustainable performance of firms because it is an essential factor for corporate sustainability and competitive advantage (Bocken & Geradts, 2020; Porter & Kramer, 2011; Schneider & Spieth, 2013). BMI for enhanced sustainability is successful when the newly developed BM results in a decrease in societal and environmental impact and focuses on creating and capturing value for people and the planet (Geissdoerfer et al., 2018).

Integrating sustainability in business practices requires the involvement of all stakeholders (Stubbs & Cocklin, 2008). Moreover, collaborating with stakeholders is highly important as they support the implementation of sustainability-focused visions (Stubbs &

Cocklin, 2008), which has a significant impact on the sustainable performance of a firm. With regard to stakeholder collaboration, there is a myriad of literature that highlights the impact of collaborating with stakeholders on innovating BMs nowadays. That is to say that the impact of stakeholder collaborations on BMI is widely researched. However, the reversed effect of a newly developed BM on the collaboration with various stakeholders in business processes remains largely undefined by researchers. That is why developing new BMs for superior sustainability performance reveals the need to gain a thorough understanding of the relevance and role of stakeholder collaboration. While it has been researched that stakeholder collaboration is beneficial for BMI and sustainability performance separately (Saebi & Foss, 2015; Salge et al., 2012; Stubbs & Cocklin, 2008), no research has been performed on how specific types of stakeholder collaborations influence the execution and transition of new BMs into superior sustainability performance.

Therefore, this research aims to explore the impact of various stakeholder collaborations in the execution and transformation of BMI into superior sustainability performance. Furthermore, this research also explores if variables such as a fashion brand's size and age control for the outcomes of this research. Therefore, the main question that will be answered in this research is:

What type of stakeholder collaborations are required to translate business model innovation into superior corporate sustainability performance within the fashion industry?

In addition to gaining an understanding of what fashion brands can do to achieve superior sustainability performance, this research has a twofold contribution. First, the theoretical implication of this research is that it contributes to existing BMI and stakeholder collaboration literature. It does so by opening up the black box between BMI and CSP by exploring the impact of stakeholders. This can assist researchers in understanding how the execution of new developed BMs is beneficial for CSP. Furthermore, this research can function as the foundation for future research where other organisational capabilities, besides stakeholder collaboration, are examined in this conceptual framework. Second, the managerial implication of this research is that it functions as a tool for managers and policymakers in the fashion industry in terms of which type of stakeholder collaborations are required to translate BMI into superior corporate sustainability performance. In other words, this research outlines the most beneficial stakeholders to integrate into fashion brands' newly developed BMs to pursue superior sustainability performance and achieve a long-term competitive advantage.

2. Literature Review

2.1. Corporate Sustainability Performance

Sustainability as a concept is around for a long time as Brown et al. (1987) identified that sustainability is becoming a buzzword in research and policy-making. However, the concept of sustainability is understood through multiple frames of reference with a lack of common agreement on the issue (Osorio et al., 2005). Brown et al. (1987) argue that sustainability is either focused on the economic, social or environmental perspective and it is rarely assumed that the perspectives are interdependent. This is confirmed by the study of Baines and Morgan (2004), which primarily focused on the social perspective. In addition, Blengini and Shields (2010) solely emphasized the environmental perspective of sustainability. However, there are studies integrating all three perspectives when studying sustainability (Marcus & Fremeth, 2009). To integrate sustainability into business practices, it is required to combine the environmental and social perspective with the economic perspective which is in accordance with the Triple Bottom Line (TBL) (Goel, 2010; Isil & Hernke, 2017).

The TBL concept came into existence in the late 1990s (Elkington, 1998). The TBL is a concept that is highly intertwined with sustainability and they are continuously connected in research. Moreover, Rogers and Hudson (2011) even indicate the TBL as "the practical framework for sustainability" (p. 4). From this practical point of view, the TBL is frequently used as a measure of a firm's performance based on the three pillars: environment, social, and economic (Goel, 2010). These three pillars of the TBL are interchangeably used with the synonyms planet, people, and profit as defined by Elkington (1998). In contrast to the concept of sustainability, the TBL has a common understanding among researchers. According to Elkington (1998), the TBL goes beyond economic value creation by balancing this with social and environmental value creation. Integrating all three pillars is important and necessary for a holistic approach to assessing the performance of firms (Goel, 2010). Moreover, by sufficiently integrating and managing all three pillars, a firm outperforms others in terms of generating revenues (Goel, 2010).

However, the TBL has received a fair amount of criticism as well. Sustainable development and the TBL can be seen as means to report the sustainability practices of a firm. According to Milne and Gray (2013), these corporate sustainability reports, among other things, carefully select the most favourable facts to report and they disregard the fact that problems in society are caused by the firms' operations. Furthermore, it is argued that sustainability reports

are built on an environmental report including some social issues, however, they do not focus on the actual environmental and social impact a firm causes (Gray, 2000).

Despite the criticism, firms can enhance their sustainable performance by acting on the three pillars of the TBL because the TBL is seen as the equivalent of sustainability (Milne & Gray, 2013). According to Epstein and Roy (2001), the social and environmental sustainable performance of firms can be improved by implementing sustainability-focused strategies accompanied by sufficient programs. Strategies are, for example, improving gender, race, and/or ethnic diversity, and decreasing the emission of greenhouse gasses. Yet, these strategies need to be quantified to measure their impact (Epstein & Roy, 2001). Besides this, firms are motivated to become more sustainable through, among others, establishing high levels of trust among employees, decreasing the generation of waste in the production process, and boosting revenues and firm growth through better performance (Lozano, 2015). Most importantly, corporate management has to carefully consider the consequences of their actions if they are pursuing enhanced sustainability performance and acknowledge that sustainability is not a concept standing on its own, but rather a community-based thinking approach that integrates the environmental, social, and economic aspects (Robinson, 2004). Therefore, corporate sustainability performance (CSP) is, for this research, defined as: *the combined performance of a firm on the three aspects of environmental, social, and economic sustainability.*

2.2. Business Models and Business Model Innovation

The concept of BMs caught great attention since the emergence of the Internet in the 1990s. The majority of BM literature is developed separately in silos and Zott et al. (2011) recognize these silos as three research areas of interest: e-business, strategy, and innovation and technology management. That is why various definitions of BMs emerged in previous research. Amit and Zott (2001) specify a BM as "the design of transaction content, structure, and governance so as to create value through the exploitation of business opportunities" (p. 494/495). Another perspective on BMs is that they are viewed as performative representations (Perkmann & Spicer, 2010), which means that BMs create stories to characterize the firm. Osterwalder et al. (2010) define the BM as "it describes the rationale of how an organization creates, delivers, and captures value" (p. 14). In addition, another definition of BMs is provided by Amit and Zott (2010) who describe it as "the bundle of specific activities that are conducted to satisfy the perceived needs of the market, including the specification of the parties that conduct these activities, and how these activities are linked to each other" (p. 2). These

definitions propose that a BM illustrates how business practices are organised within a firm. For this research, the definition of Amit and Zott (2001) is adopted because this research focuses especially on value creation through exploiting the business opportunity of transactions with external stakeholders.

If a firm wants to adapt to the ever-changing circumstances in its environment, it needs to innovate its BM. This adaptation is referred to as BMI. How BMI is best performed causes dispersion among researchers. Amit and Zott (2010) argue that BMI is best performed when there is a redesign of a firm's activity system. According to Chesbrough (2007), the BM is used as the foundation to perform new business ideas and/or integrate new technologies to innovate the firm. Furthermore, BMI has been found an important tool in volatile business environments because it enables firms to react upon external pressures from competitors and create a competitive advantage (Pohle & Chapman, 2006). BMI can either be driven by external or internal pressures. It is found that the behaviour of external stakeholders, such as competitors and customers are positively influencing the degree of BMI in a firm (Pucihar et al., 2019). From an internal perspective, the innovative activities of a firm are positively driving the degree of BMI (Pucihar et al., 2019). It is argued that BMI results in greater benefits for a firm compared to incremental process and product innovations (Lindgardt et al., 2009).

Even though BMI is largely portrayed as beneficial for firms, it is not easily accomplished. BMI is about value creation and replacing components of an old and inefficient BM (Osterwalder et al. 2010). The BM canvas developed by Osterwalder et al. (2010) is a popular tool in guiding BMI and it includes nine components: customer segments, value proposition, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure. Every component of a BM can be subject to change and, therefore, be affected by BMI. Moreover, BMI becomes complex due to all these components that can be affected by BMI. Chesbrough (2010) found that innovative BMs rarely fully develop because they have to compete with the existing BM and the corresponding arrangement of the firm's assets. That is why innovated BM components are not sufficient enough for BMI, it is also about the execution of the innovated BM with an appropriate strategy.

2.3. Business Model Innovation and Sustainability

The original BM canvas is predominantly focused on economic value creation and because of the significant importance of sustainability, there is a need for sustainable BMI. A tool to connect BMI with sustainability to foster sustainable BMI is the triple layered business model

canvas (TLBMC). It is an extension of the original BM canvas by Osterwalder et al. (2010) and it includes additional social and environmental layers that visualise these impacts (Joyce & Paquin, 2016). This TLBMC aligns with the TBL approach of Elkington (1998), suggesting the integration of social and environmental value creation alongside economic value creation. The main objective of the social layer in the TLBMC is the involvement and management of stakeholders to capture the interaction between various external stakeholder groups and the firm. In addition, this interaction between stakeholder groups and the firm provides an insight into the firm's social impacts and where there is a need to innovate to benefit society (Joyce & Paquin, 2016). The main objective of the environmental layer in TLBMC is the balance between environmental impacts and benefits. This is based on a life cycle assessment approach and provides insight into where to innovate within the BM to benefit the environment (Joyce & Paquin, 2016). This innovation of BMs for sustainability is often seen as complicated because of the multiple stakeholders that need to be involved (Freudenreich et al., 2020) and sustainable BMs include all stakeholder's interests, not just customers or shareholders' interests (Stubbs & Cocklin, 2008).

2.4. Stakeholder Collaboration

Stakeholders are an important component of a sustainable BM (i.e. key partners) and they have a stake in the firm's activities. That is why they capture a significant part of the BM canvas. Since stakeholders play a crucial role in the development of successful and sustainable BMs, this research refers to stakeholder theory. The stakeholder concept dates back to the early 1980s when Freeman was the first to introduce the stakeholder idea. This idea began to take shape because several researchers, including Freeman, aimed to develop a deep understanding of the idea and resolve three interdependent issues occurring in business based on this idea (Parmar et al., 2010). These issues were recognized in the areas of value creation and, thereafter, trade; the connection of ethics and capitalism; and the managerial thinking process (Parmar et al., 2010). Because these issues in business were highly volatile and subject to change, a new approach (i.e. the stakeholder approach) was needed to support management (Freeman & Mcvea, 2001). They developed stakeholder theory, which is built upon the notion that the relationships between distinct parties can influence, or are influenced by business activities (Freeman, as cited in Parmar et al., 2010).

Successful and sustainable BMs are dependent on multiple aspects and collaboration with stakeholders is a significant one. Since sustainable BMs include all stakeholder's interests,

business ecosystems are considered. The literature on business ecosystems argues that value creation and capture through stakeholder collaboration has moved from a bilateral partnership perspective (Teece, 1986) to an ecosystem perspective (Adner & Kapoor, 2010) over the last few decades. To execute their BM, firms increasingly depend on business ecosystems nowadays. According to Moore (1993), a firm is part of a business ecosystem where "companies … work cooperatively and competitively to support new products, satisfy customer needs, and eventually incorporate the next round of innovations" (p. 76). Thus, the business ecosystem can be best described as a dynamic community where diverse interdependent firms and/or bodies influence each other. Stakeholders present in such an ecosystem can be government institutions, suppliers, customers, employees, NGOs, financial institutions, competitors, etc. The business ecosystem paves the way for innovative solutions for a firm's BM because a firm can collaborate with this broad spectrum of BM stakeholders within the ecosystem (Amit & Zott, 2015). This ecosystem perspective encourages firms to go beyond their boundaries to adopt a system perspective (Wei et al., 2014), which makes collaboration with less obvious stakeholders increasingly relevant to create and capture value.

Because sustainability is linked to BMI through the TLBMC, stakeholder collaboration within the ecosystem is relevant in each layer. Prior research highlighted the aspect of collaboration between social stakeholders, such as governments, through realizing sustainability-focused strategies (United Nations, as cited in Thorisdottir & Johannsdottir, 2019). Moreover, according to Climate Focus (2015) governments are required to be the main drivers of collaborations to reduce the environmental footprint since the establishment of the climate agreement in Paris. The importance of the entire business ecosystem for sustainability becomes clear as Bocken et al. (2015) argue that collaboration with a broad group of external stakeholders from all backgrounds is required when in pursuit of sustainability and that sustainability cannot be achieved independently. Therefore, it can be concluded that stakeholder collaboration from a business ecosystem perspective is highly important for sustainable performance. That is why, for this research, stakeholder collaboration is defined as: *the collaboration between a firm and BM stakeholders in the business ecosystem to pursue sustainable performance.*

2.5. Conceptual Framework

2.5.1. Business Model Innovation and Corporate Sustainability Performance

Prior research already confirmed the relationship between BMI and CSP (Pedersen et al., 2016). Both concepts of BMI and CSP highly correspond with each other because both concepts are rooted in the process of change. Pedersen et al. (2016) argued that it requires adjustments in current business operations when firms are in pursuit of sustainability. Therefore, this paper assumes that BMI has a positive influence on CSP.

2.5.2. Stakeholder Collaboration

In recent years, it became clear that firms can integrate external stakeholders to boost the internal innovation process on the condition that they have to change their existing BM towards an open BM first (Chesbrough & Schwartz, 2007; Saebi & Foss, 2015). Saebi and Foss (2015) identified that reorganizing the firm and establishing new knowledge and business practices has a positive effect on the acquisition of knowledge and resources from external stakeholders to innovate the firm. Similarly, when firms aim for open BMs, existing BMs need to be reinvented by integrating open innovation business practices to enable the opportunity to access external stakeholders' knowledge for internal innovation (Salge et al., 2012). Ghezzi et al. (2021) also confirm that BMI precedes having an open BM, which in turn facilitates collaboration with different stakeholders. In other words, BMI for achieving an open BM is required to collaborate with external stakeholders. Although there is some evidence that reorganising a firm's activities towards open BMs and open innovation practices has a positive effect on the acquisition and integration of external stakeholders' knowledge and resources, it has not been explored how BMI directly affects stakeholder collaboration and whether the relationship differs for various stakeholders.

This research assumes a full mediation effect through stakeholder collaboration because the effect of stakeholder collaboration is considered of such significant importance that the original direct effect of BMI on CSP is deemed negligible. The following sections dive deeper into the relationship between BMI and stakeholder collaboration and into the relationship between stakeholder collaboration and CSP. Furthermore, the focus in these sections is on understanding the role of customers, suppliers, NGOs, government, and competitors as the relevant external stakeholders in this research.

2.5.3. Customer Collaboration

Besides the argumentation that BMI for open BMs is necessary to integrate or collaborate with external stakeholders in general, argumentation focused on customers specifically is required to develop a sound hypothesis. Hienerth et al. (2011) exclusively focused on BMs where users were the focal point and they concluded that existing BMs have to be redesigned to integrate the participation of customers in essential business practices. To give an illustration, newly developed BMs based on sharing platforms allow customers to play an essential role in the execution of the BM. Without the customers, sharing platform BMs cannot operate. Customers are valuable stakeholders to collaborate with as they can provide different perspectives and insights decoupled from potential path dependencies present in the firm. Therefore, for firms to improve their business practices and performance, it is beneficial to reinvent the BM to enable collaboration with customers because they can provide new and valuable insights. Hence, this research argues that BMI positively influences customer collaboration.

Customer collaboration for environmental purposes is viewed as a firm being directly involved with its customers to collectively decide on management and business solutions to decrease ecological footprint, waste, or other impacts on the environment (Albino et al., 2012). Furthermore, firms and customers collaborate by sharing knowledge and resources to enhance the environmental performance of firms (Eltayeb et al., 2011). In addition to environmental performance, other aspects are also important as sustainability performance involves the TBL including economic and social performance. By collaborating with customers and satisfying their demands (i.e. new value propositions), the financial performance of a firm can be increased, which is also beneficial for a firm's competitive advantage (Andiç et al., 2012). Customer integration supports the achievement of market success, thus financial firm performance, as involving customers has a high impact on their buying decisions (Koufteros et al., 2010). Moreover, Gelhard and von Delft (2016) found that customer integration is positively related to the sustainability performance of a firm, indicating the direct effect of the proposed relationship. Therefore, integrating customers in a firm's business activities or collaborating with customers has proven to be a positive influence on CSP. As this research assumes full mediation, the following can be hypothesized:

Hypothesis 1. *Business model innovation positively influences customer collaboration (H1a) which in turn positively influences corporate sustainability performance (H1b).*

2.5.4. Supplier Collaboration

According to Grant and Baden-Fuller (2004) and Hung and Chou (2013), open innovation practices enable firms to access technical knowledge from, among others, suppliers which support the firm's internal innovation process and knowledge infrastructure. In other words, firms with an open BM have the opportunity to integrate suppliers or collaborate with suppliers to benefit the firm's innovation processes and its resource base. Therefore, it can be argued that BMs need to be reinvented towards open BMs to reap the benefits of supplier collaboration.

Similarly to customer collaboration, supplier collaboration for environmental purposes is viewed as a firm being directly involved with its suppliers to collectively decide on management and business solutions to decrease ecological footprint, waste, or other impacts on the environment. Besides supplier collaboration, supplier integration has a positive effect on environmentally focused new product development which results in increased environmental and economic performance of a firm (Pujari, 2006). Moreover, Vachon and Klassen (2008) found that supplier collaboration enhances both the environmental and economic performance of a firm which is equivalent to sustainable performance. As full mediation is assumed, the following hypothesis applies:

Hypothesis 2. Business model innovation positively influences supplier collaboration (H2a) which in turn positively influences corporate sustainability performance (H2b).

2.5.5. NGO Collaboration

Literature arguing that newly developed BMs specifically facilitate collaboration with NGOs is very scarce. Yet, Wassmer et al. (2014) indicate that innovation toward open BMs enables collaboration between firms and NGOs, which can benefit a firm's economic, environmental, and social value creation. Therefore, there is evidence that newly developed open BMs facilitate the collaboration between firms and NGOs.

By collaborating with NGOs, firms can access additional and necessary knowledge to address the growing force of society on firms regarding environmental issues (Rondinelli & London, 2003). Moreover, NGO collaboration can support firms in establishing credibility regarding their environmental practices and performance (Albino et al., 2012). Regarding the three pillars of value creation in the TBL, Dahan et al. (2010) found that collaborating with NGOs has a positive effect on the economic and social value creation of a firm. Therefore, it is evident that collaborating with NGOs has a positive influence on CSP as NGOs assist in managing the environmental and social pressures from outside the firm by providing knowledge

or credibility and supporting economic and social value creation. As this study assumes full mediation by NGO collaboration, the following is hypothesized:

Hypothesis 3. *Business model innovation positively influences NGO collaboration (H3a) which in turn positively influences corporate sustainability performance (H3b).*

2.5.6. Government Collaboration

According to Micheli et al. (2012), public institutions such as governments are currently transforming their BMs to allow for collaboration with private companies which supports collaborative innovation initiatives. Consequently, the collaboration between fashion brands and government institutions becomes feasible if fashion brands transform their BMs towards open BMs as well to form a partnership which enables innovation initiatives between public and private sectors. This research suggests that BMI for open BMs is required for collaborating with governments. Therefore, innovating toward open BMs facilitates firm-government collaboration and thereby addresses a network of stakeholders for environmental management.

According to Albino et al. (2012), governments are crucial stakeholders and are important to collaborate with regarding environmental issues. Von Malmborg (2007) argues that firm-government collaboration benefits the formation of environmental-based networks and the development of organisational capabilities addressing environmental issues. Furthermore, Roy and Whelan (1992) go even beyond this and found that government collaboration enables firms to improve their environmental performance. Firm-government collaboration is desired by firms because it enables positive communication to external parties about the firm's environmental approach, next to the fact that this collaboration can reduce governmental demands (Wassmer et al., 2014). In addition, governments have the power to install rules and legislation to influence sustainability in terms of reducing waste stemming from the end of product life cycles (Hart, 1995), which consequently influences the sustainable performance of firms. Therefore, governments are ideal stakeholders to collaborate with regarding the effect it has on the sustainable image perceived by other stakeholders and the actual sustainable performance of a firm. As full mediation is assumed, the following hypothesis applies:

Hypothesis 4. *Business model innovation positively influences government collaboration (H4a) which in turn positively influences corporate sustainability performance (H4b).*

2.5.7. Competitor Collaboration

Literature arguing that BMI specifically facilitates collaboration with competitors is very limited. However, literature on coopetition-based BMs provides evidence for collaboration with competitors. Ritala et al. (2014) argue that coopetition-based BMs enable collaborative partnerships with competitors to create and capture additional value. This research provides evidence for the fact that collaboration between a firm and its competitor does not necessarily have to be impossible as it turned out that collaborating with a competitor can also be beneficial. This, however, does require innovation of the existing BM towards a coopetition-based BM, otherwise, collaboration is not feasible. Therefore, this research argues that firms who innovate their BMs to coopetition-based BMs enable the opportunity for collaboration with a competitor.

Little research has been conducted on competitor collaboration in general, however, Chen et al. (2017) argued after a thorough review of existing literature that integrating competitors is beneficial for sustainability. Moreover, Lu et al. (2014) concluded that the cooperation of competing recycling firms yields a higher quantity of waste being recycled, which has a positive influence on the environment. Competing firms operate in the same market and, therefore, have highly corresponding business practices. These highly corresponding business practices can ensure smooth collaboration as there is not much information asymmetry in terms of market-specific knowledge and resources. By collaborating and sharing the resources and knowledge, both firms are capable of reaching market-specific sustainability goals sooner because they have access to a larger resource base. Therefore, as this research assumes full mediation, the following can be hypothesized:

Hypothesis 5. *Business model innovation positively influences competitor collaboration (H5a) which in turn positively influences corporate sustainability performance (H5b).*

The aforementioned hypotheses make up the following conceptual model:
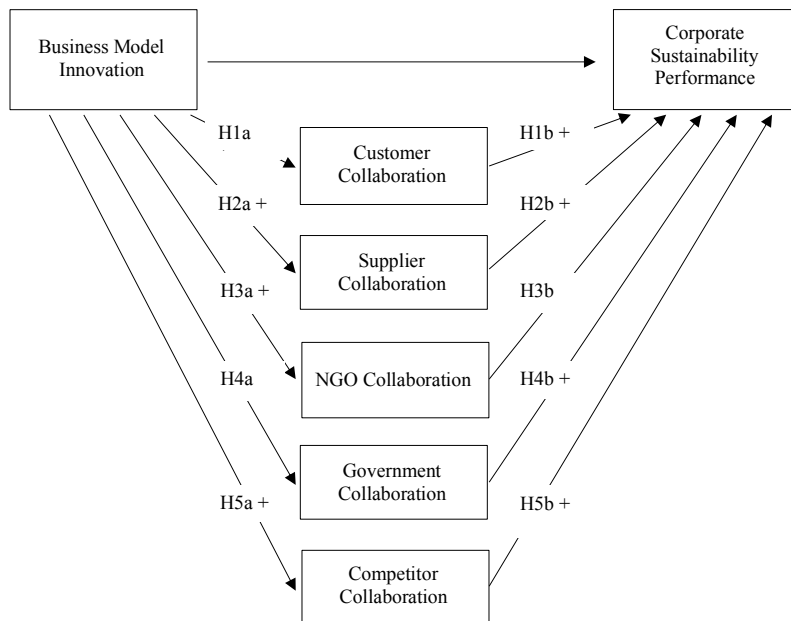

Figure 1.: Conceptual model

3. Methodology

The method chosen is a combination of quantitative and qualitative research. The goal of this research is to explore the impact of various types of stakeholder collaborations in transferring BMI into superior sustainability performance. The reason why a mixed-method research approach is chosen is because it enables the development of a holistic view of a complicated phenomenon through words but also statistical data analyses (Creswell, 1999). Developing relationships with different stakeholders is complex and, therefore, requires multiple frames of reference in terms of research methods that complement each other.

3.1. Quantitative research approach

3.1.1. Data collection

Data sample

Field research was conducted by dispersing a survey to gather data for this research. This research was conducted in Europe and the sample criteria were that participants had to be employed in management positions at European-based fashion companies. A management position was necessary as it was required that the participants had knowledge about the research concepts and the firm. For this research, 'fashion companies' that were approached were either fashion brands that sell garments and/or accessories to the consumer or fashion industry related firms such as fashion trade associations and federations. Based on these inclusion criteria, the sampling technique used to gather participants for the survey was a non-probability sampling method, specifically convenience and snowball sampling (Galloway, 2005). This method was used because the target sample was difficult to access and using networks of leads increases the likelihood of a response. At first, potential participants were contacted through first-degree connections within the researcher's network. Additional participants were then selected through preliminary research on European-based fashion companies on the Internet (i.e. websites of fashion certificates, industry federations, and brands) and through snowball sampling via LinkedIn (i.e. second- and third-degree connections).

The objective was to conduct the survey with 300 participants of European-based fashion companies from March until June 2021. Therefore, 300 potential participants were approached through first- to third-degree connections via email and/or LinkedIn. The survey was conducted online by using Qualtrics and the link was distributed to participants either via email or direct LinkedIn messages. Out of 300 potential participants, 60 participants responded and received the survey link. The participants were offered the possibility to jointly work

through the survey with the researcher via a video call to answer questions and provide guidance if desired. The estimated time to fill in the survey was approximately 10 minutes. Participants could pause the survey and resume at a later time. Participants had to respond before the end of June 2021 and they received a reminder every two weeks after receiving the survey link if the survey was not completed. The survey had to be completed to be considered for data analysis as incomplete or ambiguously answered surveys (i.e. majority of the answers in the "neither agree/neither disagree" category) were excluded from the analysis. After this filtering process, the survey gathered 30 complete responses out of 60, which results in a 50% response rate.

Survey process

The survey was designed based on questions concerning sample demographics, concept-related measurement constructs, and control variables to control for the influence on CSP. The CSP, BMI, and stakeholder collaboration concepts were operationalised through the indicators of measurement constructs developed by previous research. The operationalisation of the core concepts can be found below. The sample demographics and control variables were measured through six open and multiple-choice questions and the core concepts consisted of nine questions that were measured on a 7-point Likert scale, ranging from *strongly disagree* to *strongly agree*. The entire survey can be found in Appendix 1.

The measurement construct to measure CSP is adopted from Gelhard and von Delft (2016). This first-order construct has its foundation in the ability to generate competitive advantage caused by considering a firm's stakeholder demands and simultaneously accounting for social and environmental issues. The indicators of this construct can be found in Table 1.

Table 1

Indicators of Corporate Sustainability Performance

Construct	Indicators
CSP	
	1. We are the first that offer environmental-friendly products/services at the marketplace
	2. Our competitors consider us as a leading company in the field of sustainability
	3. We develop new products/service or improve existing products/services that are regarded sustainable for society and environment
	4. Our reputation in terms of sustainability is better than the sustainability reputation of our competitors
	5. Compared to our competitors, we more thoroughly respond to the societal and ethical demands

Note. Adapted from Gelhard and von Delft, 2016, p. 4640.

The measurement construct used to measure BMI is adopted from Clauss (2017) and is a second-order construct. This construct is developed to measure BMI through ten dimensions and 33 indicators in total. Clauss (2017) distinguished three first-order BMI constructs (value creation innovation, value proposition innovation, and value capture innovation) which are derived from three different measurement scales adapted from different researchers. Therefore, these three first-order BMI constructs are treated as separate measurement scales. Firstly, BMI – value creation innovation construct consists of 13 indicators. Secondly, BMI – value proposition innovation construct also consists of 12 indicators. Lastly, BMI – value capture innovation construct consists of 8 indicators. These three first-order constructs together comprise a second-order construct which determines BMI. The indicators of this construct can be found in Table 2.

Table 2

Indicators of Business Model Innovation

Construct	Dimensions	Indicators
BMI		
Value creation innovation	New capabilities	1. Our employees constantly receive training in order to develop new competences
		2. Relative to our direct competitors, our employees have very up-to-date knowledge and capabilities
		3. We constantly reflect on which new competencies need to be established in order to adapt to changing market requirements
	New technology/equipment	4. We keep the technical resources of our company up-to-date
		5. Relative to our competitors our technical equipment is very innovative
		6. We regularly utilize new technical opportunities in order to extend our product and service portfolio
	New partnerships	7. We are constantly searching for new collaboration partners
		8. We regularly utilize opportunities that arise from integration of new partners into our processes
		9. We regularly evaluate the potential benefits of outsourcing
		10. New collaboration partners regularly help us to further develop our business model
	New processes	11. We were recently able to significantly improve our internal processes
		12. We utilize innovation procedures and processes during the manufacturing of our products
		13. Existing processes are regularly assessed and significantly changed if needed
Value proposition innovation	New offerings	14. We regularly address new, unmet customer needs
		15. Our products or services are very innovative in relation to our competitors
		16. Our products or services regularly solve customer needs, which were not solved by competitors
	New customers and markets	17. We regularly take opportunities that arise in new or growing markets
		18. We regularly address new, unserved market segments

	New channels	19. We are constantly seeking new customer segments and markets for our products and services
		20. We regularly utilize new distributions channels for our products and services
		21. Constant changes of our channels have led to improved efficiency of our channel functions
		22. We consistently change our portfolio of distribution channels
	New customer relationships	23. We try to increase customer retention by new service offerings
		24. We emphasize innovative/modern actions to increase customer retention (e.g. CRM)
		25. We recently took many actions in order to strengthen customer relationships
Value capture innovation	New revenue models	26. We recently developed new revenue opportunities (e.g. additional sales, cross/selling)
		27. We increasingly offer integrated services (e.g. maintenance contracts) in order to realize long-term financial returns
		28. We recently complemented or replaced one-time transaction revenues with long-term recurring revenue models (e.g. Leasing)
		29. We do not rely on the durability of our existing revenue sources
		30. We regularly reflect on our price-quantity strategy
	New cost structures	31. We actively seek opportunities to save manufacturing costs
		32. Our production costs are constantly examined and if necessary amended according to market prices
		33. We regularly utilize opportunities which arise through price differentiation

Note. Adapted from Clauss, 2017, p. 395.

Customer collaboration is measured by adapting the first-order construct 'customer involvement' from Feng et al. (2010). This construct originally presents the involvement of customers in business practices, such as product idea generation, product design and product development. For this research, the definition is adapted to the involvement of customers in operational business practices, such as the key processes of manufacturing and marketing. By adapting this construct, it very well presents the input customers provide when a firm decides to collaborate with customers for beneficial outcomes. Therefore, the construct is assumed to be applicable to measure customer collaboration. The indicators of this construct can be found in Table 3.

Table 3

Indicators of Customer Collaboration

Construct	Indicators
Customer integration/collaboration	1. Our key customers often put forward improving proposes for our products
	2. We often hear key customers' opinions on using new business practices
	3. We involve key customers in various stages of value creation, such as the key processes of manufacturing and marketing
	4. Our key customers have major influence on our business practices, such as the key processes of manufacturing and marketing

	5. There is a strong consensus in our firm that customer collaboration is needed in new business practice development
	6. We have continuous improvement programs that include our key customers

Note. Adapted from Feng et al., 2010, p. 1393.

Supplier collaboration is measured by adapting the first-order construct 'supplier involvement' from Feng et al. (2010). Similar to the first-order construct of customer involvement, this construct presents the involvement of suppliers in business practices especially focused on the phases of product design and development. For this research, the construct's definition is altered to the involvement of suppliers in the operational business practice of manufacturing. By adapting this construct, it presents the extent to which firms involve suppliers in their business practices and the specific input suppliers provide when they are integrated into operational business practices or when a firm decides to collaborate with suppliers for manufacturing processes. Therefore, it is expected that the adapted construct of 'supplier involvement' is sufficiently applicable to measure supplier collaboration. The indicators of this construct can be found in Table 4.

Table 4

Indicators of Supplier Collaboration

Construct	Indicators
Supplier collaboration	1. We involve key suppliers in various stages of value creation, such as the key process of manufacturing
	2. Our key suppliers have major influence on our business practices, such as they key process of manufacturing
	3. There is a strong consensus in our firm that supplier integration/collaboration is needed in operational business practices
	4. We have continuous improvement programs that include our key suppliers

Note. Adapted from Feng et al., 2010, p. 1393.

The measurement construct used to measure NGO collaboration is adopted from den Hond et al. (2015). This first-order construct highlights the tendency of firms to collaborate with NGOs. It was argued that based on the degree of previous engagement with NGOs, the tendency of firms to collaborate with NGOs in the future would vary accordingly (den Hond et al., 2015). Therefore, the construct includes items on firms' tendency to collaborate for the long-term and the short-term. The indicators of this construct can be found in Table 5.

Table 5

Indicators of NGO Collaboration

Construct	Indicators
NGO collaboration	
	1. My firm has developed close working relationships with a number of NGOs
	2. My firm has been engaged in long-lasting relationships with NGOs
	3. My firm has difficulty developing close working relationships with NGOs
	4. Working relationships between my firm and NGOs are only temporary
	5. My firm has good relationships with a variety of NGOs
	6. My company is interested in forming long-term relationships with NGOs
	7. My company works with NGOs on short, specific activities
	8. My company refers to work with a range of different NGOs on various projects rather than as opposed to working with one or two NGOs on a few projects

Note. Adapted from Hond et al., 2015, p. 215.

To measure government collaboration, the foundation of the NGO collaboration construct by den Hond et al. (2015) is used. In general, little is known about the collaboration of firms with government institutions. Furthermore, no quantitative research has focused on firm-government collaboration and, therefore, no measurement construct can be found. For this research, the first-order NGO collaboration construct is altered towards a first-order government collaboration construct because NGOs are institutions that are closest to government institutions as they both represent the public sector. The indicators of this construct can be found in Table 6.

Table 6

Indicators of Government Collaboration

Construct	Indicators
Government collaboration	
	1. My firm has developed close working relationships with a number of government institutions
	2. My firm has been engaged in long-lasting relationships with government institutions
	3. My firm has difficulty developing close working relationships with government institutions
	4. Working relationships between my firm and government institutions are only temporary
	5. My firm has good relationships with a variety of government institutions
	6. My company is interested in forming long-term relationships with government institutions
	7. My company works with government institutions on short, specific activities
	8. My company refers to work with a range of different government institutions on various projects rather than as opposed to working with one or two government institutions on a few projects

Note. Adapted from Hond et al., 2015, p.215.

Competitor collaboration is measured by a first-order construct adopted from Bouncken and Fredrich (2012). This construct focuses on the coopetition relationship between firms where

collaboration and competition are integrated. It measures the degree to which firms collaborate with competitors to reach goals. The indicators of this construct can be found in Table 7.

Table 7

Indicators of Competitor Collaboration

Construct	Indicators
Competitor collaboration	1. We are in close competition with our partners 2. We collaborate with competitors to achieve a common goal 3. An active competition with our collaborators is important to us

Note. Adapted from Bouncken and Fredrich, 2012, p. 22.

The control variables included in this research were firm age and firm size (Apostolakou & Jackson, 2009; Baylis et al., 1998; Gelhard & von Delft, 2016). Firstly, firm age indicates the number of years a fashion company exists and this was measured through an open question from which the answers were categorised during data analysis. Secondly, firm size refers to the number of employees the company has. Prior research found that firm size has a significant effect on the environmental behaviour companies display and, therefore, on their sustainability performance (Apostolakou & Jackson, 2009; Baylis et al., 1998). Firm size was measured through a multiple-choice question.

3.1.2. Data analysis

To explore how stakeholder collaboration transforms new BMs into superior sustainability performance, the quantitative data was analysed using SPSS and ADANCO. Before any statistical analyses could be performed, the data set was checked for outliers and missing data. To create an overview of the sample's demographics, SPSS was used to conduct descriptive statistics analyses. SPSS was used because it is suitable software for performing statistical tests focusing on correlations and comparisons (Puteh & Azman Ong, 2017). Then, the ADANCO software was utilized to perform Structural Equation Modelling (SEM) with Partial Least Squares (PLS) path modelling. PLS-SEM was used in this research because it allows to analyse multiple, interrelated dependence relationships (Hair et al., 2019). Moreover, PLS-SEM is an appropriate data analysis method to use when sample sizes are small (Henseler et al., 2009), which enables data analysis of the relatively small quantitative sample of this research. Since measurement constructs of prior research were used, the validity and reliability of these scales were secured. During the data analysis, the measurement model was analysed first by assessing indicator reliability, internal consistency, convergent validity, and

discriminant validity (Hair et al., 2019). Thereafter, the structural model was analysed by evaluating path coefficients, their significance and effect size (Hair et al., 2019).

3.2. Qualitative research approach

3.2.1. Data collection

Data sample

In addition to the survey and numerical data, interviews were conducted to obtain in-depth knowledge and varying perspectives on the topic. Similar to the survey sample criteria, the interviewees had to be employed in management positions at European-based fashion companies. However, additional criteria for the interviews were needed to ensure that the broad spectrum of perspectives within the fashion industry were covered with a smaller sample size. The interviewees were, therefore, selected based on the following job and company characteristics:

- Whether the participant is employed at a fashion brand or elsewhere in the industry,
- If the participant is employed at a fashion brand, whether the fashion brand is small to medium (one to 250 employees) or substantially bigger (250 or more employees),
- If the participant is employed at a fashion brand, whether the fashion brand is in the start-up/scale-up phase (existing between zero to ten years) or relatively established (ten years and above).

Based on these characteristics, the interviewees were classified into three different participant groups to ensure representation of the entire industry. The first group is the interviewees employed at small to medium-sized fashion brands, being either in a start-up or scale-up phase. They are specified as 'SME fashion employees' and the interviewees involved are: fashion brand CEO A, sustainability coordinator B, and denim manager C. The second group is the interviewees employed at a big and well-established fashion brand. This group is specified as 'established brand employee' and the interviewee involved is managing director D. The last group concerns interviewees who are not employed at fashion brands but have a job position in an industry federation or a manufacturing intermediary organisation within the fashion industry. They are specified as 'industry experts' and the interviewees involved are: manufacturing CEO E and federation employee F.

The interviews took place after the survey was conducted and, therefore, the interviewees were selected by using the researcher's network resulting from the survey

participants' search process (i.e. convenience and snowball sampling) or by following up on the survey participants who provided their email address at the end of the survey. The interviewees were contacted via direct LinkedIn messages or email. The sample size was six interviews with four fashion brand employees or CEOs and two individuals employed at either a fashion industry federation or fashion manufacturing intermediary. The objective was to conduct interviews with interviewees representing the broad spectrum of the fashion industry providing different perspectives.

Interview process

Six one-on-one and semi-structured interviews were conducted online using Skype or Microsoft Teams. All interviews were video recorded via Skype or Microsoft teams and recorded using a smartphone upon agreement with the interviewees. The duration of the interviews ranged from one hour to one and a half hours, with one interview of two hours. Since the interviews were conducted online, the surroundings were informal as interviews were done from home both by the researcher and the interviewees. The interviews were semi-structured to provide some guidance but also leave enough room for unplanned questions. In addition, semi-structured interviews enable interviewees to provide their perspectives and experiences about the topic. Since four interviewees were employed at fashion brands or owned a fashion brand and two interviewees were employed in a position providing a helicopter perspective of the fashion industry, two separate interview guides were developed. These guides were similar, however, the guide for the interviewees employed at fashion brands was tailored to a company level and the guide for the two other interviewees was tailored to an industry level. The interview guides can be found in Appendix 2.

The general structure of the interviews was as follows. First, the interview was opened by introducing the researcher to the interviewee and by introducing the goal of the research. Then, the anonymity of the interviewee was guaranteed by stating that the interviewee's name and company name would not be used and contact details would be accessible to the researcher only. The agreement was made that recordings would be deleted once the thesis was completed. Thereafter, consent for the video and audio recording of the interview was ensured. The next phase was to let the interviewee introduce him/herself and to continue afterwards with topic-related questions. Starting with questions on what the BM of the interviewee's company / the fashion industry looks like and how sustainability plays a role in their company / the industry. Then, it was asked what their perspective is on the connection between newly developed BMs and sustainability and, subsequently, how he/she feels that customers, suppliers, NGOs,

government institutions, and competitors play a role in the connection between new BMs and sustainability. At the end of the interview, the researcher summarised the answers provided by the interviewee to guarantee alignment and avoid wrong derived conclusions. The last question to the interviewee was if he/she had anything to add that was not mentioned yet. The interviewee had the possibility to receive the interview transcript or even the full thesis if interested.

3.2.2. Data analysis

Interview transcription process

Transcription software (AmberScript and Word Dictate) was used to transcribe the interviews. AmberScript was used to transcribe three English interviews and because three interviews were conducted in Dutch, Word Dictate had to be used since AmberScript did not provide transcripts in Dutch. The outcomes of these transcribed interviews were very diverse. The English transcripts of AmberScript were of sufficient quality but the Dutch transcripts of Word Dictate were unclear and wrongly converted. Therefore, all six transcripts were manually perfected by the researcher to ensure no valuable information was lost in the conversion of the audio files to transcripts.

Coding process

After transcribing the interviews, thematic analysis was conducted to analyse the data by means of recognizing and organising data to create a holistic view of occurring patterns and themes (Braun & Clarke, 2012). Within thematic analysis, deductive coding was used because the data set was coded by using a priori concepts to interpret the data (Braun & Clarke, 2012). This type of coding was required because the core concepts of this research are of significant importance for answering the research question. Therefore, the labels used in this coding process were equal to the core concepts of this research, namely CSP; BMI; customer, supplier, NGO, government, and competitor collaboration. Having labels equal to the core concepts ensured the possibility for comparison with the quantitative data as the survey consisted of the same core concepts. The interview transcripts were colour coded in Word by attaching labels of the core concepts to relevant text. Every core concept was assigned its own colour resulting in a clear structure in the data. During the coding process, the text was labelled and interpreted to make sense of the codes.

Data analysis process

To analyse the data, the six-step process of Braun and Clarke (2012) was followed. At first, the researcher familiarised herself with the data by reading and manually perfecting the transcripts. Thereafter, the relevant text of transcripts was labelled with the core concepts. The third step was to identify themes among the labelled core concepts, both based on a priori and newly emerged concepts. Then, identified themes were reviewed and checked for relevance compared to the entire data set to make sure the themes apply to all collected data. The fifth step was to define the themes and name them on either fashion brand-level or industry-level. Last but not least, the results were written down based on the identified themes and the structure of the research conceptual model.

3.3. Research quality

To assess the quality of this research, reliability, validity and generalisability were relevant assessment criteria for both the quantitative and qualitative approaches (Leung, 2015). The quality of the quantitative approach was ensured in two ways. First, the measurement scales used were tested on reliability and validity in previous research. Second, during PLS-SEM, indicator reliability, internal consistency, convergent validity, and discriminant validity of the model were tested as well. In contrast to the quantitative approach, the reliability and validity of the qualitative approach were difficult to ensure because interviews were subjective in nature due to varying perceptions and interpretations of interviewees and the researcher.

Reliability refers to achieving consistent results when research is reproduced due to consistent methods. Long and Johnson (2000) argue that reliability in qualitative research can be established through data triangulation and an analysis of the decision process. To improve the reliability of this research, the researcher's peers and supervisor were involved in analysing and assessing the semi-structured interview guides to guarantee that questions were clear with little room for speculation. The decision process was analysed by tracking all assumptions and interpretations derived from the interview transcripts. These assumptions and interpretations were reported in comments alongside the textual data to contextualise the researcher's thought process. This thought process could be reviewed at any time to reduce potential biases in initial drafted assumptions and interpretations.

Validity refers to measuring what research is intended to measure. Validity in qualitative research is established through among others reflective journaling, self-description, validation of respondents, prolonged involvement, persistent observations, debriefing of peers, and data triangulation (Long & Johnson, 2000). To improve the validity of this research, the researcher

wrote a summary of each interview and reflected upon what has been said to ensure objectivity. Validation obtained from participants contributes to the stability of the research (Morse, 1990) and, therefore, interview transcripts were verified with interviewees to confirm that the answers were presented as they were intended. Furthermore, the researcher contacted peers to discuss the meaning of the analysis results and potentially drawn conclusions. Validity is also improved through data triangulation of both the qualitative and quantitative data which support each other in building a conclusion to this research.

The generalisability of this research is low due to a too small sample size of the quantitative approach and due to the subjective nature of the qualitative approach. However, it was not the primary research goal to generalise results to other industries. This research aimed to identify the impact of stakeholder collaborations on the relationship between BMI and CSP within the European fashion industry.

3.4.   Research ethics

To guarantee this research was conducted in an ethically correct manner, the following requirements have been met. First, it was ensured that the participants have agreed to participate in either the survey or interview and they knew beforehand what the research goals were. The participants were informed about the research goals via email, LinkedIn message, or at the beginning of a call. Moreover, the anonymity of the participants was guaranteed and they had the freedom to withdraw from the research at any time. Their anonymity was guaranteed as their personal data was not asked during the survey or interview.

At the beginning of the survey, the participants had to indicate if their answers could be used for no other purpose than this research. At the end of the survey, the participants had the opportunity to fill in their email addresses if they were interested in receiving the research results. These email addresses were only temporarily saved and were removed as soon as the research was finished and the participants received the results. At the beginning of an interview, the researcher guaranteed the anonymity of the participant and asked permission to video and audio record the interview for data analysis purposes. At the end of an interview, the participant was asked if they would like to check the interview transcript before quotations were derived and used in this research. Throughout the presentation of the results, participant names and companies were not mentioned.

4. Results

4.1. Quantitative approach

4.1.1. Descriptive statistics

30 individuals participated in the survey. The majority of the survey's participants (68%) were employed in other management functions (i.e. CSR or Sustainability manager) than predetermined in the survey. In addition, more than half of the participants (58%) worked at their employer between one and five years. The majority of the participants worked at fashion brands that were relatively small with one to 50 employees (45%) and existed between zero to five years (35%). Furthermore, these fashion companies were primarily located in the Netherlands (48%). These descriptive statistics can be found in Appendix 3. Even though the sample is small, this data set was still able to provide a preliminary insight into the hypothesized relationships and highlight potential starting points for the qualitative results.

4.1.2. Evaluation of the measurement model

The first step of the analysis was to check the measurement models' reliability and validity to determine if it was appropriate to continue with the assessment of the structural model. The measurement model was considered to be reflective in nature because it was expected that the indicators from prior research were correlated and the indicators illustrated the effects of a specific construct (Hair et al., 2019). This implies that when an indicator was excluded from the analysis, the meaning of the construct was not altered (Hair et al., 2019). As the measurement model was reflective, the indicator reliability, internal consistency, convergence validity, and discriminant validity were examined.

Firstly, the indicator reliability was assessed through an examination of the indicators' outer loadings. As BMI was a second-order construct and the other constructs included in this research were first-order, a separate analysis including the first-order constructs of BMI had to be conducted to assess the indicator reliability. Table 19 in Appendix 4 presents the analysis of the first-order constructs and showed that all indicators had a value between zero and one. However, for an indicator to be considered reliable, the outer loading should be above .708 (Hair et al., 2019). The outer loadings of the reflective measurement model ranged from .63 to .86 for CSP, from .36 to .80 for BMI, from .63 to .83 for customer collaboration, from .60 to .83 for supplier collaboration, from -.57 to .85 for NGO collaboration, from -.60 to .76 for government collaboration, and from .17 to .61 for competitor collaboration. Indicators with a negative loading on their construct were discarded from the analysis to improve the internal

consistency, convergent validity, and discriminant validity. These indicators were discarded because they were related to the construct in the opposite direction. This implies that NGO collaboration indicators 3, 4, 7 and government collaboration indicators 3 and 4 were discarded. Moreover, it was recommended to discard indicators with an outer loading <.40. However, this recommendation only applied if the reliability of an indicator was low and, simultaneously, the internal consistency would considerably increase when the indicator was discarded (Henseler et al., 2009). Therefore, a separate analysis was conducted in which six indicators were discarded with outer loadings <.40 (BMI26, BMI30, NGOC8, GC7, GC8, CC2). This analysis illustrated that the internal consistency had increased substantially to discard these indicators permanently from the analysis, see Table 21 and Table 22 in Appendix 4 for the differences before and after deletion of outer loadings <.40.

Secondly, the internal consistency was assessed by looking at Dijkstra-Henseler's rho. This measure is considered to be the most influential internal consistency measure because it considers a construct's weight instead of its loading (Dijkstra & Henseler, 2015). Table 8 shows that all constructs, except for BMI – value capture innovation and competitor collaboration, had a value above the recommended threshold of .70 (Nunnally & Bernstein, 1994, as cited in Henseler et al., 2016). However, BMI – value capture innovation had a value above .60, which is still considered to be acceptable (Hair et al., 2019).

Table 8

Internal Consistency Values

Construct	Dijkstra Henseler's rho (ρ_A)
CSP	.88
BMI_VCrI	.91
BMI_VPI	.90
BMI_VCaI	.63
CustomerC	.89
SupplierC	.85
NGOC	.88
GovernmentC	.79
CompetitorC	.50

Note. CSP = Corporate Sustainability Performance, BMI_VCrI = BMI – Value Creation Innovation, BMI_VPI = BMI – Value Proposition Innovation, BMI_VCaI = BMI – Value Capture Innovation, CustomerC = Customer Collaboration, SupplierC = Supplier Collaboration, NGOC = NGO Collaboration, GovernmentC = Government Collaboration, CompetitorC = Competitor Collaboration

Thirdly, the convergent validity was assessed by looking at the average variance extracted (AVE). For the AVE to be acceptable, a value of .50 or higher was needed (Hair et al., 2019). In Table 9, the constructs' values of AVE are presented. Only the values of customer, supplier

and NGO collaboration exceeded the threshold of .50. The other constructs almost reached the recommended threshold, except for BMI – value capture innovation and competitor collaboration.

Table 9

Convergent Validity Values

Construct	Average variance extracted (AVE)
CSP	.49
BMI_VCrI	.42
BMI_VPI	.42
BMI_VCaI	.21
CustomerC	.57
SupplierC	.57
NGOC	.63
GovernmentC	.48
CompetitorC	.34

Note. CSP = Corporate Sustainability Performance, BMI_VCrI = BMI – Value Creation Innovation, BMI_VPI = BMI – Value Proposition Innovation, BMI_VCaI = BMI – Value Capture Innovation, CustomerC = Customer Collaboration, SupplierC = Supplier Collaboration, NGOC = NGO Collaboration, GovernmentC = Government Collaboration, CompetitorC = Competitor Collaboration

Lastly, discriminant validity was assessed through the examination of cross-loadings and the heterotrait-monotrait ratio (HTMT). After discarding the aforementioned indicators, still 17 indicators with cross-loadings were found as they loaded higher on another construct than on their corresponding construct (see Table 20, Appendix 4). A separate analysis was performed to investigate the effect on the composite reliability when these indicators were discarded. This analysis found that discarding these indicators resulted in a negligible increase in the reliability for two constructs and a decrease for all other constructs. Therefore, the decision was made not to discard these indicators. In addition, the HTMT ratio was used to further assess discriminant validity. When conducting PLS-SEM, this ratio was suggested instead of using the Fornell-Larcker criterion (Hair et al., 2019). The HTMT ratio should be smaller than one to indicate that the constructs are dissimilar. Specifically, this ratio should be below the threshold of .85 (HTMT$_{.85}$) or .90 (HTMT$_{.90}$) (Hair et al., 2019; Henseler et al., 2015). According to Table 10, all constructs had a HTMT value < .85 or <.90.

Table 10

Discriminant Validity Values (HTMT)

Construct	CustomerC	BMI_VCrI	BMI_VPI	BMI_VCaI	CSP	SupplierC	NGOC	GovernmentC	CompetitorC
CustomerC									
BMI_VCrI	.14								
BMI_VPI	.13	.76							
BMI_VCaI	.45	.30	.21						
CSP	.21	.82	.48	.07					
SupplierC	.22	.61	.58	.17	.74				
NGOC	.15	.43	.38	.28	.54	.63			
GovernmentC	.23	.03	.12	.07	.29	.40	.46		
CompetitorC	.24	.82	.76	.41	.65	.26	.53	.21	

Note. CSP = Corporate Sustainability Performance, BMI_VCrI = BMI – Value Creation Innovation, BMI_VPI = BMI – Value Proposition Innovation, BMI_VCaI = BMI – Value Capture Innovation, CustomerC = Customer Collaboration, SupplierC = Supplier Collaboration, NGOC = NGO Collaboration, GovernmentC = Government Collaboration, CompetitorC = Competitor Collaboration

4.1.3. Evaluation of the structural model

The second step of the analysis was to assess the structural model by evaluating the path coefficients, their significance and effect size. As BMI is a second-order construct, a two-stage approach was applied (van Riel et al., 2017). In the first stage, the scores of the first-order BMI constructs were extracted. Consequently, these scores served as input for the second-order BMI construct in the second stage. This two-stage approach allowed the model to be estimated and results could be obtained.

However, before assessing the structural model, it had to be ensured that the collinearity of predictor constructs did not cause any problems. To check this, VIF values should preferably not exceed the value of five because this indicated the obvious presence of collinearity (Hair et al., 2019). In this analysis, all VIF values of the predictor variables were < 5 and therefore collinearity was not present (see Table 23, Appendix 4).

The first step in the structural model assessment was the evaluation of the model's explanatory power, displayed through the explained variance (R^2) of the endogenous variables. The adjusted R^2 takes the complexity of the model and differing sample sizes into account (Hair et al., 2019). In Table 11 it can be seen that the model explained 56% of CSP's variance, 2% of customer collaboration's variance, 36% of supplier collaboration's variance, 21% of NGO collaboration's variance, 0.2% of government collaboration's variance, and 43% of government

collaboration's variance. The variance of these endogenous variables can be considered sufficient, except for the variables customer collaboration and government collaboration.

Table 11

R^2 and Adjusted R^2

Construct	R^2	Adjusted R^2
CSP	.56	.45
CustomerC	.02	-.01
SupplierC	.36	.33
NGOC	.21	.19
GovernmentC	.002	-.03
CompetitorC	.43	.41

The second step was the evaluation of the path coefficients, their significance and effect size. For the path coefficient to be significant the p-value should have a value below .05. Table 12 shows that the p-values of H2a, H3a, and H5a were below .05 and therefore significant. That is why only H2a, H3a, and H5a were supported. To interpret how substantial these direct effects were, the effect size indicated by Cohen's f^2 was consulted (Hair et al., 2019). H2a and H5a both had a strong effect as $f^2 \geq .35$. H3a had a moderate effect as f^2 was $\geq .15$ but $\leq .35$. H1a and H2b had a weak effect as $f^2 \geq .02$. All other hypotheses had no substantial effect as the values of f^2 were $< .02$.

Table 12

Results PLS-SEM

Path		Beta	Cohen's f^2	p-value*
H1a	BMI - CustomerC	.14	.02	.642
H1b	CustomerC - CSP	.05	.006	.780
H2a	BMI - SupplierC	.60	.55	<.001
H2b	SupplierC - CSP	.17	.02	.466
H3a	BMI – NGOC	.46	.27	<.005
H3b	NGOC – CSP	.12	.02	.414
H4a	BMI – GovernmentC	.05	.002	.869
H4b	GovernmentC - CSP	.23	.07	.263
H5a	BMI – CompetitorC	.66	.75	<.001
H5b	CompetitorC - CSP	.03	.001	.455

*All p-values were two-tailed and based on standard bootstrap results

Moreover, it was expected that the relationship between BMI and CSP would be fully mediated by the various forms of stakeholder collaboration. Table 13 indicates that the indirect effect of BMI – CSP was not significant and therefore full mediation of all types of stakeholder collaboration cannot be assumed.

Table 13

Results Mediation Effect

Path (indirect)	Beta	p-value	Type of mediation
BMI - CSP	.20	.430	None

*All p-values were two-tailed and based on standard bootstrap results

4.2. Qualitative approach
4.2.1. Corporate Sustainability Performance

Based on Goel (2010) and Isil and Hernke (2017), it was expected that participants identify CSP based on the combination of the environmental, social and economic value creation perspective in line with the TBL for a holistic approach towards sustainability. However, in essence, the participants emphasized that fashion companies, in general, would not shift towards superior sustainability performance unless their business was financially viable. The main finding concerning sustainability performance was that at the end of the day bottom line margins are the most important for fashion brands, like in other companies. The economic aspect of the TBL of Goel (2010) was dominant before the participants mentioned the social and environmental aspects. Our participants report that other actions and/or innovations regarding the social and environmental aspects of the TBL could only be performed when the company is financially sustainable. Denim manager C described the importance of this economic aspect to a fashion company:

"Because I mean, at the end of the day, all companies are about making profit. And I mean, that is what it is about, you know, creating jobs and making a living. And if we are not financially sustainable, then we do not have a company".

From a helicopter perspective on the fashion industry, however, federation employee F indicated that as a result of the significant importance of financial sustainability, a slow transformation towards increased levels of sustainability is happening: *"A part of the fashion industry becomes increasingly sustainable because a larger market share is captured by a lot of smaller businesses. New businesses who have started with a more sustainable model".* New and smaller fashion brands with a more sustainable BM transform parts of the industry. These new brands needed to be 'born sustainable' to survive as the industry is slowly moving in a sustainable direction. Established and big fashion brands had more difficulty in creating sustainable BMs because they placed more importance on financial sustainability compared to

the 'born sustainable' fashion brands and their newly developed and innovative BMs. It became clear that it depends on the importance a fashion brand attaches to the economic aspect and the consequences it gives for their sustainability practices. Especially the participants of the cluster 'SME fashion employees' related to this fact. Fashion brand CEO A explained that 'born sustainable' fashion brands aimed to move into a higher purpose over profits with an urge to conduct business focused on recycling and social compliance.

In contrast to other participants, denim manager C underlined that sustainability performance is difficult to measure on a corporate level because sustainability performance differs per garment and is, therefore, product specific. Each garment has distinct inputs of raw materials and in the absence of transparent supply chain information, CSP is difficult to measure because the sustainability scores of individual garments are difficult to compare. Let alone add up these individual garment scores into one company score. Where other participants referred to CSP as one straightforward company score, denim manager C explained that a pair of jeans is much more complicated to produce than a T-shirt within the supply chain, which has an impact on the sustainability score of the individual garment and therefore the company score.

The expectations of a holistic approach of CSP based on the TBL mentioned by Goel (2010) and Isil and Hernke (2017) varied with the size of a fashion brand. On the one hand, big and established brands emphasized the importance of economic value creation over environmental and social value creation. On the other hand, small and 'born sustainable' brands installed an innovative and more sustainable BM from the start, where all three aspects of the TBL were combined for a holistic approach, to keep up with the big players in the industry.

4.2.2. Business Model Innovation

Based on the research of Pedersen et al. (2016), participants were expected to identify a relationship between BMI and CSP as CSP was expected to require changes in current business operations and therefore the current BM. According to the participants, BMI is about changing the status quo. In the data, two trends were visible regarding BMI: circularity and technology/digitalisation. First, the term 'circular business models' came forward from the data. It became clear that the intended meaning of circular BMs varied ranging from 'recycling' to 'reuse' and 'repurpose'. However, five participants had a recycling perspective when it comes to circular BMs for superior sustainability. BMI for circularity was found in 'closing the loop', thus the innovation of the production process by recycling garments. Second, participants mentioned that technology is often integrated into newly developed BMs and this digitalisation allows the businesses to be more effective. BMI for digitalisation was found in optimising and

innovating online channels. For example, denim manager C refers to the increased effectiveness of their BM through emphasizing online presence instead of having a lot of physical stores, which is driven by customer demand for online channels. Managing director D explained that optimising online garment information (i.e. sizing, pictures, garment description) increases customer experience and decreases waste from online garment returns.

Next to this separation of trends, circularity and technology were also coupled together in the data. Denim manager C argued that garment recycling is easy when the fabric and lining of garments are made from mono-material. According to him, recycling technology does exist when it comes to mono material garments, however mechanical recycling of the majority of produced garments is highly complex because of the diverse fabrics: *"With current technology, then it's just not easy because if you mechanically recycle it, then you shred it"*. Moreover, manufacturing CEO E stressed that all circular and recycling procedures take time. She referred to the fact that it took us multiple years before we developed the technology to recycle glass and paper and thus that recycling cotton is not that straightforward. It is about who dares to be the first mover. The development of recycling technology is the next required step for fashion brands as this development and integration innovates the BM's production process to carry out circular business practices.

In addition to the BMI trends, it became evident from the data that BMI is an important antecedent for CSP. Federation employee F explained:

"Without sufficiently changing your business model, you cannot really continue to expect major improvements in the field of sustainability".

Sustainability coordinator B underlined this statement and described it as a 'no brainer' meaning that BMI in general is a prerequisite for superior CSP. In addition, denim manager C claimed that by being a brand that is all about sustainability, you need to pioneer and lead the way by innovating the current business. The participants mentioned specific examples of BMI to achieve superior CSP which are in line with the trends of circularity and technology/digitalisation.

First, a circular BM improves the sustainability performance of a fashion brand through the incorporation of new (local) recycling and production processes. Sustainability coordinator B emphasized that a local market-based solution for the challenge of environmental sustainability is recycling. In addition, he highlighted that local recycling solutions in a circular BM are necessary to innovate the BM towards higher levels of sustainability performance. He

explained how their circular BM contributes to superior sustainability with local recycling: *"Last year, we made our first recycled products from company X collected only in the Australian shops. So that was with a supplier in Tasmania, an Australian wool mill. So, it was a blanket made up of 65% recycled wool, 20% post-consumer jeans of company X. (…) That is just an example of how we can operate regionally or locally to find sustainable circular solutions"*. Denim manager C explained that recycling is only beneficial for sustainability when done locally because of the additional CO_2 emissions coming from transportation to and from the recycling facility.

However, federation employee F and manufacturing CEO E disagreed on the importance of innovating the BM toward local recycling and production. Their perspective differs in terms of the scale of the environmental footprint. Federation employee F stated that producing and/or recycling locally does not solve anything except for the fact that it only solves the 2 – 4% that transport contributes to environmental pollution, which is almost negligible. Another perspective on local recycling and production in circular BMs is provided by manufacturing CEO E, who highlighted the consequences of the COVID-19 crisis in this matter: *"… also because transport prices have really risen enormously since COVID. That's really abnormally explosive. That brands very much say: let me produce a little closer to home. We're going to Portugal, Bulgaria, Romania, Egypt, and Turkey. Because, well, that also has everything to do with the transport prices, but also with the footprint you leave behind"*. This statement shows that the economic aspect in the first place is the cause of local production instead of the environmental footprint argument. The disagreement on the importance of local recycling and production in circular BMs for the impact on environmental footprint indicates a contrast in group perspectives of the 'SME fashion employees' and 'industry experts'.

Apart from the disagreement about innovating the BM towards local recycling and production, a specific example of a circular BM for superior sustainability performance is the subscription model launched by fashion brand CEO A. Fashion brand CEO A elaborated on recycling with the reuse and repurpose of garments in this subscription model. The model revolves around a quarterly footwear subscription for customers with the possibility of returning footwear which is at the 'end-of-life' stage to recycle, reuse, or repurpose to close the loop.

Second, a newly developed digital and/or technology-focused BM improves the sustainability performance of a fashion brand through the optimisation of e-commerce and technology. Concerning a digital BM and optimising e-commerce, managing director D emphasised that they innovated their online channel by enhancing garment and sizing

information online to reduce waste of packaging and garment returns. Likewise, the brand of denim manager C reduces garment returns through the introduction of a new value proposition within their BM: on demand buying by utilising pre-orders. He argued: *"So to be able to have better products with better fit and lower returns and on demand buying, etc. All these things, they are all connected and at the end of the day, it gives more value to the customer because then we can buy a more expensive, higher quality product and still sell for the same price. Because we can see that the return is low"*. This statement shows that alongside beneficial sustainability outcomes, a digital-focused BM also has a positive influence on customer value and revenue due to less inefficiency of overproduction and waste. In addition to a digital-focused BM, a BM revolving around technology is also a driver of superior sustainability. Participants emphasize that innovation of manufacturing activities through new technology has already proven to have a major impact on sustainability and will continue to do so. Denim manager C argued that technology for garment production has developed and changed which enables the sustainable production of garments for the desired price.

The expectation of a relationship between BMI and CSP based on Pedersen et al. (2016) was justified as multiple participants identified that BMI is a prerequisite for CSP. Various examples of innovation within circular and digital BMs have proven that they contribute to the superior sustainability performance of a fashion brand.

4.2.3. Stakeholder Collaboration

Stakeholder collaboration is the overarching theme which connects the topics of BMI and CSP in the data. Based on Saebi and Foss (2015), it was expected that reorganizing the firm and its BM (i.e. BMI) has a positive effect on the acquisition of knowledge and resources of external stakeholders to innovate the firm. It came forward from the data that BMI is relevant for stakeholder collaboration in a broad sense suggesting that the BM should allow people inside and outside the organisation to change the status quo. However, it all starts with the people within the organisation who must be open to changing this status quo. Federation employee F described this as: *"You have to trust each other. You have to dare to let go of things, by letting the other do it. More collaboration, that is where I think the real innovation is in the fashion industry, in the process"*.

Stakeholder collaboration is described as critical for superior sustainability performance not only for fashion brands but also for the industry as a whole. As denim manager C stated: *"... it is like the entire industry, we have to help each other change"*. Manufacturing CEO E agreed with this statement and added that the closer the stakeholder collaboration and the higher

the level of transparency, the better the results that can be achieved. Stakeholder collaboration within the fashion industry is considered critical to achieving higher levels of sustainability, however, an unexpected suggestion from the data shows that stakeholder collaboration for superior sustainability does not have to be limited to the boundaries of the fashion industry, but extends to new stakeholders from outside the fashion industry as well. It is suggested that even higher levels of sustainability can be achieved when industries are connected and the waste from the fashion industry serves as input for another industry. A specific upcycling example was provided by denim manager C who suggested vertical integration between the fashion industry with its textile waste due to overproduction or disposal with the automotive industry and the usage of this textile waste for car seat upholstery and/or filling.

The expectation that reorganizing the firm and its BM (i.e. BMI) has a positive effect on the acquisition of knowledge and resources of external stakeholders to innovate the firm (Saebi & Foss, 2015) is justified because it became clear that a tolerant BM and organisation facilitates collaboration with various stakeholders which contributes to higher levels of sustainability performance.

Customer Collaboration

The participants report that collaboration with customers is the most prevalent and important in the fashion industry. Especially the cluster of 'SME fashion employees' provided compelling examples of BMI that enabled customer collaboration with superior sustainability performance as a result. One example from the data is the circular BM of sustainability coordinator B's brand. They incorporated a new value proposition in their BM, a repair service and reuse program, which is rooted in circularity to close their loop and meet customers' sustainability demands. Sustainability coordinator B described the importance of customers in their new value proposition as: *"Like the circularity aspect, of course, the customer plays a crucial part here. I mean without the customers, there would be no circularity. And so, we need to offer a BM which incentivizes circular customer behaviour"*. Another example of a newly developed value proposition where customers are necessary is the circular subscription-based model mentioned by fashion brand CEO A. The idea for this new value proposition started due to the COVID-19 crisis where customer needs could not be met because of lockdown: *"So we innovated and we decided to be the first brand in our sector to launch a subscription model"*. To execute this new value proposition successfully, customers' participation is of significant importance. Fashion brand CEO A argues: *"Like people just love it because the sneakers subscription includes shipping. So, for customers in the United States, where we have got quite a lot, it is a big draw.*

On the back of that, we were like, well, if we are going to push this footwear subscription, then we also need to really think about the circularity and the end life of the product. So, we have teamed up with an organisation called Soles4Souls (...) Where our customers can receive a box or bag [with shoes] at their house with a label on it. When they think they have worn the shoe enough, any shoe can be repurposed by the foundation for other people instead".

Besides the fact that customers are critical in executing BM's new value propositions for superior sustainability, is the fact that collaborating with customers serves a higher purpose. Through this involvement of customers, fashion brands outgrow their boundaries which results in becoming a 'customer's brand of choice'. Likewise, denim manager C mentioned that *"the community is ready"* meaning that customers are committed to collaborating with fashion brands' new sustainability initiatives. In addition to collaboration with fashion brands, the community shows its readiness through another type of customer collaboration: peer-to-peer platforms, also known as sharing platforms and a specific type of circular BM. Organisations like 'Marktplaats' or 'Vinted' have a successful BM by using a value proposition based on customer demands for second-hand and/or vintage fashion as a sustainable alternative to fast fashion. Manufacturing CEO E stated that these organisations are *"the largest sustainable recycling option we have"*.

Supplier Collaboration

Next to customers, it became evident from the data that suppliers are the second most important stakeholder for fashion brands. Suppliers are necessary for the execution of newly developed BMs to strive for social and environmental sustainability goals. Especially the cluster of 'SME fashion employees' addressed their suppliers as an integral part of the business where social sustainability regarding transparency around manufacturers and working conditions are of significant importance. The importance of supplier collaboration within the subscription-based BM and the impact on social sustainability performance becomes clear as fashion brand CEO A mentioned that *"without the artisans, our company falls apart"*. With artisans being the suppliers of this brand. Moreover, denim manager C stated that suppliers are crucial in the execution of their circular BM because their integration ensures transparency in the circular supply chain and insight into the working conditions through having close relationships with their suppliers without a trading company intervening.

Besides the social sustainability aspect concerning suppliers, environmental sustainability plays also a critical role for fashion brands. Suppliers and their sustainable initiatives are highly determinant in the environmental sustainability performance of fashion

brands as the brands rely on suppliers' manufacturing technologies and processes. An example of a supplier's sustainable initiative is the natural dye program of an Indian supplier mentioned by manufacturing CEO E. All garments of this supplier are made of organic cotton and are naturally dyed with herbs. Even the production process complies with GOTS (Global Organic Textile Standard) certification. All these measures contribute to a smaller environmental footprint. Concerning such supplier collaboration and the impact on environmental sustainability performance, sustainability coordinator B described that the pursuit of environmental sustainability is a process where additional suppliers might need to be attracted to adhere to the brand's circular commitments.

These developments in supplier relationships for enhanced social and environmental sustainability performance are driven by the brand and its customers. Denim manager C emphasized that: *"... starts from the consumer and the brand, you know, we want to have organic products, then somebody at the other end of the value chain needs to start sourcing that and transforming the production from conventional to organic..."*. This impulse for sustainable innovation within a BM's key partners comes from the brand and their customers, therefore, brands have to transform the start of the value chain, namely the suppliers, to guarantee sustainable performance and to meet customer demands.

NGO Collaboration

NGO collaboration has an ambiguous connotation among the participants with one participant perceiving NGO collaboration as an integral part of the business and others perceiving the collaboration with NGOs as an external force that assists fashion brands in sustainable performance. Fashion brand CEO A recognizes the need to innovate his BM to integrate NGOs in the core business to achieve superior sustainability performance. By establishing his own foundation based on assisting individuals with a distance to the labour market, he aims to reach social sustainability goals. According to him the foundation revolves around *"pairing people in need with the artisans"* and this is best done by establishing a self-managed and funded NGO. However, the majority of the participants do not perceive NGO collaboration as a capability that has to be integrated into their new BM. Yet, they do acknowledge that collaborating with NGOs can bring multiple stakeholders together to refine business practices. Sustainability coordinator B states:

"NGOs are important too. They can help us to like fine-tune our business, make developments, stay updated, and adapt to best practices. But it is not that we could not do that without them. It is just that they help us, it is like guiding support".

Likewise, denim manager C argues that NGOs foster the capability of brands and other stakeholders to collaborate: *"...sharing is caring. (...) So, we try to do things together and align ideas (...) why not join forces in terms of designing for circularity".*

Despite disagreement on the implication of NGO collaboration, there was one aspect on which the participants agreed. Namely, the fashion industry has one NGO that has a significant influence on environmental sustainability: The Ellen MacArthur Foundation. This NGO especially focuses on the circular economy and completed multiple reports and projects about the fashion industry and, therefore, generated an elaborate knowledge base about today's industry practices. As fashion brands increasingly pursue the circularity trend and want to close the loop, The Ellen MacArthur Foundation is a leading partner because of its circular economy initiatives. Denim manager C described the extensive impact of this foundation as *"they have made fashion circular".*

Government Collaboration

All participants mentioned that collaboration with government institutions is difficult to integrate into a fashion brand's BM. Despite newly developed BMs, collaboration with government institutions is not specified as a fruitful type of stakeholder collaboration. Government institutions were rather described as authority figures that can have major consequences on fashion brands' sustainability practices. Federation employee F noted that fashion brands need to change themselves in light of their sustainability practices but government institutions have the power to pressure this change as 'no longer voluntary'. Likewise, the role of government is described by many participants as critical and that they have a huge role to play in the fashion industry. They have the power to set up legislation and policies which forces fashion brands to comply with the binding requirements and thus change accordingly. Therefore, the relationship between government institutions and fashion brands can be best described as a one-way cause-and-effect relationship where the government is the authoritative figure exerting pressure upon the industry by deciding upon a foundation of sustainability legislation. Sustainability coordinator B describes this as external pressures from the government with consequences for a fashion brand's BM:

"... using legislations to attack us to like nudge in the right direction. That is a huge potential that governments have. (...) I can only imagine that to adhere to all those regulations, and then new laws that are going to be policies that are developed by the government regarding textiles, that it also requires changes in your BM".

An example of a government institution as external pressure on fashion brands is specified by denim manager C and manufacturing CEO E. Government can foster superior sustainability performance by lowering the tax rate on sustainable garments and developing new legislation regarding sustainability practices. By developing new legislation, the government pressures fashion brands to change their BM which is beneficial for their sustainability performance. Manufacturing CEO E argues that a shift towards increased levels of sustainability will happen very quickly when fashion brands have to comply with this new legislation. Fashion brands have to adhere to legislation and policy developed by international government institutions on the EU level, which is a one-way relationship. However, sustainability coordinator B explains that closer ties with specific, local, government institutions exist to guide fashion brands' sustainability practices: *"I mean there are like union and industry groups gathering up to read up on the legislations, proposals and to give feedback, that kind of connection exists".* In addition to complying with legislation and policies of international government institutions, it is thus possible for fashion brands to develop a relationship with the local government to receive guidance with their sustainability practices.

A notable insight from the data regarding government pressures makes a distinction between small fashion brands and big corporates. Denim manager C mentioned that government indeed has the power to develop sustainability policies that need to be fulfilled by fashion brands. However, the fashion brand's size plays a significant role in the time it takes to adapt their BM to these legislations and policies. Government pressures are less rigorous for small fashion brands in terms of the consequences for their BM and more so for the bigger fashion corporates. Denim manager C: *"It's easy for a small company like us born into the new era here." (...) "But it is not easy and possible to change overnight [for big corporates]. Because I mean, if all the big companies just go all sustainable overnight, then there is not enough cotton in the world. So, it takes time for this transition".*

Competitor Collaboration

Competitor collaboration brought up two divergent perspectives among the participants: advocates and opponents of this type of stakeholder collaboration. Despite newly developed

BMs, the eagerness and feasibility to collaborate with competitors vary. On the one hand, competitor collaboration was seen as a significant determinant for change towards superior sustainability performance. Fashion brand CEO A is an advocate of competitor collaboration claiming that their brand on its own cannot be the only player driving the change and that collaboration with other brands is needed to achieve superior sustainability. Denim manager C goes even beyond this by describing collaboration amongst competitors on an even larger scale: *"… it is about 70 companies now, joining forces, so instead we all do something differently, we actually say sharing is caring." (…) "So, we try to do things together and align ideas and so on, we can still compete, and we can still do our own designs. But why not join forces in terms of designing for circularity".* However, this large-scale collaboration between competitors is not feasible without the interference of an NGO: The Ellen MacArthur Foundation. That is why this type of competitor collaboration relates to NGO collaboration where an NGO behaves as an external connecting force.

On the other hand, an opposing opinion on competitor collaboration comes from manufacturing CEO E, who states firmly: *"there is zero collaboration in it".* It is in the fashion industry's nature that brands will stay close to their own domain and a brand's BM does not allow for collaboration with competitors due to a brand's specialized customer segment and value proposition. However, there is a distinction between brands that are not eager to collaborate with competitors and brands for whom competitor collaboration is not feasible. First, brands who are not eager to collaborate with competitors want to stay within their own industry segment and are simply not willing to share this with competitors to maintain a competitive advantage. Second, a reason why competitor collaboration is not feasible for brands is intellectual property. Fashion brands have their own intellectual property restrictions within the design and manufacturing activities of the BM. Key activities and partners within the BM cannot be aligned with other competitive brands because sustainability coordinator B emphasized that *"… brands have their different suppliers and their suppliers might have intellectual property restrictions".*

5. Discussion

5.1. Interpretations of quantitative and qualitative data

Business Model Innovation and Corporate Sustainability Performance

The main relationship of the conceptual model revolves around the influence of BMI on CSP. The results of the quantitative data suggest that this relationship is non-existent. This is an unexpected outcome and its significance is questionable since the sample size of the quantitative data is too small to generalise the results. In contrast with the quantitative results, the relationship between BMI and CSP is well-established based on the qualitative findings. Participants highlighted two specific examples of a newly developed circular and digital BM that both resulted in the superior sustainability performance of a fashion brand. The quantitative results might suggest that the relationship between BMI and CSP is non-existent, however, based on the findings of Pedersen et al. (2016) and the qualitative data of this research, a more plausible explanation is that the relationship between BMI and CSP is well-established and supported with evidence from theory and practice. Therefore, this research suggests that when fashion brands engage in the innovation of their BM, it will inevitably lead to superior sustainability performance, either from an environmental or social point of view.

Customer Collaboration

The quantitative results might suggest that customers are not considerable stakeholders, as all outcomes regarding customer collaboration are non-significant. However, based on the qualitative data, a more plausible explanation is that customers are the most prevalent and important in the fashion industry because fashion brands are commercial firms relying on customers to make a profit, which makes customers a very important stakeholder to consider.

The qualitative results regarding newly developed BMs facilitating collaboration with customers contradict the theoretical expectations of Ghezzi et al. (2021) & Salge et al. (2012) that BMs need to be innovated towards an open BM first to facilitate collaboration with different stakeholders. The results provide new evidence that innovation towards an open BM is not a crucial first step. Newly developed circular BMs allow for collaboration with customers without having an open BM in the first place. This result builds on existing evidence from Hienerth et al. (2011) that BMs have to be innovated to integrate the participation of customers in essential business practices. In addition, this research provides a new insight to Hienerth et al. (2011) that especially newly developed circular BMs require customer collaboration (i.e. subscription-based, and peer-to-peer platform specifications of circular BMs). Therefore, in

line with hypothesis 1a, this research argues that certain types of BMI facilitate collaboration with customers.

In line with hypothesis 1b, the qualitative data suggest that customer collaboration leads to superior sustainability performance. This result advocates the same expectation as of Gelhard and von Delft (2016) that the integration of customers into business practices is positively related to a firm's sustainability performance. An addition from this research is that the results prove that customers are especially necessary in light of environmental sustainability because they are crucial in the execution of circular practices such as recycling, repurposing, and reusing.

Supplier Collaboration

The qualitative results suggest that after customers, suppliers are the most prevalent and important stakeholders to integrate into business practices. In line with hypothesis 2a, the qualitative results suggest that suppliers are necessary for the execution of circular BMs in pursuit of social and environmental sustainability performance. Moreover, the quantitative data analysis indicates a positive and strong effect of the relationship between BMI and supplier collaboration. The qualitative results challenge the expectations based on Grant & Baden-Fuller (2004) and Hung & Chou (2013) that BMs need to be innovated towards an open BM to integrate suppliers to benefit the firm's innovation processes and its resource base. The results provide new evidence that innovation towards an open BM is not a crucial first step because circular BMs appear to facilitate supplier collaboration as well. Therefore, both the qualitative and quantitative results support hypothesis 2a, claiming that certain types of BMI facilitate supplier collaboration.

The quantitative results might suggest that the relationship between supplier collaboration and CSP is not significant. However, based on the substantial evidence from the interviews and expectations based on Vachon and Klassen (2008), a more reasonable explanation is that supplier collaboration leads to superior sustainability performance. The qualitative results suggest that collaborating with suppliers improves social and environmental sustainability practices of fashion brands. These results partially fit with the theory of Vachon and Klassen (2008) that supplier collaboration improves environmental and economic firm performance. This research adds that social sustainability also appears to be a subject of interest in the fashion industry and economic sustainability is barely considered an area of improvement. All participants of this research agreed that financial stability, and thus economic sustainability, is a given fact before even environmental and social sustainability could be

considered. Therefore, in line with hypothesis 2b, supplier collaboration leads to superior sustainability performance.

NGO Collaboration

The quantitative and qualitative results disagree on the validity of the hypothesized relationship between BMI and NGO collaboration. The quantitative results suggest a positive and moderate effect of newly developed BMs enabling collaboration with NGOs. However, the qualitative results propose an unexpected dichotomy. On the one hand, only one participant acknowledges the necessity of an NGO in the execution of a new BM and thus supports the quantitative result. On the other hand, a more plausible explanation by the other five participants is that NGO collaboration is not crucial in the execution of a new BM. They rather consider NGOs as an external stakeholder who supports and guides their brand's goals from the outside than a stakeholder that ought to be internalized into their BM. This disagreement in the results on the validity of the hypothesized relationship between BMI and NGO collaboration may well arise from the lack of literature evidence. These results do contribute to a new insight into this literature gap through the conclusion that NGOs are not ought to be internalised in firms, but rather an external stakeholder guiding firm goals as proposed by the majority of the participants. Therefore, the results do not justify the expectation of hypothesis 3a that BMI facilitates NGO collaboration within a fashion brand.

The quantitative results might suggest that the relationship between NGO collaboration and CSP is non-existent. However, based on the qualitative results and the expectations based on Dahan et al. (2010) and Rondinelli & London (2003), an alternative and more persuasive explanation is that collaborating with NGOs has a positive effect on a firm's sustainability performance. The qualitative results describe that collaboration with an NGO leads to enhanced social and environmental sustainability performance. These results build on the existing evidence of Rondinelli and London (2003) that NGO collaboration enables access to necessary knowledge to deal with a firm's environmental sustainability challenges. In addition, the results partly fit with the theory of Dahan et al. (2010) that NGO collaboration has a positive effect on a firm's economic and social value creation. This research provides compelling evidence for value creation concerning environmental and social sustainability, however, an improvement in economic value creation remains undiscussed. To conclude, in line with hypothesis 3b, collaboration with NGOs leads to superior sustainability performance.

Government Collaboration

The quantitative results might suggest that government institutions are not considerable stakeholders, as all outcomes regarding government collaboration are non-significant. However, based on qualitative data, a more plausible explanation is that government institutions are crucial external forces with a decisive role in the fashion industry.

The results show the contrary of the expected hypothesized association 4a that innovated BMs enable government collaboration. Especially the qualitative results provide an explanation as all participants argue that government institutions are not identified as a stakeholder for fruitful collaboration. Government institutions are rather described as an external force exerting pressure on fashion brands to comply with rules and legislation, and so this result contradicts Micheli et al. (2012)'s claim that governments are transforming their BMs to enable collaboration. Therefore, this research provides a new insight that it appears that government institutions are not willing to open up their BM to foster collaboration as they rather continue to preserve the power balance.

Against the expectation of hypothesis 4b, government collaboration does not lead to superior sustainability performance. As mentioned, the qualitative results show that government institutions are not identified as a stakeholder to collaborate with. These results do not fit with the expectations based on Albino et al. (2012), Roy and Whelan (1992), von Malmborg (2007), and Wassmer et al. (2014) that collaboration with government institutions leads to superior sustainability performance. However, even though they are not appropriate for collaboration, they do have a significant influence on brands' sustainability performance. This research demonstrates that through government institutions' power to set up legislation and rules, their actions have consequences for the entire fashion industry as brands are pressured to comply, especially in light of enhanced environmental sustainability performance. This finding builds on existing evidence of research performed by Hart (1995) that governments' power to install legislation and rules influence the waste reduction of companies.

Competitor Collaboration

Both quantitative and qualitative results in addition to the lack of literature on competitor collaboration make it clear that competitors are a difficult stakeholder in the fashion industry.

The quantitative and qualitative results disagree regarding the relationship between BMI and competitor collaboration. The quantitative results might suggest that this relationship is existent and strong. However, based on the dichotomous qualitative results and the lack of evidence from previous research, a more plausible explanation is that competitors are not

necessary for the execution of newly developed BMs. The perspective of the opponents, in this case, is more reasonable than the perspective of the advocates of competitor collaboration. This leads to a rejection of the expected hypothesized relationship 5a that newly developed BMs enable competitor collaboration because fashion brands appear to be unwilling to open up their BM to foster collaboration with competitors.

Hypothesis 5b expected that competitor collaboration should increase CSP. However, the quantitative and qualitative results are in favour of the rejection of this hypothesis. The quantitative results show a non-existent relationship between competitor collaboration and superior sustainability performance. Moreover, opponents of competitor collaboration argue that fashion brands are not willing to share their intellectual property and partners and, therefore, not willing to collaborate with competitors for superior sustainability.

Fashion brand size and age

Based on prior research, it was expected that firm size had a significant effect on the environmental behaviour companies display (Apostolakou & Jackson, 2009; Baylis et al., 1998). Especially larger firms are more likely to adopt sustainability practices because of their visibility to society and their large resource base. However, this research delivers a contradictory insight in this regard. The data show a clear pattern regarding the group of 'SME fashion employees' as they appear to be highly concerned with environmental and social sustainability challenges and consequently innovate to implement sustainability practices in the core of their BM for superior sustainability performance. This result contradicts with the expectations based on Apostolakou and Jackson (2009) & Baylis et al. (1998) as smaller fashion brands employ more sustainability practices than larger brands. That is why this research implies that smaller and younger fashion brands are more agile and already 'born sustainable', making them more likely to achieve superior sustainability performance compared to larger brands. This research reveals that larger brands are stuck in path dependencies and face inertia regarding change towards superior sustainability performance. As the fashion industry is the second largest polluting industry in the world, the smaller and 'born sustainable' brands should take up a greater share of the industry to answer the urging call for change towards increased levels of sustainability.

6. Conclusion

This research aimed to answer the following question: *What type of stakeholder collaborations are required to translate business model innovation into superior corporate sustainability performance within the fashion industry?* This research concludes that newly developed BMs do lead to the superior sustainability performance of fashion brands and that collaboration with customers and suppliers is required in this internal transition. From an outside perspective, NGOs and government institutions behave like external stakeholders whose actions and decisions have a crucial impact on the sustainability performance of fashion brands. It turns out that real change in the fashion industry will be accomplished when all internal and external stakeholders work together. In addition to contributions to contemporary literature, this research identifies that economic sustainability is a given fact and environmental and social sustainability are the main focus areas of fashion brands. Furthermore, the size and age of fashion brands are of significant importance as small and young brands drive sustainability in the industry because BMI for sustainability is more prominent in their business practices.

6.1.   Practical implications

This research aimed to explore the impact of various stakeholder collaborations in the execution and transformation of BMI into superior sustainability performance of fashion brands. As five types of stakeholders were studied, only customers and suppliers appear to be useful in translating fashion brands' newly developed BMs towards superior sustainability performance. Therefore, it is recommended to fashion brands who are in pursuit of superior sustainability performance, either in the environmental or social aspect, to innovate their BM to a circular BM. Specifically, a subscription-based model or sharing platform are proven to be successful because they contribute to circular business practices and enhanced social conditions.

In addition to choosing circular BMs, fashion brands should especially look to integrate customers and suppliers in their BM for collaboration. These stakeholders contribute to an acceleration towards superior environmental or social performance. Customers are necessary for the execution of circular practices such as recycling, repurposing, and reusing. Suppliers are necessary in light of implementing sustainable manufacturing processes, but also concerning supervising sufficient working conditions in the factories. Moreover, fashion brands should seek to collaborate with NGOs, The Ellen MacArthur Foundation is highly recommended because it can facilitate a greater network of collaboration between multiple stakeholders in pursuit of superior sustainability performance.

Another practical insight of this research is that the fashion industry needs smaller and 'born sustainable' brands to accelerate the transition towards a more sustainable industry. Therefore, it is suggested to fashion entrepreneurs and/or designers who want to start a new brand, to set up a circular BM, be open to stakeholder collaboration, and stay relatively small to ensure sustainable manufacturing.

6.2.   Research limitations

The first limitation of this research concerns the difficulty of gathering quantitative data. The targeted sample was managers employed at fashion brands, where only one manager per brand could complete the survey. Trying to get into contact with these potential respondents was already difficult, let alone having a survey concerning sensitive topics in the fashion industry: innovation and sustainability. Consequently, this led to a sample size that was too small, which affected the reliability and generalizability of the quantitative data. This research aimed to be fully quantitative from the start, however, due to the fact that only 30 valid responses were administered, a qualitative study with interviews needed to be performed. Because of the interviews, the results of this research remain valid as the qualitative data compensated for the lack of quantitative data and both studies combined provided a holistic insight into this topic.

Another limitation of this research arises as a consequence of the lack of quantitative data and the need for interviews. The methodological choice of a combined method approach increases the complexity of evaluating the data. Where quantitative results showed the contrary to the qualitative results, this might lead to wrongfully derived conclusions. As the reliability and generalizability of the quantitative data are low, these results could be wrongfully ignored or rejected due to the small sample size. Therefore, due to the lack of quantitative data, these results cannot confirm or contradict the qualitative findings. However, the substantial qualitative evidence combined with findings from literature offered an in-depth and clear understanding of some of the proposed relationships in the conceptual model that the hypotheses could be rightfully supported or rejected.

The last limitation of this research concerns the generalisability of the quantitative and qualitative data sets. The respondents of both studies were predominantly employed in CSR/sustainability-related positions and at small and young fashion brands. Therefore, this could lead to a sustainability bias while answering the questions when compared to an employee in any other management position and/or employed at an established and big fashion brand. In addition, the majority of the respondents were Dutch or otherwise European citizens. This demographic fact influences the generalisability of the answers provided in this research

because a Western perspective is proposed. Innovation and sustainability are generally more an area of interest in Western countries than it is in developing countries where still the majority of apparel is manufactured. Western countries have higher economic welfare to innovate and choose sustainable manufacturing alternatives compared to developing countries. The inclusion of developing countries in this research could likely generate different results as perspectives on the importance of innovation and sustainability might differ. However, as this research employs a Western perspective due to its European focus, the inclusion of developing countries is beyond the scope of this research.

6.3.   Recommendations for future research

The limitations of this research highlight the need for future research concerning this topic. Firstly, it will be valuable if future research replicates this study with a larger sample size both for the survey and for the interviews. The survey should gather more respondents, preferably a minimum of 100 respondents to perform a sufficient data analysis. A higher number of participants for the interviews can lead to new insights because of a higher probability of different backgrounds. In addition, future studies should consider separate quantitative and qualitative studies on this topic because the complexity of evaluating combined data will be eliminated and this will reveal if results from single method studies differ.

The respondents of this research were primarily employed in CSR/sustainability-related positions and at small and young fashion brands. A potential sustainability bias can be avoided if future research incorporates respondents with varying backgrounds. A more diverse sample with start-ups, multinationals, sustainability-oriented and fast fashion brands should provide a more adequate representation of the entire fashion industry. In addition, as this research has a Western perspective, future research is needed to establish a global perspective on the topics of innovation and sustainability in the fashion industry. The Western perspective has more favourable circumstances regarding innovation and sustainability due to higher economic welfare. Future research with a global perspective is necessary because the majority of apparel suppliers and manufacturers are especially located in developing countries. By incorporating other continents and countries a more realistic view can be produced regarding the global status quo on innovation and sustainability practices.

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8. Appendices

Appendix 1. Survey

Q1 Dear participant,

My name is Julia Kieftenbeld and I am currently writing my Master thesis at Radboud University on the topic 'Innovation for Corporate Sustainability in The Fashion Industry: A Stakeholder Approach'. This research specifically focuses on the relationship between business model innovation and corporate sustainability performance of fashion companies. The potential effect of multiple stakeholders on this relationship is researched as well.

The survey starts with general questions and, thereafter, topic related questions will follow accompanied by an introductory text. The survey will only take around 8 minutes of your time. Your privacy is guaranteed because the answers are registered completely anonymous. Moreover, the provided answers will solely be used for the purpose of my thesis. Please know that you can withdraw from this research at any time. If there are any questions or issues regarding the survey, please contact me via e-mail: j.kieftenbeld@student.ru.nl.

Thank you in advance for completing this survey, it is highly appreciated.

To continue to the survey, click the arrow below. By continuing with the survey, you automatically give permission to use your answers for the purpose of this research.

Q2 Please indicate in which industry your company is operating:

○ Fashion industry (1)

○ Other, namely: (2) _____

Q3 How many years does your company exist?

_____

Q4 How many employees does your company have?

○ 1 - 50 (1)

○ 51 - 100 (2)

○ 101 - 500 (3)

○ 501 - 1000 (4)

○ More than 1000 (5)

Q5 Where is the headquarters of your company located?

_____

Q6 What is your job title?

○ Chief Executive Officer (CEO) (1)

○ Chief Operating Officer (COO) (2)

○ Chief Technology Officer (CTO) (3)

○ President (4)

○ Chairman (5)

○ Director (6)

○ Executive vice president (7)

○ Vice president (8)

○ Senior consultant (9)

○ President & CEO (10)

○ General manager (11)

○ Other, namely: (12) _____

Q7 How many years have you been employed at this company?

○ 0 - 1 year (1)

○ 1 - 5 years (2)

○ 5 - 10 years (3)

○ 10 - 15 years (4)

○ Longer than 15 years (5)

Q8 The following statements are regarding the Sustainability Performance of your company. Corporate Sustainability Performance can be viewed through an environmental, social, and economic value creation perspective, meaning how your company creates value for the environment, society, and the company's economic aspect (i.e. revenue).

Q9 Please indicate to what extent the statements below apply to your company regarding the Sustainability Performance

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
We are the first that offer environmental-friendly products/services at the marketplace (1)	○	○	○	○	○	○	○
Our competitors consider us as a leading company in the field of sustainability (2)	○	○	○	○	○	○	○
We develop new products/services or improve existing products/services that are regarded sustainable for society and environment (3)	○	○	○	○	○	○	○
Our reputation in terms of sustainability is better than the sustainability reputation of our competitors (4)	○	○	○	○	○	○	○
Compared to our competitors, we more thoroughly respond to societal and ethical demands (i.e. labour conditions) (5)	○	○	○	○	○	○	○

Q10 The following statements are regarding the degree of Business Model Innovation within your company. Business Model Innovation can be classified into three dimensions: Value Creation Innovation, Value Proposition Innovation, and Value Capture Innovation. Value Creation Innovation concerns how value within your company is created (i.e. capabilities, technology/equipment, partnerships, and processes). Value Proposition Innovation concerns what value your company offers to customers (i.e. products or services, customers/markets, channels, customer relationships). Value Capture Innovation concerns the way how your company captures value (i.e. revenue models, cost structures).

Q11 Please indicate to what extent the statements below apply to your company regarding Business Model Innovation: Value Creation Innovation

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
Our employees constantly receive training in order to develop new competences (1)	○	○	○	○	○	○	○
Relative to our direct competitors, our employees have very up-to-date knowledge and capabilities (2)	○	○	○	○	○	○	○
We constantly reflect on which new competencies need to be established in order to adapt to changing market requirements (3)	○	○	○	○	○	○	○
We keep the technical resources of our company up-to-date (4)	○	○	○	○	○	○	○
Relative to our competitors our technical equipment is very innovative (5)	○	○	○	○	○	○	○

We regularly utilize new technical opportunities in order to extend our product and service portfolio (6)	○	○	○	○	○	○	○
We are constantly searching for new collaboration partners (7)	○	○	○	○	○	○	○
We regularly utilize opportunities that arise from integration of new partners into our processes (8)	○	○	○	○	○	○	○
We regularly evaluate the potential benefits of outsourcing (9)	○	○	○	○	○	○	○
New collaboration partners regularly help us to further develop our business model (10)	○	○	○	○	○	○	○
We were recently able to significantly improve our internal processes (11)	○	○	○	○	○	○	○

We utilize innovation procedures and processes during the manufacturing of our products (12)	○	○	○	○	○	○	○
Existing processes are regularly assessed and significantly changed if needed (13)	○	○	○	○	○	○	○

Q12 Please indicate to what extent the statements below apply to your company regarding Business Model Innovation: Value Proposition Innovation

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
We regularly address new, unmet customer needs (1)	○	○	○	○	○	○	○
Our products or services are very innovative in relation to our competitors (2)	○	○	○	○	○	○	○
Our products or services regularly solve customer needs, which were not solved by competitors (3)	○	○	○	○	○	○	○
We regularly take opportunities that arise in new or growing markets (4)	○	○	○	○	○	○	○
We regularly address new, unserved market segments (5)	○	○	○	○	○	○	○
We are constantly seeking new customer segments and markets for our products and services (6)	○	○	○	○	○	○	○
We regularly utilize new distributions channels for our products and services (7)	○	○	○	○	○	○	○
Constant changes of our channels have led to improved efficiency of our channel functions (8)	○	○	○	○	○	○	○

We consistently change our portfolio of distribution channels (9)	○	○	○	○	○	○	○
We try to increase customer retention by new service offerings (10)	○	○	○	○	○	○	○
We emphasize innovative/modern actions to increase customer retention (e.g. CRM) (11)	○	○	○	○	○	○	○
We recently took many actions in order to strengthen customer relationships (12)	○	○	○	○	○	○	○

Q13 Please indicate to what extent the statements below apply to your company regarding Business Model Innovation: Value Capture Innovation

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
We recently developed new revenue opportunities (e.g. additional sales, cross/selling) (1)	○	○	○	○	○	○	○
We increasingly offer integrated services (e.g. maintenance contracts) in order to realize long-term financial returns (2)	○	○	○	○	○	○	○
We recently complemented or replaced one-time transaction revenues with long-term recurring revenue models (e.g. leasing) (3)	○	○	○	○	○	○	○
We do not rely on the durability of our existing revenue sources (4)	○	○	○	○	○	○	○
We regularly reflect on our price-quantity strategy (5)	○	○	○	○	○	○	○

We actively seek opportunities to save manufacturing costs (6)	○	○	○	○	○	○	○
Our production costs are constantly examined and if necessary amended according to market prices (7)	○	○	○	○	○	○	○
We regularly utilize opportunities which arise through price differentiation (8)	○	○	○	○	○	○	○

Q14 The following statements are regarding the degree in which your company potentially collaborates with stakeholders. For the purpose of this research, the potential stakeholders your firm can collaborate with are: Customers, Suppliers, NGOs, Governments, and Competitors.

Q15 Please indicate to what extent the statements below apply to your company regarding Customer Collaboration

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
Our key customers often put forward improving proposes for our products (1)	○	○	○	○	○	○	○
We often hear key customers' opinions on using new business practices (2)	○	○	○	○	○	○	○
We involve key customers in various stages of value creation, such as the key processes of manufacturing and marketing (3)	○	○	○	○	○	○	○
Our key customers have major influence on our business practices, such as the key processes of manufacturing and marketing (4)	○	○	○	○	○	○	○

There is a strong consensus in our firm that customer collaboration is needed in new business practice development (5)	○	○	○	○	○	○	○
We have continuous improvement programs that include our key customers (6)	○	○	○	○	○	○	○

Q16 Please indicate to what extent the statements below apply to your company regarding Supplier Collaboration

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
We involve key suppliers in various stages of value creation, such as the key process of manufacturing (1)	○	○	○	○	○	○	○
Our key suppliers have major influence on our business practices, such as they key process of manufacturing (2)	○	○	○	○	○	○	○
There is a strong consensus in our firm that supplier integration/collaboration is needed in operational business practices (3)	○	○	○	○	○	○	○
We have continuous improvement programs that include our key suppliers (4)	○	○	○	○	○	○	○

Q17 Please indicate to what extent the statements below apply to your company regarding NGO Collaboration

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
We have developed close working relationships with a number of NGOs (1)	○	○	○	○	○	○	○
We have been engaged in long-lasting relationships with NGOs (2)	○	○	○	○	○	○	○
We have difficulty developing close working relationships with NGOs (3)	○	○	○	○	○	○	○
Working relationships between us and NGOs are only temporary (4)	○	○	○	○	○	○	○
We have good relationships with a variety of NGOs (5)	○	○	○	○	○	○	○
We are interested in forming long-term relationships with NGOs (6)	○	○	○	○	○	○	○

We work with NGOs on short, specific activities (7)	○	○	○	○	○	○	○
We prefer to work with a range of different NGOs on various projects rather than as opposed to working with one or two NGOs on a few projects (8)	○	○	○	○	○	○	○

Q18 Please indicate to what extent the statements below apply to your company regarding Government Collaboration

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
We have developed close working relationships with a number of government institutions (1)	○	○	○	○	○	○	○
We have been engaged in long-lasting relationships with government institutions (2)	○	○	○	○	○	○	○
We have difficulty developing close working relationships with government institutions (3)	○	○	○	○	○	○	○
Working relationships between us and government institutions are only temporary (4)	○	○	○	○	○	○	○
We have good relationships with a variety of government institutions (5)	○	○	○	○	○	○	○

We are interested in forming long-term relationships with government institutions (6)	○	○	○	○	○	○	○
We work with government institutions on short, specific activities (7)	○	○	○	○	○	○	○
We prefer to work with a range of different government institutions on various projects rather than as opposed to working with one or two government institutions on a few projects (8)	○	○	○	○	○	○	○

Q19 Please indicate to what extent the statements below apply to your company regarding Competitor Collaboration

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
We are in close competition with our partners (1)	○	○	○	○	○	○	○
We collaborate with competitors to achieve a common goal (2)	○	○	○	○	○	○	○
An active competition with our collaborators is important to us (3)	○	○	○	○	○	○	○

End of Block: Stakeholder Collaboration

Start of Block: The End

Q20 Dear participant,

Thank you for your contribution to my research. If you are interested in receiving a summary of my research findings, please enter your email address below.

_____

End of Block: The End

Appendix 2. Interview guides

Appendix 2.1. Interview guide fashion brands (EN)

Goal of the research: To explore what the influence is of stakeholder collaborations (with, for example: customers, suppliers, NGOs, governments, competitors) on the relationship between business model innovation and corporate sustainability performance of companies in the fashion industry.

Goal of the interview: Gain insight into business model innovation and corporate sustainability performance at fashion company X and if/which stakeholder collaborations influence this.

Interview with: Management positions at fashion companies.

Type of questions: Open questions.

Order of questions: General questions first, theme questions follow.

Start of interview
- Introduce myself
- Introduce my research (see goal of research)
- State that anonymity is guaranteed (code will be used)
- State that he/she can interrupt me if anything is unclear
- Ask if it is okay that I will start the recording and move on to the interview

Interview
General questions
Question 1. Could you please introduce yourself and tell me about your position within the company?

Question 2. How many years have you been employed at company X?

Question 3. How many years does company X exist?

Question 4. How many employees does company X have?

Topic related questions
Question 5. What does your company's business model look like? (Could you give a brief overview of this?)

Question 6. From your experience, how sustainable is company X?
- **Definition sustainability:** Sustainability can be defined as meeting the current needs of society without compromising the ability of future generations to meet their own needs. Think of the TBL: environmental, social, and economic value creation. Meaning caring for the environment, social equality, and economic development. → What does company X do regarding these three aspects of the TBL.

Question 7. How might the development of new business models contribute to superior sustainability performance?
- **Meaning superior sustainability performance:** caring better for the environment (less CO2 emissions, less water use, less use of chemicals), leads to more social equality

(working conditions, human rights), or better economic development (for the company or society)
- **Definition Business Model Innovation:** Innovating the way companies create value for customers (e.g. products/services, distribution channels, customer relationships) and/or capture value (e.g. revenue models and cost structures)
- **Definition Corporate Sustainability Performance:** The sustainability performance of a company in terms of economic, social, and environmental value creation.

Now I would like to talk about how various stakeholders play a role in new business models for superior sustainability performance

Question 8. Can you please describe the relevance and role of customers in transferring new business models into superior sustainability performance?

Question 9. Can you please describe the relevance and role of suppliers in transferring new business models into superior sustainability performance?

Question 10. Can you please describe the relevance and role of NGOs in transferring new business models into superior sustainability performance?

Question 11. Can you please describe the relevance and role of government in transferring new business models into superior sustainability performance?

Question 12. Can you please describe the relevance and role of competitors in transferring new business models into superior sustainability performance?

Question 13. Having talked about these stakeholders, to what extent do external stakeholders need to become integrated into new business models in order to achieve superior sustainability performance?

Question 14. Having talked about all the stakeholders (customers, suppliers, NGOs, government, competitors), which is the most important for your company?

Question 15. Have we missed any stakeholders that are relevant to your company? If so, which ones and how would you describe their role?

End of interview

Summarize answers

Do you have anything to add?

Do you want to see the transcript?

Appendix 2.2. Interview guide industry experts (NL)

Doel van het onderzoek: Onderzoeken wat het effect is van externe samenwerkingen (met bv: klanten, leveranciers, overheid, NGOs en concurrenten) op de relatie tussen bedrijfsmodel innovatie en duurzaamheidsprestaties van bedrijven in de mode-industrie.

Doel van het interview: Inzicht krijgen in bedrijfsmodel innovatie en duurzaamheidsprestaties bij modebedrijf X en of/welke externe samenwerkingen effect hebben hierop.

Interview met: Managementfuncties in modebedrijven.

Soort vragen: Open vragen.

Volgorde van vragen: Eerst algemene vragen, dan per thema hoe- en waarom-vragen.

Start van het interview
- Mezelf introduceren
- Mijn onderzoek introduceren
- Vermelden dat anonimiteit is gegarandeerd
- Vermelden dat onderbreken altijd mag om opheldering te vragen
- Vragen of het akkoord is dat ik de audio opname start en dat we doorgaan naar het interview

Interview
Algemene vragen
Vraag 1. Kunt u uzelf voorstellen en me vertellen over uw functie?

Vraag 2. Hoeveel jaar bent u werkzaam in de mode-industrie?

Thema gerelateerde vragen
Vraag 3. Hoe ziet op dit moment het dominante businessmodel in de mode-industrie eruit volgens u? (Dominant = Welk type businessmodel is het meest aanwezig: i.e. fast fashion, circulair) → **Doorvragen**: Hoe zou volgens u het ideale/dominante businessmodel van de mode-industrie eruit moeten zien?

Vraag 4. Vanuit uw ervaring, hoe is de mode-industrie momenteel met duurzaamheid initiatieven bezig?
- **Definitie duurzaamheid:** Duurzaamheid kan worden gedefinieerd als het voorzien in de huidige behoeften van de samenleving zonder het vermogen van toekomstige generaties om in hun eigen behoeften te voorzien in gevaar te brengen. Denk aan de TBL: ecologische, sociale en economische waarde creatie. Dat betekent zorg voor het milieu, sociale rechtvaardigheid en economische ontwikkeling. → Wat doet bedrijf X met betrekking tot deze drie aspecten van de TBL.

Vraag 5. Hoe kan de ontwikkeling van nieuwe businessmodellen bijdragen aan superieure duurzaamheidsprestaties in uw opzicht?
- **Definitie superieure duurzaamheidsprestaties:** beter zorgen voor het milieu (minder CO_2 uitstoot, minder water verbruik, minder gebruik van chemicaliën), meer sociale

gelijkheid (arbeidsomstandigheden, mensenrechten) en/of betere economische ontwikkeling (voor het bedrijf en/of de maatschappij)
- **Definitie Business Model Innovation:** Innoveren van de manier waarop bedrijven waarde creëren voor klanten (bijv. producten/diensten, distributiekanalen, klantrelaties) en/of waarde vastleggen (bijv. verdienmodellen en kostenstructuren)
- **Definitie Corporate Sustainability Performance:** De duurzaamheidsprestaties van een bedrijf in termen van economische, sociale en ecologische waarde creatie.

Nu zou ik het graag met u willen hebben over hoe verschillende externe stakeholders een rol spelen in nieuwe businessmodellen voor superieure duurzaamheidsprestaties

Vraag 6. Kun u de relevantie en rol van klanten beschrijven bij het omzetten van nieuwe businessmodellen in superieure duurzaamheidsprestaties?

Vraag 7. Kun u de relevantie en rol van leveranciers beschrijven bij het omzetten van nieuwe businessmodellen in superieure duurzaamheidsprestaties?

Vraag 8. Kun u de relevantie en rol van NGOs beschrijven bij het omzetten van nieuwe businessmodellen in superieure duurzaamheidsprestaties?

Vraag 9. Kun u de relevantie en rol van de overheid beschrijven bij het omzetten van nieuwe businessmodellen in superieure duurzaamheidsprestaties?

Vraag 10. Kun u de relevantie en rol van concurrenten beschrijven bij het omzetten van nieuwe businessmodellen in superieure duurzaamheidsprestaties?

Vraag 11. Nu we deze stakeholders hebben besproken, in hoeverre moeten externe stakeholders worden geïntegreerd in nieuwe businessmodellen om superieure duurzaamheidsprestaties te bereiken?

Vraag 12. Nu we alle stakeholders hebben besproken, wie is/zijn het belangrijkste vanuit uw perspectief?

Vraag 13. Hebben we belanghebbenden gemist die relevant zijn in dit proces? Zo ja, wie en hoe zou u hun rol omschrijven?

Einde interview

Samenvatten van de antwoorden

Heeft u nog niets toe te voegen?

Wilt u het interview transcript zien?

Appendix 3. Descriptive statistics

Appendix 3.1. Participant descriptive statistics

Table 14

Descriptive Statistics Job Title

	Frequency	Percentage
Job Title		
CEO	5	16.13%
COO	1	3.23%
Director	2	6.45%
Senior consultant	1	3.23%
General manager	1	3.23%
Other	21	67.74%

Table 15

Descriptive Statistics Job Tenure

	Frequency	Percentage
Job Tenure		
0-1 year	5	16.13%
1-5 years	18	58.06%
5-10 years	7	22.58%
10-15 years	1	3.23%

Appendix 3.2. Firm descriptive statistics

Table 16

Descriptive Statistics Firm Size

	Frequency	Percentage
Firm Size		
1-50	14	45.16%
51-100	6	19.35%
101-500	8	25.80%
500-1000	2	6.45%
>1000	1	3.23%

Table 17

Descriptive Statistics Firm Age

	Frequency	Percentage
Firm Age		
0-5 years	11	35.48%
5-10 years	6	19.35%
10-15 years	4	12.90%
15-20 years	4	12.90%
>20 years	6	19.35%

Table 18

Descriptive Statistics Country of Firm Headquarters

	Frequency	Percentage
Country		
Netherlands	15	48.39%
Sweden	2	6.45%
Denmark	4	12.90%
Norway	1	3.23%

United Kingdom	4	12.90%
Germany	1	3.23%
Belgium	1	3.23%
Italy	1	3.23%
France	1	3.23%
Hungary	1	3.23%

Appendix 4: Assessment measurement model

Table 19

Indicator Loadings

	CSP	BMI: VCrI	BMI: VPI	BMI: VCaI	CustomerC	SupplierC	NGOC	GovernmentC	CompetitorC
CSP1	.63								
CSP2	.80								
CSP3	.74								
CSP4	.86								
CSP5	.80								
BMI_VCrI1		.72							
BMI_VCrI2		.49							
BMI_VCrI3		.48							
BMI_VCrI4		.55							
BMI_VCrI5		.66							
BMI_VCrI6		.73							
BMI_VCr17		.55							
BMI_VCrI8		.75							
BMI_VCrI9		.74							
BMI_VCrI10		.53							
BMI_VCrI11		.64							
BMI_VCrI12		.71							
BMI_VCrI13		.79							
BMI_VPI1			.64						
BMI_VPI2			.56						
BMI_VPI3			.59						
BMI_VPI4			.69						
BMI_VPI5			.53						
BMI_VPI6			.57						
BMI_VPI7			.72						
BMI_VPI8			.74						
BMI_VPI9			.51						
BMI_VPI10			.56						
BMI_VPI11			.80						
BMI_VPI12			.77						
BMI_VCaI1				.37					
BMI_VCaI2				.42					
BMI_VCaI3				.54					
BMI_VCaI4				.42					
BMI_VCaI5				.35					
BMI_VCaI6				.40					
BMI_VCaI7				.44					
BMI_VCaI8				.47					
CustomerC1					.75				
CustomerC2					.63				
CustomerC3					.83				
CustomerC4					.83				
CustomerC5					.69				
CustomerC6					.79				
SupplierC1						.83			
SupplierC2						.83			
SupplierC3						.74			
SupplierC4						.60			
NGOC1							.85		
NGOC2							.82		
NGOC3							-.53		
NGOC4							-.57		
NGOC5							.74		

NGOC6	.54		
NGOC7	-.10		
NGOC8	.28		
GovernmentC1		.76	
GovernmentC2		.69	
GovernmentC3		-.44	
GovernmentC4		-.60	
GovernmentC5		.66	
GovernmentC6		.58	
GovernmentC7		.14	
GovernmentC8		.22	
CompetirorC1			.50
CompetitorC2			.17
CompetitorC3			.61

Table 20

Cross-loadings

	CSP	BMI: VCrI	BMI: VPI	BMI: VCaI	CustomerC	SupplierC	NGOC	GovernmentC	CompetitorC
CSP1	.63	.66	.34	.12	.07	.29	.29	.06	**.74**
CSP2	**.80**	.54	.33	-.09	.06	.67	.47	.25	.30
CSP3	**.74**	.66	.29	-.04	-.02	.34	.22	.06	.55
CSP4	**.86**	.54	.30	-.011	.20	.66	.54	.29	.41
CSP5	**.80**	.59	.45	-.04	.25	.69	.68	.30	.50
BMI_VCrI1	.71	.72	**.80**	.04	.15	.71	.50	.04	.66
BMI_VCrI2	.49	.49	.54	.05	.21	.55	.46	.10	**.75**
BMI_VCrI3	.18	.48	**.52**	.38	-.08	.33	.22	-.05	.48
BMI_VCrI4	.51	**.55**	.44	.13	-.05	.52	.20	.01	.42
BMI_VCrI5	.46	.66	.58	.16	.18	.31	.24	.01	**.73**
BMI_VCrI6	.26	**.73**	.64	.29	-.12	.27	.23	-.19	.59
BMI_VCr17	**.61**	.55	.33	.33	-.02	.40	.55	.21	.49
BMI_VCrI8	.73	**.75**	.57	.39	.27	.53	.48	.14	.58
BMI_VCrI9	.42	**.74**	.48	.31	.10	.20	.26	-.03	.50
BMI_VCrI10	.33	.54	.25	**.54**	.17	.18	.17	.005	.40
BMI_VCrI11	.30	.64	.38	.13	.08	-.07	.05	-.32	**.77**
BMI_VCrI12	**.71**	.71	.27	.13	.17	.51	.32	.19	.62
BMI_VCrI13	.70	**.79**	.49	.12	.07	.52	.40	-.02	.62
BMI_VPI1	.28	.51	**.64**	.08	.22	.63	.39	.11	.26
BMI_VPI2	**.64**	.58	.56	-.11	.22	.53	.46	-.05	.48
BMI_VPI3	.64	.53	.59	-.20	.13	**.66**	.40	-.08	.52
BMI_VPI4	.28	.57	.69	.21	.08	.17	.22	-.10	**.86**
BMI_VPI5	-.10	.24	**.53**	.24	.23	.22	.13	-.17	.37
BMI_VPI6	-.09	.33	**.57**	.20	.24	.07	.27	-.21	.46
BMI_VPI7	.44	.47	**.72**	.23	-.18	.53	.40	.26	.48
BMI_VPI8	.42	.58	**.74**	.28	-.26	.48	.37	.03	.60
BMI_VPI9	.10	.26	.51	.47	.05	.12	-.02	.-10	**.58**
BMI_VPI10	.21	.43	**.56**	.31	.23	.15	.13	-.40	.48
BMI_VPI11	.37	.66	.80	.31	.02	.39	.48	-.16	**.82**
BMI_VPI12	.14	.53	**.77**	.16	-.06	.33	.32	-.18	.59
BMI_VCaI1	.18	.34	**.40**	.37	-.13	.14	.09	-.01	.05
BMI_VCaI2	.09	.38	.24	**.42**	.08	.17	.04	.14	-.02
BMI_VCaI3	.23	.36	.14	**.54**	.33	.13	.06	.41	.38
BMI_VCaI4	.20	.17	-.03	**.42**	.05	.07	-.23	.15	.05
BMI_VCaI5	-.05	.01	.04	**.35**	.18	.18	.18	.14	.18
BMI_VCaI6	-.50	-.15	.03	**.40**	.21	-.54	-.54	-.42	.01
BMI_VCaI7	-.39	-.01	.06	**.44**	.41	-.37	-.23	-.26	.27
BMI_VCaI8	.02	.04	.12	**.47**	.18	.09	.0003	.12	.29
CustomerC1	.27	.11	.05	.04	**.75**	.23	.23	.29	.22
CustomerC2	.20	.19	.13	.07	**.63**	.18	.11	.04	.15
CustomerC3	.12	.18	.12	.46	**.83**	.13	.07	-.002	.17
CustomerC4	.02	.05	-.02	.41	**.83**	-.06	-.05	.05	.31
CustomerC5	.18	.10	.09	.29	**.69**	.46	.24	.29	.18
CustomerC6	-.05	.002	.05	.47	**.79**	.01	.09	.11	.39
SupplierC1	.68	.56	.58	-.04	.17	**.83**	.55	.36	.33
SupplierC2	.45	.31	.31	-.11	.17	**.83**	.57	.48	.04
SupplierC3	.53	.48	.34	.10	.04	**.74**	.46	.29	.21
SupplierC4	.46	,42	.47	-.05	.22	.60	.50	.11	**.63**
NGOC1	.52	.38	.38	-.35	.06	.59	**.85**	.40	.57
NGOC2	.51	.44	.47	-.08	.12	.68	**.82**	.35	.56

NGOC3	-.31	-.22	-.26	**.14**	-.11	-.59	-.53	-.39	-.13
NGOC4	-.35	-.39	-.42	**.03**	-.09	-.38	-.57	-.33	-.58
NGOC5	.55	.30	.38	-.17	.06	.58	**.74**	.36	.49
NGOC6	.10	.19	.0009	.01	.20	.06	**.54**	.36	.37
NGOC7	**.08**	.02	-.07	-.13	-.06	-.02	-.10	-.08	-.18
NGOC8	.13	.24	.09	.12	.02	-.12	.28	.18	**.54**
GovernmentC1	.44	.06	-.10	-.23	.09	.51	.47	**.76**	.17
GovernmentC2	.31	.04	.03	-.13	.21	.54	.45	**.69**	-.02
GovernmentC3	-.08	.23	**.46**	-.11	.10	-.04	-.05	-.44	.18
GovernmentC4	-.02	-.11	-.13	-.22	**.01**	-.29	-.45	-.60	-.39
GovernmentC5	.06	.006	-.04	.24	.11	.18	.24	**.66**	.38
GovernmentC6	-.09	-.04	-.19	.40	.19	-.10	.18	**.58**	.27
GovernmentC7	**.34**	.05	.03	-.17	.20	.18	.03	.15	.16
GovernmentC8	.07	-.04	.03	-.06	.14	.08	.22	**.22**	.03
CompetitorC1	.14	.21	.29	.30	.05	-.06	.24	.12	**.50**
CompetitorC2	.33	.28	.30	-.05	.24	.49	**.50**	.28	.17
CompetitorC3	.47	**.71**	.59	.17	.24	.31	.42	.13	.61

Table 21

Composite Reliability After Deletion of Loadings <.40

Construct	Dijkstra-Henseler's rho (ρ_A)	Jöreskog's rho (ρ_c)	Cronbach's alpha (α)
CSP	.88	.83	.79
BMI_VCrI	.91	.90	.90
BMI_VPI	.90	.89	.89
BMI_VCaI	.63	.61	.60
CustomerC	.89	.89	.89
SupplierC	.85	.84	.83
NGOC	.88	.87	.86
GovernmentC	.79	.78	.78
CompetitorC	.50	.50	.50

Table 22

Composite Reliability Before Deletion of Loadings <.40

Construct	Dijkstra-Henseler's rho (ρ_A)	Jöreskog's rho (ρ_c)	Cronbach's alpha (α)
CSP	.88	.83	.79
BMI_VCrI	.91	.90	.90
BMI_VPI	.90	.89	.89
BMI_VCaI	.65	.64	.63
CustomerC	.89	.89	.89
SupplierC	.85	.84	.83
NGOC	.87	.83	.81
GovernmentC	.79	.71	.65
CompetitorC	.49	.41	.32

Table 23

Indicator Multicollinearity

	CSP	BMI	CustomerC	SupplierC	NGOC	GovernmentC	CompetitorC
CSP1	1.80						
CSP2	3.71						

Item	Col1	Col2	Col3	Col4	Col5	Col6	Col7
CSP3	2.43						
CSP4	4.17						
CSP5	3.07						
BMI_VCrIscore		1.87					
BMI_VPIscore		1.85					
BMI_VCaIscore		1.03					
CustomerC1			2.11				
CustomerC2			1.65				
CustomerC3			3.13				
CustomerC4			4.30				
CustomerC5			1.77				
CustomerC6			2.97				
SupplierC1				3.40			
SupplierC2				3.24			
SupplierC3				1.73			
SupplierC4				1.30			
NGOC_1					3.76		
NGOC_2					3.55		
NGOC_5					2.32		
NGOC_6					1.42		
GovernmentC1						3.78	
GovernmentC2						3.31	
GovernmentC5						2.29	
GovernmentC6						1.93	
CompetitorC1							1.13
CompetitorC3							1.13