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## **SUSTAINABILITY-ORIENTED TEXTILE/FASHION PARTNERSHIPS: MECHANISMS AND LEVELS OF CHANGE**

### **ABSTRACT**

Firms engage in partnerships to address various sustainability issues such as greenhouse gas emissions, cleaner production, labour rights or working conditions in their operations and throughout their supply chains. These partnerships utilise various mechanisms that can be seen as enablers of change, including product development, process enhancements, policy-related initiatives and awareness-raising campaigns. Through these mechanisms, partnerships can seek to achieve change at the firm, industry, supply chain and societal levels. This paper studies the relationship between these mechanisms and firms' targeted level of change in textiles/fashion. We analyse 444 sustainability partnerships using a mixed-method approach. We find that partnerships targeting these broader levels focus more on *social sustainability issues* in this industry. Those targeting *society-level partnerships* involve cross-sector partners. Our study adds to the conversations about sustainability-oriented partnerships by demonstrating how mechanism-change dynamics can be contextual and industry-specific.

**Keywords:** partnerships, sustainability, textiles, fashion, change, mechanisms

## **SUSTAINABILITY-ORIENTED TEXTILE/FASHION PARTNERSHIPS: MECHANISMS AND LEVELS OF CHANGE**

The textiles/fashion industry is the second most polluting industry, following oil extraction and production (Diabat, Kannan, & Mathiyazhagan, 2014). The industry is responsible for environmental impacts that include excessive water use and water pollution (Abbas, Chiang Hsieh, Techato, & Taweekun, 2020), GHG emissions from processing fossil fuels (Franco, 2017), and the use of hazardous chemicals (Khurana & Ricchetti, 2016). It also has a long history of social sustainability issues such as poor working conditions (Haug & Busch, 2015), health and safety issues (Cesar da Silva, Cardoso de Oliveira Neto, Ferreira Correia, & Pujol Tucci, 2021), abuses of human rights that include child labour and modern slavery (Peake & Kenner, 2020; Thorisdottir & Johannsdottir, 2020).

Due to the complexity and interdependence of sustainability issues, industry actors cannot tackle these challenges independently (Hartmann, Hofman, & Stafford, 1999; Niesten, Jolink, Lopes de Sousa Jabbour, Chappin, & Lozano, 2017). Instead, they address these issues collaboratively through various types of partnerships (Beyers & Heinrichs, 2020). This is particularly necessary for the textiles/fashion industry, which is generally characterised by global vertically disintegrated value networks. Because of these complex value networks, in-house sustainability solutions would not suffice, and cross-border and cross-sector collaborations would play an important role. A recent review of sustainable textile and fashion partnerships shows that such collaborations include green supply networks, public-private partnerships, multi-stakeholder initiatives, transnational advocacy coalitions, and strategic partnerships (Beyers & Heinrichs, 2020). Extant literature has shown various modes of collaborative governance for the transition to sustainable textiles (Beyers & Heinrichs, 2020). However, to date, there has not been an empirical exploration that maps the mechanisms, and targeted levels of change, types, issues and sustainability dimensions

(environmental/social) at sustainable textile/fashion partnerships. Such an exploration would provide a roadmap for the textile and fashion industry and generate new insights that inform the literature on sustainability partnerships.

In this article, we aim to answer two questions. The first question is what the mechanisms of sustainable textile/fashion partnerships are. Herein, by mechanisms, we mean the tools that partners use to reach out beyond the partnership boundaries, including product, process, policy and awareness-raising. The second is how these mechanisms associate to partnerships' targeted change levels, including firm, industry, supply chain, and societal levels.

We analyse 444 sustainability-oriented textile/fashion partnerships announced in the Factiva database to answer these questions. We conduct a mixed-method analysis (qualitative content analysis and logistic regression) based on the framework of Stadtler and Lin (2019). Distinctively, our analysis focuses on the specific context of the textiles/fashion industry, includes both environmental and social dimensions of sustainability and considers a wide range of cross-sector partnerships in addition to inter-firm partnerships. Thus, we contribute to the scholarly conversation on sustainability issues within textiles/fashion (Mair, Druckman, & Jackson, 2016; Moorhouse & Moorhouse, 2017; Niinimäki & Hassi, 2011) and more specifically add to the ongoing literature regarding the motivations, mechanisms and levels of change of sustainable textile/fashion partnerships (Beyers & Heinrichs, 2020; Jastram & Schneider, 2015; Niesten & Jolink, 2020; Stadtler & Lin, 2019). This is a valuable contribution because, unlike other sectors like energy, the unsustainability of the textiles/fashion industry is a relatively recent realisation both to industry actors and in scholarly research. We also provide pathways for partnership management professionals in textiles/fashion by demonstrating how they could better utilise different collaborative

initiatives to trigger a multi-level and multi-dimensional change in their firms, industries, supply chains and broader society.

The remainder of this paper is as follows. In Literature Review, we provide brief reviews of the literature on sustainability issues in the textiles industry and sustainability-oriented partnerships' motivations, specifically mechanisms and targeted levels of change. In Methods, we offer detailed stages of data collection and analysis. Findings demonstrate our empirical results from the analysis of 444 sustainable textile/fashion partnerships, their mechanisms, and targeted level of change. In Discussion and Conclusion, we discuss our findings and critically evaluate the future of partnerships towards a sustainable future of the textile/fashion industry.

## **LITERATURE REVIEW**

### ***Sustainability in the Textile and Fashion Industry***

Since the 1980s, the textile/fashion industry has changed significantly. The most important change has been the increase of the speed-to-market as fast fashion became mainstream (Bhardwaj & Fairhurst, 2010). With this trend, clothing production has almost doubled over the last 15 years (Freudenreich & Schaltegger, 2020). Simultaneously, combined with the internationalisation of supply chains and export-led growth strategies, manufacturing shifted to the developing countries (Taplin, 2014), leading to many social sustainability issues in countries such as India, Bangladesh, Pakistan (Saha, Dey, & Papagiannaki, 2021). In 2013, Rana Plaza in Bangladesh, housing five garment factories supplied to global fast-fashion brands such as Primark, collapsed and killed at least 1,132 people and injured more than 2,500 (Williamson & Lutz, 2019). This disaster brought media and public attention and further scrutiny to the textile/fashion industry's unsustainable practices, increasing pressures from NGOs and civil society to address environmental and

societal issues (Thorisdottir & Johannsdottir, 2020), motivating industry actors to take action (Ozdamar Ertekin, Atik, & Murray, 2020).

In the textile/fashion industry, environmental sustainability issues include excessive water use, wastewater and water pollution (Abbas et al., 2020; Cesar da Silva et al., 2021; de Oliveira Neto et al., 2019; Jia et al., 2020; Søndergård et al., 2004), air pollution and GHG emissions (Jia, Yin, Chen, & Chen, 2020; Niinimäki & Hassi, 2011), waste and waste-related emissions and toxicity (Rossi, Bertassini, Ferreira, Neves do Amaral, & Ometto, 2020; Stål & Corvellec, 2018), hazardous chemicals and toxicity (Cesar da Silva et al., 2021; Pedersen & Gwozdz, 2013), microplastic and plastic pollution (Goldsworthy, Earley, & Politowicz, 2018; Leal Filho et al., 2019; Moorhouse & Moorhouse, 2017), high energy consumption (Abbas et al., 2020; de Oliveira Neto, Ferreira Correia, Silva, de Oliveira Sanches, & Lucato, 2019). Social sustainability issues of the industry include poor working conditions, labour rights, low wages, child labour, modern slavery (Carrigan, Moraes, & McEachern, 2013; Joergens & Barnes, 2006; Mair et al., 2016; Ozdamar Ertekin et al., 2020; Peake & Kenner, 2020) and cancer risks due to carcinogenic human toxicity (Haug & Busch, 2015; Søndergård, Hansen, & Holm, 2004; UNEP, 2020). To tackle this multitude of challenges, textile/fashion companies employ a wide array of sustainability-related work.

An essential driver of the change of the industry has been through social movements, including the zero-waste movement (Moorhouse & Moorhouse, 2017), eco-fashion driven by anti-consumerism (Joy, Sherry, Venkatesh, Wang, & Chan, 2015), ethical fashion (Joergens & Barnes, 2006) and more recently circular fashion (Corvellec & Stål, 2019). Here, consumer awareness plays a crucial role, as the increasing demand for ethical and sustainable alternatives motivates fast fashion incumbents to address sustainability issues and explore various solutions (Ki, Park, & Ha-Brookshire, 2021; Meyer, 2001; Niinimäki & Hassi, 2011).

Incumbents explore new sustainable business models that can replace the linear “take-make-dispose” fast fashion model by engaging with alternative models like second-hand sales, rental models, upcycling and recycling (Stål & Corvellec, 2018). Though rarer than circular fashion initiatives, some encourage their customers to consume less through engaging with sufficiency programmes (Freudenreich & Schaltegger, 2020). They develop or join various certification schemes, such as Fairtrade that addresses farmers’ and employees’ wages (Heinze, 2020), REACH that regulates, registers and evaluates potentially hazardous chemicals (UNEP, 2020), Bluesign that addresses resource efficiency, emissions to air and water, and consumer health and safety (Muthu, 2015, 2017).

Similarly, entrepreneurs develop novel business models that create environmental or social value or address the current industry’s negative externalities (Argade, Salignac, & Barkemeyer, 2021; DiVito & Bohnsack, 2017; DiVito & Ingen-Housz, 2017; Lueg, Pedersen, & Clemmensen, 2015). For instance, they develop sustainable fibres from organic materials or recycled waste, such as Anneka Textiles in the UK or Precious Waste in the Netherlands, led by designer Michelle Baggerman (Goldsworthy et al., 2018).

As the certifications and eco-labels become the norm, media attention on the industry increase and regulations get more stringent, players also increasingly engage in cleaner production in the different phases of the textile value chain, such as cleaner bleaching/dyeing and finishing processes (Cesar da Silva et al., 2021; de Oliveira Neto et al., 2019). For global fashion brands, addressing cleaner production needs to go beyond their operations. Because without addressing the negative impacts of their supply chains, it is not possible to reduce emissions, nor is it possible to address social issues in the developing world (Carrigan et al., 2013; Diabat et al., 2014; Jia et al., 2020; Khurana & Ricchetti, 2016).

### ***Sustainability-Oriented Partnerships***

Generally, firms can address the above-discussed sustainability issues via various initiatives, either making them in-house (make), outsourcing (buy) them, or collaborating with various stakeholders (Husted, 2003; Husted, Allen, & Rivera, 2010; Husted & de Sousa-Filho, 2017). Amongst make, buy or collaborate decisions, several studies found that partnerships effectively address environmental and social sustainability issues and improve firms' environmental, social and economic performance (Dangelico & Pontrandolfo, 2015; Dangelico, Pontrandolfo, & Pujari, 2013; Husted & de Sousa-Filho, 2017).

Sustainability-oriented partnerships are defined as firms' collaborations with external organisations to reduce negative or generate positive social and environmental impact (Crane, 1998; Stadtler & Lin, 2019; Wassmer, Paquin, & Sharma, 2014). A focal firm may partner with various organisations from different sectors such as private, public, voluntary-civil society (Arya & Salk, 2006; Kolk, 2014; Van Tulder & Da Rosa, 2012); hence can engage with both inter-firm and cross-sector partnerships (Gutierrez, Marquez, & Reficco, 2016; Wassmer et al., 2014). Inter-firm partnerships include partners from the private sector that include customers, suppliers and even competitors (Ardito, Messeni Petruzzelli, Pascucci, & Peruffo, 2019; Dahlmann & Roehrich, 2019), while cross-sector partnerships include firms' interactions with NGOs, governments, public and local authorities, universities and research institutions (Dzhengiz, Barkemeyer, & Napolitano, 2021; Kolk, 2014; Stafford, Polonsky, & Hartman, 2000; Wassmer et al., 2014). This article includes both inter-firm and cross-sector sustainability-oriented partnerships in textiles/fashion.

Drawing on Stadtler and Lin (2019), we focus on sustainability-oriented partnerships' mechanisms and targeted levels of change, as shown in Figure 1.

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Insert Figure 1 about here

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### **Mechanisms of Sustainability-Oriented Partnerships**

Stadtler and Lin (2019: 872) define partnership mechanism as “the tool the partners plan to use to reach out beyond the partnership boundaries and facilitate environmental change from a cognitive, behavioural, and technical perspective”. These include process improvements toward sustainability, developing new and sustainable products, engaging in awareness-raising campaigns that may address concerns of marginalised communities and philanthropic initiatives to support various causes, and driving policy change. Partnerships can help parties develop more sustainable processes that can guide organisational change internally, whether collaborative business model innovation processes (Wadin, Ahlgren, & Bengtsson, 2017) or more sustainable production or manufacturing technologies (Bönte & Dienes, 2013; Quist & Tukker, 2013). Partnerships can also be based on products as a mechanism (Melander, 2017). For instance, Dangelico et al. (2013) find that sustainability-oriented partnerships allow firms to acquire knowledge from other organisations and design greener products. Another mechanism category is awareness-raising, whether through philanthropy, addressing people's concerns, or the lack of recognition and appreciation for environmental sustainability. To raise awareness, firms may co-develop various competitions and entrepreneurial incubation programmes (Murphy, 2010), work with local and national government agencies (Busch, Richert, Johnson, & Lundie, 2020), and social enterprises or nonprofits (Gold, Chowdhury, Huq, & Heinemann, 2020; Heuer, 2011). Finally, firms can build multi-stakeholder platforms (Pinkse & Kolk, 2011), develop industry coalitions (Nicklich, Endo, & Sydow, 2020), and work with governments and public authorities (Stadtler & Probst, 2012) to implement or influence policy change (Jakobsen, Lauvås, &

Steinmo, 2019; Oelze, Hoejmose, Habisch, & Millington, 2016; Vinke-de Kruijf, Bressers, & Augustijn, 2014).

### **Level of Change at Sustainability-Oriented Partnerships**

Stadtler and Lin (2019: 872) highlight that sustainability-oriented partnerships bring about change at the firm, industry, supply chain, or societal levels. Firm-level change can be conceptualised as partnerships' impact on participating firms' products, processes, practices, capabilities, strategies or business models (Albort-Morant, Leal-Rodríguez, & De Marchi, 2018; Wassmer et al., 2014) often associated with the creation of private value (DiVito, van Wijk, & Wakkee, 2020). Some partnerships go beyond firm-level change through initiatives that aim to tackle sustainability issues at the industry level. For instance, DiVito et al. (2020) found that the TEXALL collaboration aimed to drive industry-level change by acting as a catalyst for various industry players by developing post-consumer recycled fabrics. Partnerships can also introduce supply chain-level change through initiatives with suppliers to develop new environmentally and socially friendly products, processes, practices, capabilities, strategies that will improve suppliers' sustainability performance (Albino, Dangelico, & Pontrandolfo, 2012; Neutzling, Land, Seuring, & Nascimento, 2018; Oelze, 2017). Finally, partnerships can also generate societal value based on driving positive environmental and social change (Selsky & Parker, 2010) and improving sustainability at the societal level by developing pro-sustainability policies, practices, organisational forms (Ordonez-Ponce, Clarke, & Colbert, 2020).

## **METHODS**

Our objective is to explore the mechanisms and targeted level of change of sustainable textile/fashion partnerships and explain the relationships between these mechanisms and levels of change, following a similar approach to Stadtler and Lin (2019: 872). We benefit from qualitative content analysis, coding, and statistical analysis to explore

and analyse sustainability-oriented textile/fashion partnerships. We draw on publicly available archival records to access the data for this research (Welch, 2000).

### ***Data Collection***

Archival records are commonly utilised in the strategic partnerships literature due to the availability of databases such as SDC, Bioscan, or Factiva (Schilling, 2009). These databases are also exploited in the growing sustainability-oriented partnerships literature (Lin & Darnall, 2014; Stadtler & Lin, 2019). Like other strategic partnerships studies (Lavie & Singh, 2011), we utilize the Factiva database, which provides extensive coverage of textile industries (Caro & Martínez-de-Albéniz, 2015) and inter-firm and cross-sector partnership announcements (Dzhengiz & Malik, 2020). We searched partnerships and collaborations with the environmental and social sustainability-related terms in this database's clothing and textiles industry section. Table 1 summarises our data collection efforts, including searching and screening in the Factiva database. After screening, we identified 444 relevant partnerships in our database.

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Insert Table 1 about here

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### ***Qualitative Content Analysis & Coding***

We followed a two-stage coding process to explore our database qualitatively. We used Atlas.ti 8 for coding purposes. In the first stage, we coded the partners and the motivations of the partnership. In the second stage, following the framework of Stadtler and Lin (2019: 872) introduced in the Literature Review, we coded the type of partnership, mechanisms, levels, sustainability issues and dimensions (environmental, social).

In some cases, the text indicated that a partnership has more than one level of targeted change; in these cases, we chose to code these partnerships with the highest level. Figure 2 demonstrates an example of our coding efforts. Our analysis also included partnerships that contribute to both environmental and social sustainability. Indeed, some partnerships were multi-stakeholder initiatives that simultaneously aimed to tackle environmental and social sustainability.

To ensure the reliability of the coding process, two authors engaged in the coding process and conducted independent coding of the same press releases. As a result, 76% of coding about the mechanisms initially matched. 89% consensus about the levels and 92% about the dimensions was achieved. In cases where coding did not match, authors specifically discussed these cases together until it was possible to establish a common understanding of the mechanisms, issues, sustainability dimensions and levels of change. As a result, the coding of both authors converged.

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Insert Figure 2 about here

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### ***Quantitative Data Analysis***

Following qualitative coding and content analysis, we also conducted statistical analysis to assess the relationship between mechanisms and the targeted level of change.

### **Descriptive analysis**

About half of all partnerships in our sample addressed firm-level change (54.1%). The second most common category for a targeted level of change was ‘society’ (17.3%), followed by ‘supply chain’(14.9%) and ‘industry’ (13,7%). We found that amongst the mechanisms, product design, development and improvements (38,51%) were the most frequent of all

partnerships, followed by process-related sustainability improvements (32,66 %), awareness-raising and philanthropic activities (26,58%), policy changes (2,25 %).

Generally, of the 444 partnerships, the majority was inter-firm partnerships (57.6%), and the remainder was cross-sector (42.5%). Partnership size varied, with those with 2 partners constituting most (81,3%), 3 partners (10,6%), and 4 and above (8,3%). A majority addressed environmental problems (68,5%), followed by social (17,3%) and those that addressed both environmental and social sustainability challenges simultaneously (14,2%). Summary findings on each variable are presented in Table 2.

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Insert Table 2 about here

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### **Frequency Analysis**

We next addressed questions about the relationship between partnership mechanisms and their targeted levels of change in two steps. First, we conducted detailed frequency cross-tabulations for the targeted level of change and the mechanisms. These results demonstrate the numbers and percentages of partnerships that use a particular mechanism (product, process, awareness-raising, policy) associated with a certain level of change (firm, industry, supply chain, society), as shown in Table 3. Second, as we also provide insights into both environmentally and socially oriented sustainability partnerships, we provide a similar frequency cross-tabulations for the mechanisms and sustainability dimensions, as shown in Table 4.

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Insert Table 3 about here

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Insert Table 4 about here

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### **Multinomial Logit Analysis**

Next, we moved beyond bivariate to a multivariate analysis by employing multinomial logit model estimation. This tool allowed us to comprehensively investigate differences in the full set of variables listed in Table 2 across the four levels of targeted change and provides us with a framework to test the statistical significance of covariation between the variables. It also provided us with a means of investigating to what extent the bivariate associations of Tables 3 and 4 reflect relationships with partner composition characteristics and the sustainability orientation of a partnership. Importantly, a multinomial logit model gives us the advantage over conducting separate logistic regressions for the different levels of targeted change. It allows us to make a series of parallel comparisons to one and the same reference (base) group.

Table 5 reports estimation results. Each column shows a comparison between the three categories of targeted change with the base category (*firm-level change*). Coefficients represent the change in log-odds associated with a unit change in the corresponding variable. This means, for example, that negative estimates on the *product\_throughout* implies that the partnerships focused on developing new or significantly improved products are less likely to be targeting any other level of change than the firm level. We may think about coefficient

estimates in this way: if we already knew about the partner configuration and sustainability orientation of a partnership but did not know what level of change the partnership targets, the additional information that it utilizes a *product* mechanism would strongly increase the chance that the partnership targets change at the *firm* level. Similarly, learning that a partnership addresses *social sustainability* concerns makes it more likely to address any of the broader levels. We ran several reduced models to ensure that the key results on mechanisms are not driven by collinearity (given, e.g. the covariation between sustainability dimensions and mechanisms). The results, available upon request, show that all results on mechanisms in Table 5 are robust to the exclusion of co-variates. The only deviation is that the estimate on the *process* in the second column is significantly negative in a reduced model.

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Insert Table 5 about here

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## FINDINGS

This section introduces both our qualitative and quantitative results. Table 6 provides further examples of various partnerships that reflect our analysis.

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Partnerships that targeted *firm-level change* tended to use the *product* (64,6%) or *process mechanisms* (30,83 %). More than two-thirds of partnerships with the product mechanism were inter-firm (84%), the remainder were cross-sector (16%). Amongst the

inter-firm partnerships with the product as the mechanism, firms most frequently engaged in developing and diffusing sustainable fibre alternatives. For instance, companies developed and diffused fibres from cellulosic sources, as was frequently the case for Lenzing's partnerships with various companies such as Converse, H&M, and All birds. An example of a cross-sector partnership that used the product mechanism was the partnership between Adidas and Parley for the Oceans, where ocean waste was turned into shoes. Alternatively, firms co-developed organic fibres such as hemp like the partnership between Mohawk - UPM Raflatac or faux fur alternatives to introduce fashion free of animal cruelty. Common *process-related* motivations that targeted *firm-level change* (30,83 %) were to reduce water and energy consumption through collaborative eco-innovations, create a circular economy of textiles products by recycling, or reusing or sharing business models, introduce cleaner manufacturing processes such as textile dyeing by using dyes made from natural organic materials. For instance, Chanel – the luxury fashion brand, worked with Sunrun to invest in clean energy for its facilities and generate renewable energy certificates. Another denim player, Jeanologia, partnered with Garmon Chemical to reduce environmental impacts and costs by eliminating pumice stone from denim washings.

Compared to partnerships targeting the *firm-level*, partnerships targeting the *industry-level* are less likely to involve only two partners (see estimate for 2 *partners* in Table 5, first column), and more focused on *social sustainability issues* (see bottom panel of Table 5, first column). Partnerships in this category included Ellen MacArthur Foundation's Make Fashion Circular Initiative; Global Fashion Agenda; Fashion for Good; Partnership for Cleaner Textiles (PaCT); Partnership for Sustainable Textile Initiative; and industriALL. Such initiatives used *awareness-raising* (42.62%) or *process* (40.98%) mechanisms. They aimed to provide a collaborative platform where mainstream fast-fashion players and new entrants could engage in sustainable innovations, circular fashion and cleaner production by enabling



knowledge sharing and transfer between members. In addition, they focused on labour rights and health and safety concerns in this industry.

Partnerships targeting the *supply-chain* level are more focused on social sustainability issues (see bottom panel of Table 5, second column) and often use *process* (63.64%) or *awareness-raising* (24.24%) mechanisms. The supply-chain targeting initiatives included creating standards and certifications such as the Higg Index of Sustainable Apparel Coalition, which is an industry-led multi-stakeholder platform that aims to improve firms' internal processes of environmental management by engaging with various NGOs such as WWF, develop recycling programmes together with municipalities and encourage citizens to recycle textiles and co-develop waste textile collection points, or research and explore various sustainable processing alternatives by engaging with research institutions and universities. Besides, an example of policy development has been through M&S and The Soil Association, The Prince's International Sustainability Unit, to pledge Sustainable Cotton Communique to ensure the use of cotton from sustainable sources by 2025. A common cause for partnerships that targeted supply-chain level change was to address the issue of transparency and traceability. For example, H&M, M&S, Inditex, Kering and Canopy teamed up to provide a digital mapping tool for fashion supply chains to reveal the deforestation impacts. These initiatives did not always come from the textile/fashion incumbents but also sometimes from technology giants working on solutions such as blockchain. For instance, Google Cloud and WWF Sweden seek to create an environmental data platform that will enable more responsible sourcing decisions in the textiles/fashion industry.

Partnerships targeting the *society level* stand out by being more often than other partnerships taking the form of *cross-sector partnerships*. The estimate on *cross-sector* in Table 5, column 3, is significantly positive, with a log-odds of 1.412. This corresponds to a four times higher chance that a partnership targets the *society* level if the partnership is cross-

sectoral, compared to the partnership involving only private firms. Partnerships targeting the societal level of change are also more likely than partnerships targeting firm-level change to focus exclusively on *social sustainability issues* (see Table 5, bottom panel). A vast majority (85.71%) uses *awareness-raising mechanisms*. Not surprisingly, several of these partnerships were formed to support the efforts during the Covid-19 outbreak. For instance, Levi's teamed up with Mercado Global to empower indigenous female artisans in Guatemala and provide masks to migrant workers. Others, like Bebe Moratti, worked together with various charities like Action Aid to support them during the Covid outbreak. In this category, there were various issues that firms aimed to raise awareness for, including poverty, hunger, lack of education, inequality and wellbeing. For instance, Gap Inc. had a partnership with Boys & Girls Clubs of America to pilot an on-the-job training programme for teens and young adults and offer job opportunities and skills development for youth. Kering also teamed up with Parson School of Design to launch a new design curriculum to teach students about the environmental impacts of their creations.

Finally, our results showed that partnerships that only aimed at improving *social sustainability issues* were most likely to use the *awareness-raising mechanism* (64,94%). In contrast, those partnerships that only aimed to improve *environmental sustainability* were most likely to use the *product or process mechanisms* (49.01%, 35.53%).

## DISCUSSION AND CONCLUSION

This article explored sustainability-oriented textile/fashion partnerships based on the mixed-method analysis of 444 press releases. Drawing on Stadtler and Lin (2019), we unpacked the link between partnership mechanisms and the targeted level of change in this specific context of the textiles/fashion industry. Our findings also resonated with the recent findings of Beyers and Heinrichs (2020) regarding how firms utilise different forms of

governance to initiate change regarding the different pillars of sustainability in the textiles/fashion industry.

Our results aligned with those obtained by Stadtler and Lin (2019) in several ways. Like them, we also found that at the firm-level product mechanism, at the supply chain level, the process mechanism and at the societal level, awareness-raising mechanism was common. However, we also note results contrasting with those obtained in this study.

Going beyond previous studies, we also examine partnerships relating to not only environmental but also social sustainability. The textile/fashion industry has chosen to address social issues such as labour rights, poor working conditions, and poverty and target change at the industry, supply chain and society levels utilising sustainability-oriented partnerships and coalitions. Our results have shown that partnerships relating to social issues are more likely than environmentally-oriented partnerships to target change beyond the organisational boundaries of the partners (industry, supply-chain, society).

Moreover, sustainability-oriented textile/fashion partnerships also demonstrated different patterns depending on their social or environmental objectives. Our findings lead to the conclusion that, for these firms, environmentally oriented work requires them to engage with the “core” (product, process) to trigger firm-level improvements. In contrast, textile/fashion often choose not to go beyond philanthropy when it comes to addressing social sustainability issues.

Our findings showed that partnerships involving cross-sector partners are more likely to target *society*. This shows that textile/fashion firms often address societal change with other industry actors, competitors and supply networks rather than with NGOs, universities, and state organisations. The most common pattern we observed in this area was addressing issues such as poverty through awareness-raising and philanthropy mechanisms in cross-

sector partnerships with NGOs. However, we believe it is necessary to address these issues at the societal level with mechanisms other than philanthropy, particularly through the co-development of environmental and social innovations (Halme & Laurila, 2009). Moving forward, we should expect the textiles/fashion industry to engage in partnerships beyond philanthropy and awareness-raising in this area, as these mechanisms are also often viewed as the initial stages of cross-sector engagement in an evolutionary sense (Austin, 2000; Austin & Seitanidi, 2012).

Thanks to this analysis, we mapped the issues, mechanisms, motivations and targeted level of change at sustainability-oriented partnerships in textiles/fashion. We contributed to the literature on sustainability-oriented partnerships (Lin, 2012; Lin & Darnall, 2010; Stadtler & Lin, 2017, 2019) and corporate sustainability in the textiles/fashion industry (Muthu, 2015, 2017). We showed that the mechanism-targeted level of change association could be context-dependent. While Stadtler and Lin (2019) used a similar analysis and testing, the SDC database they used included data mostly from environmental services and renewable energy industries. The differences in our results show that the mechanisms for change at different levels not only follow a generic pattern that may apply to all industries. But, it may also be based on a specific industry's preferences and conditions, hence the differences from these prior studies. For practitioners and policymakers, designing partnerships that bring about change at multiple levels will be an important task. We hope the examples we provided here can guide them further at the partnerships' design and initiation stages.

In addition, we demonstrated that while inter-firm partnerships that utilised product and process mechanisms were common, cross-sector partnerships, especially multi-stakeholder initiatives, played a crucial role in addressing a multi-level and broader change. These findings contribute to the ongoing conversation on sustainability-oriented partnerships' motivations and configurations (Niesten & Jolink, 2020; Niesten et al., 2017; Stadtler, 2017;

Stadtler & Lin, 2017, 2019). In other words, we show that both inter-firm and cross-sector partnerships may have distinct roles to trigger change at different levels. Inter-firm partnerships may be more feasible to help firms address sustainability challenges at the firm level, often through product and process mechanisms. On the other hand, cross-sector partnerships may be more appropriate to address broader level change through process, policy and awareness-raising mechanisms. Since we need change at different levels for the sustainability transition, we note that a diverse portfolio of partnerships can help firms further than relying on a single type of partnership or a mechanism (Van Tulder & Da Rosa, 2012).

### ***Future Research Implications***

We see several fruitful paths for future scholarship on sustainability partnerships. First, similar to our context-dependent analysis, the relationship between the targeted level of change and mechanisms of partnerships can be explored in other industries. This would help both researchers and practitioners to see whether and to what degree this relationship depends on the industrial contexts.

Second, our analysis has been limited to the *targeted* level of change. However, we could not test to what extent these partnerships created change in reality. We find it important to assess whether these partnerships created actual change and impacted these levels. Here, impact assessments of partnerships appear as a fruitful path forward (van Tulder, Seitanidi, Crane, & Brammer, 2015).

Third, our findings showed that many companies like H&M and Adidas have already built large portfolios of sustainability-oriented partnerships. Unlike partnership-level analysis, which we have done in this paper, future studies can conduct firm-level portfolio and network analysis to further shed light on a portfolio's characteristics that lead to enhanced sustainability performance (Ashraf, Meschi, & Spencer, 2014; Ashraf, Pinkse, Ahmadsimab,

Ul-Haq, & Badar, 2019). Considering textiles/fashion's environmental and social impact, more research is necessary to explore how businesses address various sustainability concerns.

Our analysis is based on archival data; thus, it cannot capture specific partnership dynamics (Donbesuur, Zahoor, & Adomako, 2021). Further work is needed to complement our approach. We hope our study could join others that demonstrated partnership initiatives to tackle sustainability challenges in this industry (Beyers & Heinrichs, 2020).

FIGURES AND TABLES IN THE MANUSCRIPT

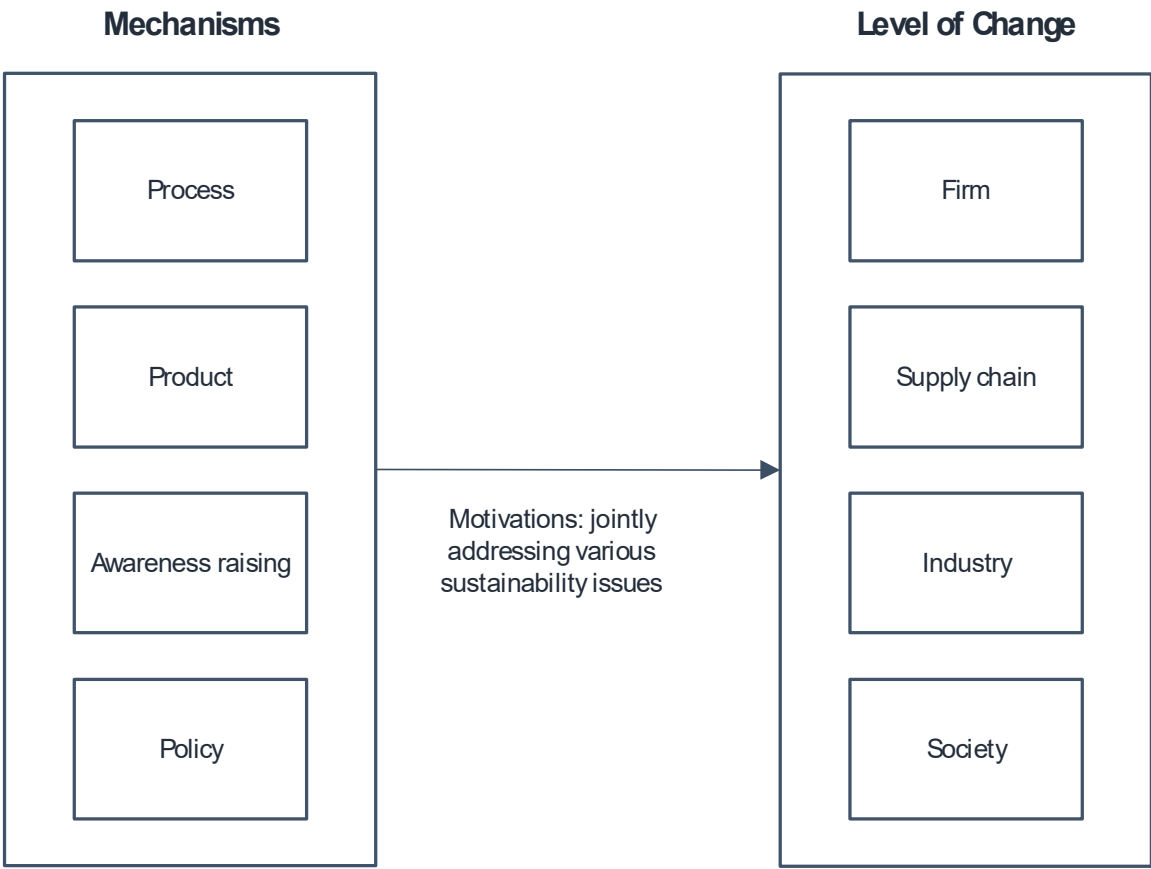


Figure 1 Partnership configurations for environmental improvement (Adopted from Stadtler and Lin (2019))

Table 1 Stages of Data Collection

Stages		
Searching press releases and news	Search terms	circular or reuse or reusing or recycle or recycling or eco-effective or downcycle or downcycling or upcycle or upcycling or recover or recovering or green or sustainable or eco-efficiency or eco-efficient or renewable or sustainability or sustainable or ethical or responsible or

		responsibility or long-lasting or lifetime or sharing or renting or ecological or environmental or cradle to cradle or biodegradable or re-design or remanufacture or remanufacturing or re-designing or repair or transparency or closed-loop
	Subject	Corporate/industrial news; Partnerships/collaborations
	Industry	Clothing/textiles industry; All publications/all authors/all companies
	Language	English
	Search Date	27 October 2020
	Press releases found	1016
Screening	Exclusion	Press releases were excluded if they were not about sustainability and responsibility, did not contain partners from textile, clothing, fashion industries, or did not report an announcement of a partnership.  Also, repetitive press releases, in other words, reporting the same partnership, were considered a triangulation but excluded unless they reported different information.
# of Partnerships	Total	444 partnerships (1361 pages)



## Partnership Announcement Text

Adidas and Parley for the Oceans, an environmental organization, have come together to fight ocean debris. In its new shoe line, Adidas will be making a shoe that will be completely made from recycled ocean wastes and illegal deep-sea gillnets.

The prototype shoe was revealed at an event hosted by Parley for the Oceans for the United Nations.

Cyrill Gutsch, the founder of the eco group, said, "The objective is to boost public awareness and to inspire new collaborations that can contribute to the project and preserve the oceans. We are extremely proud that Adidas has joined them in the mission and is also putting its creative force to show that it is possible to turn ocean plastic into something cool and usable."

"Adidas has long been a leader in sustainability, but this partnership allows us to tap into new areas and create innovative materials and products for our athletes," stated Eric Liedtke of Adidas.

The material required for this project was collected by Parley for the Oceans, together with the Sea Shepherd Conservation Society. They had to go on a 110-day expedition to follow a poaching vessel in the West African coast and retrieve the gillnets.

Online apparel retailer Asos has once again partnered with African clothing workshop SOKO Kenya .....As part of the partnership, Asos provides ongoing practical support and employee training to help develop the SOKO Kenya brand and the team, which has grown from four to 50 employees over the last six years. The Kenyan clothing manufacturer, which has worked with Asos since 2010 on the production of the ASOS Africa collection, provides fair and safe employment and training for some of the country's poorest communities. The SOKO Community Trust was set up in 2014 and works in partnership with the Asos Foundation to provide women and men in the local Kasigau community with the practical skills and support needed to see sustainable improvement in their lives and lift them out of poverty. ....ASOS Foundation and SOKO Community Trust created Stitching Academy Kenya that trains local people in garment manufacturing. ....

## First-stage Coding

**Partners:** Adidas and Parley for the Oceans

**Motivations:**

"to fight ocean debris"

"to make a shoe from recycled ocean wastes and illegal deep-sea gillnets"

"to turn ocean plastic into something cool and usable"

"to tap into new areas and create innovative materials and products for athletes"

**Partners:** Asos and Soko Kenya

**Motivations:**

"to provide fair and safe employment and training for the poorest communities"

"to provide women and men in the local communities with some practical skills and support needed to see sustainable improvements in their lives and lift them out of poverty"

## Second-stage Coding

**Type of Partnership:** Cross-sector

**Mechanism:** Product

**Level:** Firm

**Issues:** Waste and Circular Economy; Sustainable materials-products

**Sustainability Dimension:** Environmental

**Type of Partnership:** Cross-sector

**Mechanism:** Awareness raising-People-Philanthropy

**Level:** Society

**Issues:** Poverty; Education

**Sustainability Dimension:** Social

Figure 2 Stages of Coding with Illustrative Examples

Table 2 Key Variables, Measurement and Coding Frequencies

Variables		Measurement from the text	Code	Frequency
<b>Dependent variable:</b>  <b>Targeted level of change</b>	Firm	Partnership targeted change at the firm-level	1	54,1%
	Industry	Partnership targeted change at the industry-level	2	13,7%
	Supply Chain	Partnership targeted change at the supply chain-level	3	14,9%
	Society	Partnership targeted change at the societal-level	4	17,3%
<b>Independent variable:</b>  <b>Partnership</b>	Awareness raising	Partnership was to create awareness, contribute philanthropically, address	1	26,6%

<b><i>mechanism</i></b>		concerns of marginalised communities		
	Policy	Partnership aimed to bring about policy change	2	2,3%
	Process	Partnership focused on various cleaner technologies, or organisational processes	3	32,7%
	Product	Partnership focused on developing a new material or a product; fibre, fabric or collection	4	38,5%
<b><i>Partner diversity</i></b>	Inter-firm	Partners were both businesses-private sector players	1	57,4%
	Cross-sector	Partners were from different societal sectors (i.e. private, public, voluntary)	2	42,6%
<b><i>Partnership Size</i></b>	When there were 2 partners		1	81,3%
	When there were 3 partners		2	10,6%
	When there were 4-10 partners		3	6,1%
	Partnership contained more than 10 partners		4	2,0%
<b><i>Sustainability issue count</i></b>	Partnership addressed a single issue		1	50,9%
	Partnership addressed two issues		2	44,1%
	Partnership addressed three issues		3	3,8%
	Partnership addressed four issues		4	0,7%
	Partnership addressed five issues		5	0,5%
<b><i>Sustainability Dimension</i></b>	Environmental		1	68,5%
	Environmental; Social		2	14,2%
	Social		3	17,3%

Table 3 Detailed Frequency Cross-Tabulations for Targeted Level of Change and Mechanisms

			Targeted Level of Change			Total
		<i>Firm</i>	<i>Industry</i>	<i>Supply chain</i>	<i>Society</i>	
<b>Mechanism</b>	<i>Awareness raising</i>	10	26	16	66	118
	<i>% within levels</i>	8,47 %	22,03 %	13,56 %	55,93 %	100,00 %
	<i>% within mechanisms</i>	4,17 %	42,62 %	24,24 %	85,71 %	26,58 %
	<i>per level</i>					
	<i>% of total</i>	2,25 %	5,86 %	3,60 %	14,86 %	26,58 %
	<i>Policy</i>	1	6	2	1	10
	<i>% within levels</i>	10,00 %	60,00 %	20,00 %	10,00 %	100,00 %
	<i>% within mechanisms</i>	0,42 %	9,84 %	3,03 %	1,30 %	2,25 %
	<i>per level</i>					
	<i>% of total</i>	0,23 %	1,35 %	0,45 %	0,23 %	2,25 %
	<i>Process</i>	74	25	42	4	145
	<i>% within levels</i>	51,03 %	17,24 %	28,97 %	2,76 %	100,00 %
	<i>% within mechanisms</i>	30,83 %	40,98 %	63,64 %	5,19 %	32,66 %
	<i>per level</i>					
	<i>% of total</i>	16,67 %	5,63 %	9,46 %	0,90 %	32,66 %
	<i>Product</i>	155	4	6	6	171
	<i>% within levels</i>	90,64 %	2,34 %	3,51 %	3,51 %	100,00 %
	<i>% within mechanisms</i>	64,58 %	6,56 %	9,09 %	7,79 %	38,51 %
	<i>per level</i>					
	<i>% of total</i>	34,91 %	0,90 %	1,35 %	1,35 %	38,51 %
<b>Total</b>		240	61	66	77	444
	<i>% within levels</i>	54,05 %	13,74 %	14,86 %	17,34 %	100,00 %

	<b>% within mechanisms per level</b>	100,00 %	100,00 %	100,00 %	100,00 %	100,00 %
	<b>% of total</b>	54,05 %	13,74 %	14,86 %	17,34 %	100,00 %

Table 4 Detailed Frequency Cross-Tabulations for Mechanisms and Sustainability Dimensions

	<b>Mechanism</b>				<b>Total</b>
<b>Sustainability dimensions</b>	<b><i>Awareness raising</i></b>	<b><i>Policy</i></b>	<b><i>Process</i></b>	<b><i>Product</i></b>	
<b>Environmental</b>	42	5	108	149	304
<b>% within levels</b>	13,82%	1,64%	35,53%	49,01%	
<b>% within dimension per level</b>	35,59%	50,00%	74,48%	87,13%	
<b>Environmental and Social</b>	26	4	25	8	63
<b>% within levels</b>	41,27%	6,35%	39,68%	12,70%	
<b>% within dimension per level</b>	22,03%	40,00%	17,24%	4,68%	
<b>Social</b>	50	1	12	14	77
<b>% within levels</b>	64,94%	1,30%	15,58%	18,18%	
<b>% within dimension per level</b>	42,37%	10,00%	8,28%	8,19%	

Table 5 Multinomial logit estimation results

Targeted level of change	Industry	Supply chain	Society
<b>BASE: Firm</b>			
<b>Partnership mechanism</b>			
Awareness raising	BASE	BASE	BASE
Policy	.442 (1.324)	-.331 (1.485)	-2.03 (1.435)
Process	-1.795 ** (.484)	-.570 (.495)	-4.110 ** (0.654)
Product	-4.217 ** (.633)	-3.206 ** (.645)	-4.251 ** (.563)
<b>Partner diversity</b>			
Inter-firm	BASE	BASE	BASE
Cross-sector	.571 (.382)	.505 (.368)	1.412 ** (.465)
<b>Partnership size</b>			
2 partners	-2.438 ** (.778)	-1.298 (.975)	.116 (1.356)
3 partners	-1.496 (.897)	.455 (1.040)	.643 (1.455)
4 partners	-2.066 * (.940)	-15.660 ** (1.128)	-.381 (1.557)
> 4 partners	BASE	BASE	BASE
Number of issues	-.236 (.312)	.424 (.270)	-.345 (.337)
<b>Sustainability dimension</b>			
Environmental	BASE	BASE	BASE

<b>Environmental &amp; Social</b>	1.502 ** (.501)	2.519 ** (.502)	1.185 (.557)
<b>Social</b>	1.911 ** (.700)	2.654 ** (.629)	2.620 ** (.642)

Multinomial logit estimation. Coefficient estimates, the standard error in parenthesis. \*\* Significant at the 1% level. \* Significant at the 5 % level.

*Table 6 Examples to Sustainability-Oriented Textiles/Fashion Partnerships: Targeted Level of Change, Mechanisms, Types, Issues and Motivations*

<b>Targeted Level of Change</b>	<b>Mechanism</b>	<b>Type</b>	<b>Issue</b>	<b>Motivation</b>	<b>Example Partnership</b>
Firm	Product	Inter-firm	Sustainable materials	to develop a sports performance shoe with the lowest carbon footprint, to use natural materials to reduce GHG emissions	Adidas - Allbirds
Firm	Product	Inter-firm	Waste	to introduce a cradle-to-cradle denim fabric	G-Star Raw - Dystar - Artistic Milliners
Firm	Process	Inter-firm	Cleaner production	to build a demonstration plant for a new sulfur control solution for closed-loop production of viscose	Aditya Birla Group - Zhongtai Group
Industry	Awareness-raising	Cross-sector	Labour rights	to bring sustainable improvements for all textile workers and address living wages in the textile industry; to achieve living wages in the garment and textile sector through industry-level collective bargaining that is linked to purchasing practices	Action Collaboration Transformation Initiative (ACT) of trade union IndustriALL-Esprit, Arcadia, N Brown Group, Tesco, Pentland, Debenhams, C&A,

					Topshop/Topman, Inditex, Tchibo, ASOS, H&M, Primark, New Look, Next, PVH Corp., Zlabels
Industry	Policy	Cross-sector	Sustainability transition; Cleaner production	to help the local apparel industry to transition into a low carbon environment supporting the global mandate of 'responsible fashion', to launch a project to develop a cohesive low carbon development transition strategy	HSBC - International Union for Conservation of Nature (IUCN) - Joint Apparel Association Forum of Sri Lanka - National Cleaner Production Centre - Board of Investment
Industry	Process	Cross-sector	Hazardous chemicals; Cleaner production; Labour conditions	to conduct applied research on development of sustainable textile yarn dyeing, to develop research that would reduce hazardous impact of dyeing on weavers and the environment, to propel the growth of handlooms and textiles industry, to uplift the livelihoods of the weavers with skill upgrading and market linkages	Handlooms and Textiles department- Indian Institute of Chemical Technology (IICT). Indian School of Business (ISB) and United Nations Development Programme (UNDP)



Industry	Process	Inter-firm	Ethical fashion; Traceability and transparency; Labour and working conditions	to crowdfund a new technology platform to connect fashion brands to ethical factories worldwide, to ensure high ethical and environmental standards production, inclusive of no child or slave labour, fair wages, no discrimination, a safe and healthy workplace, the right to unionize, clear management communication, and eco-consciousness	The Woolmark Company (TWC) - Pero - Good Earth
Supply chain	Process	Inter-firm	Transparency and traceability	to use blockchain to help booster transparency of fashion brands cotton supply chains	C&A - Bext360
Supply chain	Policy	Cross-sector	Certifications and standards for sustainability	to develop a global standard to evaluate and certify its supply chain in the wool industry, to develop a progressive policy to remove the use of fur, angora or exotic leather in their products	VF Corp. - The Human Society of the United States
Supply chain	Awareness- raising	Cross-sector	Labour rights; Sustainability transition	to drive both the Decent Work and SDG Agendas in a key global sector, to improve working conditions and productivity in the textile and garment industry supply chains	H&M - International Labour Organization (ILO)

Society	Awareness-raising	Cross-sector	Inequality; poverty	to drive financial inclusion and economic security for garment workers, to empower garment workers through financial inclusion by participating in cashless systems, to improve the wellbeing of factory workers, to reach financial inclusion of 500 million people previously excluded from financial services	Mastercard - Levi Strauss & Co. - M&S - Vanity Fair Corp. - Business for Social Responsibility (nonprofit)
Society	Awareness-raising	Cross-sector	Education	to contribute to Unicef's initiative of improving education, to fund an education programme that will aid the vulnerable children	Primark - Unicef
Society	Awareness-raising	Cross-sector	Poverty; Education	to provide support and training to help Soko Kenya brand, to provide women and men in the local Kasigau community with the practical skills and support need to see sustainable improvement in their lives and lift them out of poverty, to train local people in the garment manufacturing and to provide them with low-cost access to equipment to start their own business	Asos - Soko Community Trust - Stitching Academy Kenya

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