Creating a Circular Fashion System in Bangladesh

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Abstract

The following master's thesis deals with the transformation of the textile and garment industry in Bangladesh into a circular fashion system. This topic has gained importance due to overconsumption, especially in Western Europe and Northern America, related to low-quality, fast fashion items. This overconsumption has led to increasing production, leading to more post-consumer waste, such as worn-out items, and pre-consumer waste, such as fabric scabs and left-over fabric rolls. Since the waste has to be dealt with and is understood as a resource, several recycling chains have developed. In order to turn the existing structures into a circular system, organisations, such as the international fashion partnership, are working to bring together stakeholders along the value chain. Our thesis focuses on the international fashion partnership and its influence on these recycling chains. It aims to answer the following research questions: "*What does Bangladesh's current garment and textile recycling chain look like?*", "*How did the international fashion partnership seek to alter this recycling chain?*" and "*Which challenges were encountered during the implementation process?*".

The findings were divided according to the three research questions. The first research question analysed Bangladesh's current textile recycling chain, focusing on collection, sorting, processing, and market phases. The existing recycling chain is characterised by a mix of formal and informal actors, with the informal sector playing a significant role in the sourcing and processing of pre-consumer textile waste. Formalisation is seen as an opportunity for the market to yield its immense potential. Answering the second question, it was identified that the partnership took a number of steps toward its goals and, most significantly, was able to raise awareness and bring together fashion brands and other stakeholders to create the momentum needed to start a successful change process. The third question dealt with the challenges encountered by the partnership thus far. One of the main issues the organisation faced was resistance to change within the informal sector. There appears to be a fear of economic loss, which is counteracted by actively engaging

stakeholders. Another challenge presented was the general lack of infrastructure for textile recycling and the lack of funding for the advancements in this area. Also, the overall environmental footprint generated by recycled products posa challenge, as well as the general consumer behaviour. Additionally, our research shows that regulations by the EU and USA are relevant tools, as these create a ripple-down effect on suppliers and manufacturers.

In order to reach the findings, our research adopted a qualitative approach. It utilised a unique and multiple case study design, focusing on recycling chains with distinct actors, interests, challenges, and relationships. This design was chosen as unique case studies can be used to explore phenomena that are not well understood, which is the case for the researched recycling chains at hand. This is also where we see the value of the conducted research. The research was cross-sectional, exploratory and aimed to gain a deeper understanding of participants' perspectives. Primary data was gathered through 12 semi-structured interviews and two written records of interviews conducted by other researchers. The interviewees were, among others, representatives of trade organisations, a recycler, junior and senior researchers, government officials and an international fashion organisation. Secondary data from publicly available sources and academic papers were used to augment the analysis. For the interviews, thematic analysis was employed as a coding method. As we argue that the international fashion partnership, which is central in this thesis, acts as an intermediary within a multi-stakeholder initiative while working in a global recycling network, we build a framework of analysis based on global value chains and global production networks.

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1. Introduction

The textile industry is responsible for pollution and greenhouse gas emissions. It is estimated that the global apparel sector uses around 79 billion cubic metres of water per year. It is responsible for about 20% of global clean water pollution from dyeing and finishing products and causes almost 10% of global carbon emissions – more than international flights and maritime shipping combined. Another issue is the lifespan of clothing textiles. In Europe, the average person consumes nearly 26 kilos of textiles and discards about eleven kilos of them every year. While some clothes are donated, the vast majority end up in landfills, and only less than 1% is recycled (European Parliament, 2022). In Bangladesh, it is estimated that the textile industry in itself produces around 1,000 tonnes of pre-consumer textile waste (Appendix 1) in a year, locally known as 'Jhoot' (Appendix 1) (Akter et al., 2022).

As scientists worldwide agree that the earth is warming at an unprecedented rate (NASA, 2023), there is a need to tackle this vast problem. At the same time, the textile and garment sector is one of the largest industries worldwide. Due to globalisation, the number of goods traded has increased. In the last 30 years, half of the industry's total capacity has shifted from developed to developing countries. This is because this labour-intensive industry has transferred its production process to low labour costs countries in the Global South. China, Bangladesh, India, Hong Kong and Indonesia rank first in the manufacturing part of the industry (Akay et al., 2020). Resulting in the fact that the textile and garment sector plays a vital role in the increase of the Global Domestic Product (GDP) and the employment rate of developing countries (ibid). Bangladesh is one of the largest apparel exporters of Western fast fashion brands in the world, and therefore the apparel industry is one of the most important economic sectors of the country (McKinsey & Company, 2021; Akter et al., 2022). However, the Global North is highly dependent on this industry. The European Union (EU) estimates that the textile and garment sector is

responsible for the employment of 1.5 million people within EU states lines and producing a total of 162 billion Euros in turnover (European Commission, 2021).

One solution for the adverse effects of the textile and garment production process is environmental upgrading (Appendix 1), meaning the "*[...] process of improving or minimising the environmental impact of [...] operations, including production, processing, distribution, consumption and disposal, re-use or recycling*" (Ponte, 2019, p.142). Concerning the apparel industry, there are several ways to turn the production process into a sustainable one. To achieve this, decreasing the usage of toxins, switching to renewable energy sources, and less use of avoidable plastic packaging are among some of the ideas (European Parliament, 2023). Another one is shifting the entire industry into a circular fashion system (Appendix 1), meaning reducing waste to the minimum by recycling (Appendix 1) existing materials and products for as long as possible (ibid). This can be realised by tackling fast fashion, making textiles more durable, repairable, reusable and recyclable, and introducing tighter recycling rules and binding targets for materials use and consumption (European Parliament, 2022). Realising these factors would result in a so-called circular fashion system (Corvellec & Stål, 2019). This was the goal of an international fashion partnership, whose work in Bangladesh was the topic of this thesis.

Textile recycling is the process of recovering fibre, yarn, or fabric and reprocessing the material into new, valuable products (Hawley, 2006). This can involve so-called 'upcycling', discarded materials being converted into something of equal or greater value, or 'downcycling' material or product being transformed into something of lesser value (Paras et al., 2019) (Appendix 1). This kind of recycling system not only has positive effects on the environment by creating less waste and reducing pollution, but it also creates new jobs and, as a result, livelihoods for many people (ibid), especially in developing countries. In Bangladesh, for example, around 500,000 people work in the recycling industry generating an estimated annual revenue of about 40 Billion Taka (about 380 Million USD)

(Ministry of Finance, 2021). However, it is worth noting that most of these people work in the informal sector in which working conditions and the workers' occupational health and safety standards are not up to code, and can be quite harmful (Akter et al., 2022).

Nevertheless, creating a recycling chain is also supported by the United Nations, which introduced the Sustainable Development Goals in 2015. Goal 12 aims to ensure sustainable consumption and production patterns (UN, 2023). Additionally, the European Union adopted a resolution on the new circular economy (Appendix 1) action plan demanding additional measures to achieve a carbon-neutral, environmentally sustainable, toxic-free and fully circular economy by 2050 (European Parliament, 2022). Furthermore, so-called green fashion demand among customers in the Global North is rising (Kim et al., 2018), making the shift to sustainable clothing and joining a recycling network for fashion brands a potentially lucrative business (ibid).

However, turning the textile and garment industry into a circular fashion system requires expanding on the existing textile production network with a Global Recycling Network (GRN) and/ or Global Destruction Network (GDN), meaning a network in which the textile waste is taken back into the value chain to create something of new value (Crang et al., 2013). This is a highly complex task. Many different actors are involved in the Global North and the Global South, including fashion brands, Non-Governmental Organisations (NGOs), recyclers, governments, garment workers and customers. All these different stakeholders try to manage the garment and textile waste streams. Hence, the Global Recycling Network and Global Destruction Network can be viewed through the lens of Multi-Stakeholder Initiative theory (MSI), in which all these different actors try to govern the system in order to achieve environmental upgrading but also generate value for their own benefits (Köhne, 2014; Gereffi & Lee, 2014). Different power dynamics influence these governing structures, as stakeholders from the Global North often exercise power over the ones from the Global South, creating an

imbalance among these actors which should work as equal partners to create a successful GRN and circular fashion system (Haack et al., 2012; Waddock et al., 2007).

GRN and GDN theory has only been acknowledged recently as an extension of and challenge to the Global Value Chain and Global Production Network theory, which are two different theories on the global supply chain (Herod et al., 2014; McGrath-Champ et al., 2015) (Chapters 3.1.1.; 3.1.2.; 3.1.3.). Therefore, research into this new theory needs to be expanded. This paper looked into an important aspect of GRNs by investigating its possible success rate of turning the textile and garment industry into a circular fashion system by focusing on the interaction of the required stakeholders within a Global Recycling Network/ Global Destruction Network in regard to governance and environmental upgrading. This was done by determining some key features which define a GRN. We analysed these features by conducting a case study surrounding an international fashion partnership (Chapter 2.4.2.), which gave us an insight into the goals reached for and challenges faced by the partnership on a global and local level.

1.1. The International Fashion Partnership & Textile Recycling in Bangladesh

The international fashion partnership is "*[...] a cross-sectional partnership trying to achieve a long-term, scalable transition to a circular fashion system*" (Author 1 - a, 2023). The partnership focused on the relationship between the Global North and Bangladesh by supporting the capturing and directing of pre-consumer textile waste back into the production of new fashion products. This was done by facilitating collaborations between textile and garment manufacturers, recyclers and fashion brands operating in Bangladesh. The partnership started their work in 2021, and by June 2023, the project was wrapping up its initial phase in Bangladesh (ibid).

Circular economies are viewed to be one solution to mitigating the effects of climate change, one of the biggest threats to humanity. With this research, we aimed to shed light on the challenges which occur when trying to transform an existing value chain. The international fashion partnership is attempting to turn the global textile and garment industry into a circular fashion system by re-, up- and downcycling textile waste and utilising environmental upgrading to create new value. This demands the involvement of many stakeholders from the Global North and South, in this case, Bangladesh and Denmark. Investigating the various challenges, e.g. power imbalances, contrasting interests, and institutional context, these actors faced and how they tried to overcome those is an important factor in realising circular economies. We employed Global Recycling Network, Global Destruction Network theory and Multi-Stakeholder Initiative theory, as well as some frameworks on governance, in order to conduct this investigation. We hope that our findings will help future partnerships with their work in trying to establish circular fashion systems. Our research focused on how the international fashion partnership tried to achieve their goals and whether they were successful. This was done by investigating the relationship between the stakeholders located in the Global North, represented by the partnership, and the Global South, including a large Bangladeshi industry association and various actors within the Bangladeshi recycling industry. Through semi-structured interviews (Appendix 5) with stakeholders along the value chain and a thorough literature review on the topic, we aimed to answer these three research questions:

- What does Bangladesh's current garment and textile recycling chain look like?
- How did the international fashion partnership seek to alter this recycling chain?
- Which challenges were encountered during the implementation process?

2. Methodology

The following section discusses how and why specific methods were used in order to develop and answer the research questions in a relevant way. In order to give a consistent understanding of what we were doing, the methodology is structured as follows: research method, research philosophy and approach, data collection, and lastly, the interpretation of results.

2.1. Research Philosophy & Approach

Adopting a particular research philosophy contains important assumptions about how we view the world and, therefore, the theories used and the data generated during the research. These assumptions formed a basis for our chosen research strategy and methods (Saunders et al., 2012).

Saunders et al. (2012) present four research philosophies, positivism, realism, interpretivism, and pragmatism. Which one should be chosen depends on the research question one tries to answer. While realism, as described by Saunders et al. (2012), emphasises the importance of observing and measuring the world as it is without imposing any preconceived ideas or theories onto it, it could, at first sight, be a good choice for our research. But as we did not use purely empirical data and objective measurement, and as we found that the reduced complexity of realism did not reflect the complexity of the case at hand, we decided to use critical realism.

As described by Bhaskar (2008), critical realism takes a more nuanced approach to understanding the world. It recognises that the world is complex and that our understanding of it is influenced by various factors, including the beliefs, values, and experiences of the researchers and the research subject(s). Critical realism acknowledges multiple layers of reality beyond what we can observe and measure directly (Pizam and Mansfield, 2009).

That is also why it is often used in case studies. Critical realist case studies go beyond mere description and seek to identify the underlying structures and mechanisms that produce the observed patterns and regularities (Sayer, 1999). Particularly within case studies, as we conducted, critical realism commonly uses a combination of methods, such as interviews and document analysis (Edwards et al., 2014).

Interviews are used to gather data on the perceptions and experiences of individuals and groups involved in a particular phenomenon. While document analysis involves the systematic review of written materials, such as reports, policy documents, and media articles, to identify underlying social structures and mechanisms. Both aligned with our approach to the research and were used at different stages of our case study.

According to Sayer (1999), critical realist case studies involve three key stages: description, explanation, and evaluation. In the first stage, the researcher describes the case's empirical features. In the case at hand, this step included a thorough document analysis. In the second stage, the researcher seeks to explain these features by identifying the underlying structures and mechanisms that produce them. This involves identifying the relevant causal powers and their interrelations and the social context in which these powers operate. In the third stage, the researcher evaluates the explanations that have been developed, testing them against the available evidence and considering their plausibility and coherence (ibid). Our study covered this by conducting interviews, analysing primary and secondary data and documents, and the three working research questions. This process aimed to lead to an understanding of the underlying structures and mechanisms that govern the circular fashion system, rather than simply describing surface-level phenomena (Bhaskar, 2008).

In the research process, we engaged in an iterative approach, constantly moving between induction and deduction. We collected data and observed the specific recycling chain closely, which led to the application of certain theories through an

inductive process. These were further explored and refined using deductive reasoning and existing theoretical frameworks. This iterative process allowed me to continuously refine and expand my understanding of the phenomenon under study. This method of reasoning and problem-solving is known as abduction. Lipton (2004) states that abduction involves forming hypotheses or explanations based on observed data or evidence. It is a creative process that allows researchers to generate plausible explanations for phenomena when existing theories or deductive reasoning alone may not provide satisfactory answers (Haugeland, 1978). This approach proved very useful for us, as it allowed us to build a suitable framework for generating new ideas and include various theories.

2.2. Research Method & Design

The research method has been defined by many scholars. One of the definitions describes the research method as the instrument of acquiring knowledge about reality through data collection and analysis (Guba & Lincoln, 1994). Within this thesis, the research was conducted using a qualitative method which is in line with the philosophy chosen. This is especially true due to the nuances of a phenomenon that can be uncovered by using qualitative research methods.

According to Creswell (2014), qualitative methodology involves "*[...] an interpretive, naturalistic approach to the world*" (ibid, p.4) and emphasises understanding the perspectives and experiences of participants. It also recognises the importance of context and the role of the researcher in shaping the research process. Another definition by Denzin and Lincoln (2017) states that qualitative methodology is "*[...] a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world [...]*" (ibid, p.2). Both point towards using subjective experiences and perspectives in order to understand a phenomenon in its natural context. This aligns with what this thesis aimed to achieve and allowed us to use qualitative data to explore the changes perceived by different stakeholders

(Westby et al., 2018). Further supporting the choice of method is that, according to Edmondson & McManus (2007), flexibility can be achieved using qualitative research. This was important as we anticipated that a certain degree of flexibility in developing method, purpose and in the way of sampling was required in order to come to a coherent conclusion.

Case studies involve an in-depth exploration and analysis of a particular individual, group, organisation, or phenomenon in its real-life context (Seuring & Müller, 2008). It aims to provide a detailed description, understanding, and explanation of the case under investigation. The thesis at hand involved analysing multiple interacting recycling chains, or rather specific aspects of these recycling chains in detail, to gain an in-depth understanding of the case, and could therefore be defined as a single case study (ibid). Moreover, it was a unique case study, as the recycling chains under research are exceptional (Yin, 2017). It included unique actors, interests, challenges and relationships. Therefore, the research might not be applicable to other recycling chains, even within the same industry. In addition, Stake (1995) argues that single and unique case studies can be used to explore phenomena that are not well understood, which was the case for the topic discussed in this thesis. This further aligned with the rest of the design as well as the goals of this study.

As the research aimed to explore the phenomenon in a broad and open-ended way, this case study was set up as an explorative study. This was due to the already-stated goal of gaining a deeper understanding of a lesser-studied recycling chain (Creswell, 2014). Exploratory studies are frequently used in conjunction with qualitative methods and are particularly helpful when the research starts with an unclear or broader research question, and the goal is to generate new insights, ideas, or hypotheses that can guide further research (ibid).

2.3. Data Setting & Interview Selection

Within the described methodological construct, a cross-sectional design is applied as this allows researchers to compare many different variables simultaneously, at a single point in time, while the data can be collected in a relatively short period. This setup also eliminates the need for follow-up visits or tracking over an extended period of time. The cross-sectional design is also in line with our method of using interviews, as they are often used in cross-sectional research design to gain a deeper understanding of participants' perspectives, experiences, and attitudes (Saunders et al., 2012).

We generated both primary and secondary data for this thesis. The primary data was semi-structured interviews (Appendix 5) conducted and notes taken during the interviews (Appendix 4) with different actors along the recycling chains. The secondary data was used to increase efficiency and to learn from other researchers' proficiency and experience. We took our secondary data from publicly available sources such as websites of actors, published reports and information gathered by the research group. Furthermore, academic papers and publications were used as secondary data to build a basis for the primary data to be analysed in a meaningful way. For this thesis, all sets of data were analysed regarding the following topics: governance, output-input structure, geographic scope, institutional contexts, economic, social and environmental upgrading through up-, down- and recycling, as well as the informal sector and effects on workers within this textile section. A thematic analysis was conducted, which is described in more detail in Chapter 2.6..

Following Blumberg et al. (2008) recommendations for qualitative and exploratory research, semi-structured interviews are used as a means to collect data. Using semi-structured interviews is regarded as useful if the researcher needs to identify a relevant issue or mechanism in a wide-ranging problem area. This type of interview consists of questions that, on the one hand, allow the interviewee to follow their own train of thought and express their feelings and opinions on the

matter. On the other hand, using this approach the researcher gains flexibility and is able to ask follow-up questions that may not be part of the initial interview guide but seem of interest to the research (Westby et al., 2018). The interview guides in this study (Appendix 4) contained a list of more specific questions to ensure coverage of all necessary areas. Additionally, it guaranteed that questions were asked in a similar way and, therefore, the replicability of the interviews.

As described in Chapter 2.4., there were several relevant actors along the studied recycling chains. In order to answer our first research question, we used value chain mapping as suggested by Gereffi and Fernandez-Stark (2018) to determine specific categories of actors that were most relevant as they worked the closest with the recycling process and achieved changes in the past years. This first mapping was then used to gain a better understanding of who the key actors are. Using our first findings as a guideline, we interviewed multiple representatives of industry associations, a number of organisations and officials, all working in/with the recycling or garment realm (Table 1). This included actors only working in Bangladesh, as well as some only active in Denmark. Furthermore, not all actors were directly engaged in the partnership. We conducted interviews with other researchers to gain the researcher's perspectives and dive deeper into the informal market aspect, which is hard to gather reliable data about.

Date	Place	Duration	Interviewee
Monday, 8.5.	Online - Between Denmark, Germany, Great Britain	41 min	Vice President of the Bangladeshi Industry Association
Tuesday, 9.5.	Online - Between Denmark, Germany, Bangladesh	1 h 23 min	Director at the Bangladeshi Industry Association
Tuesday, 9.5.	In person - not	No Information	Software Provider

	conducted by us		
Wednesday, 10.5.	Online - Between Denmark, Germany, Bangladesh	39 min	Junior - Researcher
Wednesday, 10.5.	Online - Between Denmark, Germany	29 min	Danish Government Official
Thursday, 11.5.	Online - Between Denmark, Germany	32 min	Danish Charitable Organisation
Tuesday, 23.5.	Online - Between Denmark, Germany, Indonesia	30 min	SDG Investor - early stage investments
Thursday, 25.5.	Online - Between Denmark, Germany, Bangladesh	53 min	Large Bangladeshi Recycler
Thursday, 25.5.	Online - Between Denmark, Germany	31 min	Danish Industry Association
Wednesday, 31.5.	Online - Between Denmark, Germany, Bangladesh	29 min	Danish Government Official - Embassy
Thursday, 1.6.	Online - Between Denmark, Germany	43 min	Danish Sustainability Solutions Investor
Thursday, 1.6.	Online - Between Denmark, Germany, United States	31 min	Professor - Researcher
Wednesday, 7.6.	Online - Between Denmark, Germany & ?	25 min	International Fashion Organisation

Friday, 10.5.	In person - not conducted by us	No Information	International RMG Manufacturer and Retailer

Table 1, List of Interviewees, Authors Owned Elaboration, 2023

We chose these particular actors, as they have specific knowledge of the recycling chain in Bangladesh, and/or were involved in the (global) textile and recycling industry. Some of them were also directly engaged with the international Fashion organisation. The chosen actors were able to provide a broader view, consisting of an array of different perspectives, on the matter. Furthermore, we acknowledge that we could only talk to some actors we were initially interested in talking to. This was especially true for the fashion brands associated with the international fashion partnership. We were able to generate an interview with one of the largest European fashion brands that sources from Bangladesh. Concerning the other interviews, we were able to utilise existing relationships within the research group as well as through our supervisors' network in order to conduct these. A handful of contacts were also given to us by some interviewees, and following up with these contacts led to another three interviews.

2.4. Key Stakeholders

The following section introduces the critical actors identified by the previous value chain mapping (Gereffi & Fernandez-Stark, 2018) and later interviewed. The descriptions and the image below (Figure 1) serve to gain a general understanding of these actors and showcase the interconnectedness of the fashion system at hand.

2.4.1. International Fashion Organisation

This Danish non-profit organisation is dedicated to promoting sustainability in the fashion industry (Author 1 - c, 2023). They collaborate with fashion brands, retailers, suppliers, other NGOs, and policymakers to address key sustainability challenges (Author 1 - a, 2023). The initiatives are centred around setting a

common agenda within the industry and accelerating the industry's transition towards sustainability by taking action and encouraging industry collaboration and knowledge sharing (Author 1 - d, 2023). They organise events, provide digital platforms, research, and set up initiatives to encourage industry-wide action (Author 1, 2020). The organisation advocates for policy changes and collaborates with governments and essential actors in the industry (ibid). They promote innovation by showcasing best practices and connecting businesses with innovators and technology providers (ibid).

2.4.2. International Fashion Partnership

NGOs play a crucial role in promoting sustainability in the fashion industry. The partnership was founded by the previously mentioned organisation in collaboration with other organisations and aims to accelerate the transition to a circular fashion system (Author 1 - c, 2023). This includes the following three key areas: circular design, collection and sorting, and recycling and reuse. Through collaboration and knowledge-sharing, the initiative aims to create a more sustainable fashion industry that uses resources more efficiently and reduces waste (ibid). By fostering collaboration and knowledge-sharing, this cross-sectional project seeks to create a more sustainable fashion industry that efficiently uses resources and reduces waste (McKinsey & Company & Author 1, 2021). It has initiated several projects regarding sustainability and developed a toolkit for implementing circular practices (Ellen Macarthur Foundation, 2023).

2.4.3. Bangladeshi Industry Association

This large industry association is a prominent participant in the international fashion partnership and represents over 4,500 manufacturers and exporters in the Bangladeshi garment industry (Author 3 - d, 2020). It serves as a platform for industry collaboration, advocates for industry interests, and addresses challenges related to labour standards, worker safety and environmental sustainability (ibid). The union supports its members through market information, trade events and

policy advocacy. It also acts as a liaison with international buyers ensuring compliance with labour standards and boosting international competitiveness and investments in Bangladesh (ibid). Furthermore, the industry association is engaged with the international fashion partnership to address criticisms faced by the RMG industry and to improve the overall image of the industry (Author 3 - a, 2020). Furthermore, the union hopes to use economic opportunities that become more accessible through the help of the partnership, e.g. transitioning to 100% domestic recycling of cotton and cotton elastane waste, which could save Bangladesh's economy up to 750 million USD. Currently, the rate is less than 5% (Author 2, 2022). Additionally, the union sees the importance of collaboration with other industry stakeholders to drive change, creating a more sustainable and responsible fashion industry (TBS News Report, 2020).

2.4.4. Investor

A global for-profit organisation that funds projects regarding sustainability: focus points are circularity and the green industry. They have been funding the international fashion partnership with $449,904 USD in order to achieve a scale-up (Author 4, 2013). The project was deemed successful and the possibility of further collaboration is being discussed (Interview 11).

2.4.5. Software Provider

A software company that pursues the goal of transparency and traceability. Providing software solutions that are able to track textile waste and match it to the best recycling solution (Author 5, n.d). They are part of the international fashion partnership, working together on making the value chain of individual pieces of clothing visual. This topic has gained special attention due to the Extended Producer Responsibility of fashion brands selling in the EU (Interview 3).

2.4.6. Large Bangladeshi Recycler

A formal recycler who produces fibres that are made of at least 50% recycled materials, which are specifically catered to the needs of large apparel brands. They have partnered with several organisations focused on sustainability and see themselves at the forefront of circularity (Author 6, 2023). This recycler is a member of the international fashion partnership in order to support the rise of the recycling industry in Bangladesh (Interview 8).

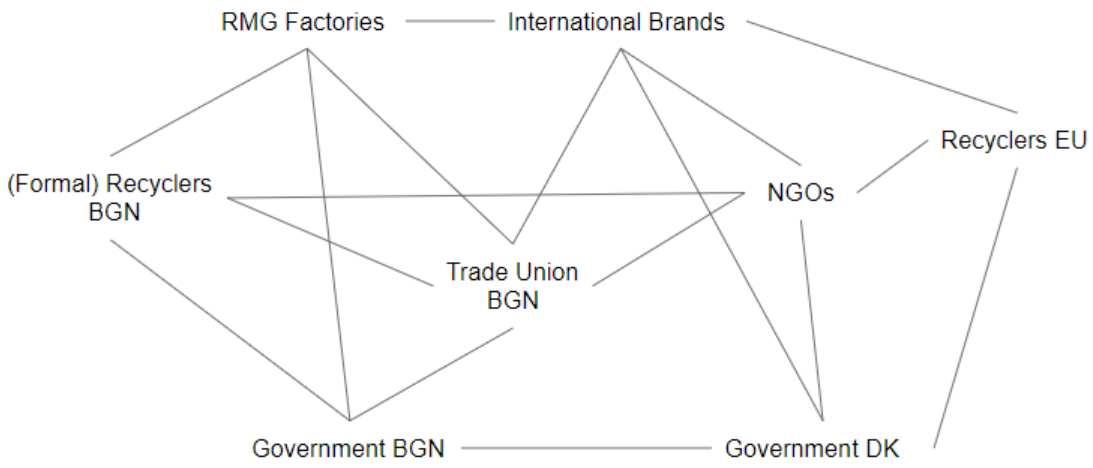


Figure 1 - Scheme of the Fashion Network, Authors Owned Elaboration, 2023

2.5. Interview Structure

This section is intended to give an overview of what the interviewer tries to achieve in different interview sections. The sections are centred around the three research questions: "*What does Bangladesh's current garment and textile recycling chain look like?*", "*How did the international fashion partnership seek to alter this recycling chain?*" and "*Which challenges were encountered during the implementation process?*". These questions are derived from the topics found in the literature about Global Recycling Network theory and Multi–Stakeholder Initiatives. Researching these topics by collecting primary data via conducting

interviews brought us closer to answering our research questions while enabling us to include a range of viewpoints. This was translated into the questions found in the interview guides (Appendix 4).

Our interview guides were built using different sets of questions. While the questions within the sets largely remained the same, the number of sets and the sets themselves varied based on who the interviewee was and, therefore, what we hoped to find out from the individual in particular. All our interviews (Appendix 5), except for one, were conducted in English, which, for most of our interview partners as well as ourselves, is a second language. The one not conducted in English was led by a colleague who did a translation into English for us (Appendix 4).

The sets were divided by topic as follows. They were not necessarily asked in the order listed. We started with a set of personal questions. These were used to get some basic information about the interviewee(s), their connection to the research and to start the conversation. After establishing a first connection to the interviewee(s), we asked about the recycling chain in question. The purpose was to learn more about the different actors at play and the processes of different types of waste. Within this topic, we frequently also asked about challenges such as informality. We also frequently asked about legislative changes and the overall implications of new legislation. If the interviewee(s) organisations that did not do a lot or any work regarding garments in Bangladesh but rather did recycling in Europe, we asked them about the recycling chain there. We aimed to learn about processes, legislations and challenges to gain a broad understanding of global connections and the subject matter itself. It was also important for us to be able to compare certain aspects.

Within the interviews, we also wanted to find out how actors operated along the main goals of the partnership as well as what their own goals regarding sustainability and recycling, in particular, were. How they aimed to achieve these,

and where they saw themselves in the journey. Furthermore, we asked about their relationship with and within the organisation to better understand certain opinions and standings. If time allowed, we asked a final question about the future of the partnership and/or the organisation the interviewee was representing, which was the same for everyone. Additionally, we always left room for the interviewee to ask questions.

2.6. Data Analysis & Coding Method

A thematic analysis, as presented by Virginia Braun and Victoria Clarke (2006), was chosen as an interpretive tool of the data analysis. They define thematic analysis as *"[...] a method for identifying, analysing, and reporting patterns (themes) within data. It minimally organises and describes your data set (rich) detail"* (ibid, 2006, p.79). It is used *"[...] to find repeated patterns of meaning"* (ibid, 2006, p.86) and *"[...] interprets various aspects of the research topic"* (ibid, 2006, p.79).

Braun and Clake (2006) propose six stages in order to achieve a comprehensive thematic analysis. This research worked along the following steps:

1. Survey the data
2. Create initial codes that represent meanings and patterns found
3. Apply codes where fitting, using colour-coding
4. Group excerpts by code and adjust codes if needed
5. Group codes into overarching themes
6. Evaluate and revise themes e.g. merging similar themes or removing them if they have no value for the analysis regarding the RQ

To increase validity, the first three steps were done by us individually and cross-checked by the other researcher. Moreover, we created a figure to visualise the steps taken, the codes used, and the themes generated (Figure 2). Doing this

allowed for straightforward analysis of raw data while providing visual aid. Furthermore, it functioned as a graphic representation of the process from raw data to terms and themes in conducting the analyses. It was an important step in demonstrating the rigour of qualitative research. (Gioia et al., 2012; Tracy, 2010)

While choosing thematic analysis, as proposed by Brown and Clark (2006) is in line with a data-driven research approach, it also provides a highly systematic, easy-to-follow guidance to coding qualitative data but still offers analytic flexibility. This enables researchers to adapt the approach to research questions and data types (Nowell et al., 2017). This flexibility is coined by not tying the approach to any specific theoretical framework. It is used with various background perspectives, allowing researchers to engage with data flexibly and critically reflexively, leading to a more nuanced and self-aware analysis (Fereday & Muir-Cochrane, 2006). Furthermore, it fits critical realism as a philosophy of science, as it is able to uncover the multiple layers of the complex phenomena at hand. Providing all of the above, it offers valuable insights for identifying descriptive (explicit and implicit) interpretive meaning across the collected data (Braun & Clarke, 2012), which was key in analysing our primary data set.

The choice of thematic analysis and its flexibility and subjectivity may raise the question of academic rigour and trustworthiness. It is outlined above, as well as by Braun and Clark (2006) themselves, that strategies such as reflexivity, inter-coder reliability, and member checking are used to establish the credibility and dependability needed in research. Overall, Brauns and Clarke's approach served as a guide for our coding, as it provided a clear framework and practical suggestions for conducting and reporting thematic analyses, making it a valuable resource for our research (Guest et al., 2012).

As mentioned, an abductive approach was used to answer our research questions. This results from a constant back and forth between findings and questions asked. This was done by reflecting and readjusting throughout the whole research and

writing process. One of the outcomes of this reflection process is the figure found below (Figure 2). It showcases not just the process as previously explained but was then used to develop further and adjust the existing theoretical framework to be able to interpret the findings correctly and according to our research questions. Furthermore, the figure is a pillar of the later analysis (Chapter 4), showcasing the themes found and how we puzzled them in our research questions.

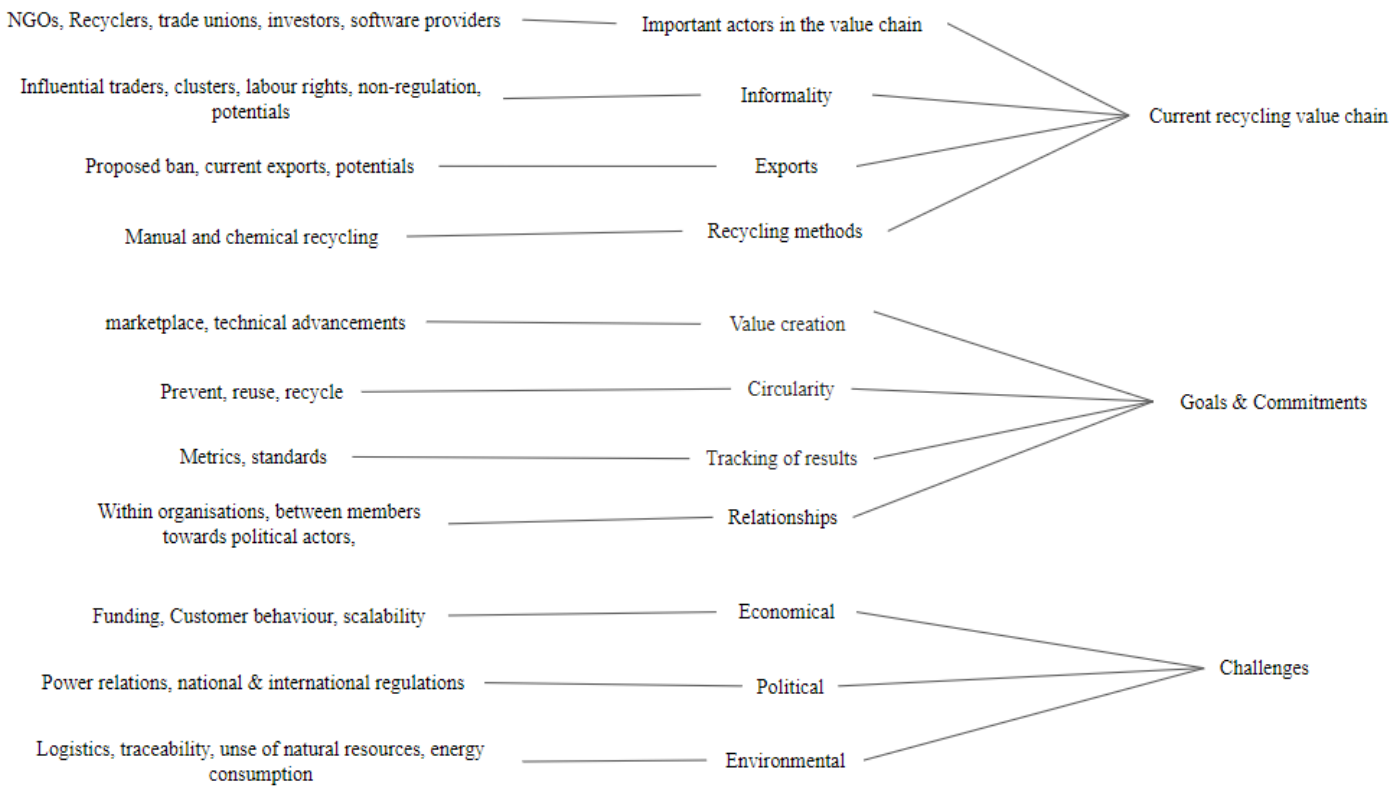


Figure 2, Authors Owned Elaboration, 2023

2.7. Ensuring Accuracy & Consistency

An important consideration of qualitative research is its challenge to "*[...]convince [...] readers that he or she has systematically collected sufficient high-quality data to explain the phenomenon and answer the research question*" (Reinecke et al., 2016, p. xviii). To ensure that the case has been carefully assembled after thorough interview protocols, rigorous thematic analysis of the data, research based on

literature, and meetings with other researchers. To ensure that a single method or source bias can be overcome, a number of tools are used, such as triangulation, credibility checks and reflexivity (Creswell, 2014; Golafshani, 2003).

Triangulation involves using multiple methods, data sources, and researchers to validate the data and findings. Within this research, different means of data collection were used, such as a systematic literature review and semi-structured interviews, in order to meet the goal of triangulation: explaining different aspects of the field of interest, leading to more confidence in the findings (Rothbauer, 2008). In order to check the credibility of our subjective data, gathered mainly from the interviews, rigorous data analysis in the form of thematic analysis was done to ensure the findings were supported by objective data (Golafshani, 2003). For this, a partially qualitative data analysis using the model of Gioia et al. (2012) was established. By coding and structuring collected data, the observer bias was reduced, and the reliability of the research was increased (Saunders et al., 2012). Additionally, as we aimed to engage in critical self-reflection constantly and to acknowledge the researcher's positionality and subjectivity, we were using reflectivity as an additional tool to ensure the consistency and accuracy of the research (Creswell, 2014; Reinecke et al., 2016).

Following the train of thought, it has to be recognised that no qualitative research is bias-free. This was also due to the constraints of this thesis, such as the given timeframe, page limitations, a small number of interviews, and limited access to potentially very relevant information resulting from the confidentiality requirements of the respondents with respect to the position they held within their organisation.

2.8. Research Ethics

Qualitative research ethics consists of procedural ethics and practice ethics (Guillemin & Gillam, 2004). Procedural ethics ensure that the research by scholars

is ethically acceptable and avoids any risks for participants. This includes, for example, explaining to everybody involved what their rights are and what the research is used for, ensuring voluntary willingness to participate and guaranteeing anonymity for the participants. Additionally, procedural ethics provide credibility for the researchers conducting the study. This process takes place before the data collection (ibid). In our case, we established voluntary participation by asking interviewees directly if they would join our study. Before every interview, we explained what the study would be used for, and how we conducted our research and guaranteed anonymity to each interviewee and their represented organisation. As we participated in a larger research study, we were obliged to sign some confidentiality agreements before starting our research. This included a ‘master's thesis and research collaboration agreement’ and a ‘data processing agreement in connection with a research project’, which state that data should be protected from third unauthorised parties and that the data gathered by us and others in the study can only be used for this specific thesis.

Ethics in practice relates to ethical issues that might arise during research (Guillemin & Gillam, 2004), especially in researchers' engagement with participants (Parsell et al., 2014). These problematic situations might occur unexpectedly and are often unpredictable (Guillemin & Gillam, 2004; Parsell et al., 2014). Furthermore, they often occur in a context in which scholars from the Global North conduct research in regard to a developing countries issue (Lorenzo-Afable et al., 2021). Therefore, researchers must be aware of the real-world context in which their study takes place and which affect their research can have on people. To avoid any negative impacts of existing power imbalances between the scholars and the participants, researchers have to understand and acknowledge their position in relation to others and reflect critically on their perspective in regard to their study and how this influences their approach towards their investigation (ibid). Researchers are obliged to follow the 'Do-No-Harm' rule, meaning that researchers should not impose any physical or emotional or psychological harm to anyone involved in their research study (Favaretto et al.,

2020). In our research, we conducted various interviews with people from Bangladesh, a developing country. However, we talked to people who are educated scholars, entrepreneurs and business owners. We did not regard our relationship as one that is heavily infected by power imbalance. Nevertheless, our research focused on textile recycling, a huge industry in Bangladesh which offers work to many people from lower-income societies. Our research might influence the lives and livelihoods of these people. We also have to recognise our own cultural context, e.g. growing up in a Western-influenced society, personal experiences etc., which might guide how we view and analyse our data. Thus, we had to be careful and responsible in handling our research.

This paper was written as part of a more extensive group research, which our supervisor guided. This gave us an advantage in getting access to certain contacts for possible interviews and data, which was gathered by other scholars within the research team. We were also able to join group meetings and, as a result, got access to the other scholars' research while also receiving feedback on our own progress. This constant exchange influenced us in how we conducted our data collection, e.g. setting up interviews, writing our interview guides etc. On the one hand, being part of this research group gave us certain advantages. On the other hand, it also limited us in certain aspects. E.g. One interview, which was of interest to us, was conducted by another group member. This meant we could not conduct it ourselves, and while our questions were also included in the interview, we were not able to ask follow-up questions, which might have furthered our study. However, the interview was conducted by a citizen of Bangladesh, who was not only able to lead the interview in the native language of the interviewee but also was more sensitive and perceptive to issues and challenges related to the Bangladeshi context. This has given us insights into certain factors which we would not have been able to detect. Additionally, we received from the research group some interesting notes from a visit to the head office in Dhaka of one European fashion brand, which is a member of the international fashion partnership. However, during

this visit and interview, no questions were aimed towards their relationship with the international fashion partnership.

2.9. Overview of the Thesis

In Chapter 1 and 2, we gave first insights into our topic of research, the research questions asked and how we approached the letter mythologically. Next, the theories and framework used to understand and later analyse the previously described industry are advanced upon (Chapter 3). Within the analysis (Chapter 4), we apply the framework to our findings and present them, answering the three research questions. This is followed by a summary of our findings, and the research and policy implications of our findings (Chapter 5).

3. Theories & Concepts

We focused on different theories and concepts to investigate the international fashion partnership and its work in Bangladesh. The partnership aims to build on the existing recycling network and eventually create a circular fashion system. We have determined some key features which we argue are defining a recycling network. These key features include governance, output-input structure and geographic scope, institutional context and economic, social and environmental upgrading (Figure 3). Analysing these features regarding the international fashion partnership's work gave us an insight into the goals reached for and challenges faced by the partnership on a global and local level and put them into a theoretical context. As in global value chains and global production networks, political contestation exists between various actors and stakeholders in global recycling networks. The same is valid for participants in a multi-stakeholder initiative. As we argue that the international fashion partnership acts as an intermediary within a multi-stakeholder initiative while working in a global recycling network, we decided to connect these theories with each other and create a theoretical framework based on the aforementioned key features defining these theoretical concepts. The following introduces the relevant literature, employed theories and concepts and other significant research which other scholars have conducted in regard to our chosen theoretical frameworks.

This is done by first establishing a thorough review of governance as it pertains to Global Value Chain, Global Production Network, Global Recycling Network and Global Destruction Network, and Multi-Stakeholder Initiative theory. Within this section, we also introduce the framework on political contestation by Levy (2008), which gave us further insight into the actors' agency regarding governance. Second, by summarising which and how challenges are handled within and by an MSI, and how input legitimacy is generated within the partnership. Third, by looking at the output-input structure and fourth, by relating to the geographic scope of the recycling network on a global level. Fifth, by introducing the Civic

Governance and Separating Power Structures framework by Tallontire (2007), which was utilised when looking at the institutional context and the relationships within the organisation, especially on a local level. Sixth and seventh, by elaborating on economic, social and environmental upgrading as the aforementioned theories view these concepts. Lastly, we explain how we composed those concepts, frameworks and theories together to establish our own theoretical framework, which was utilised in the analysis.

3.1. Governance

Governance describes the relationships of power among various actors and stakeholders within a production process. The following looks at the concept through various theories incorporating the global aspect of value chains. Table 3 showcases the difference and similarities between those theories in regard to governance.

3.1.1. Global Value Chain

Global Value Chain (GVC) theory represents all the activities, and economic actors engaged in bringing a commodity to life, from conception to the final product on the market. This includes both the production process and pre-production, like design, and post-production, such as marketing and distribution (De Marchi et al., 2012). Governance in GVCs can be defined as:

"*[...] the action and norms that shape the condition for inclusion, exclusion, and mode of participation in the value chain, which in turn determine the terms and location of value addition and capture*"
(Dallas et al., 2019, p.3).

Governance does not occur spontaneously, automatically, or systematically but is rather driven by particular actors (Gibbon et al., 2008). GVCs can be governed in two ways. Firstly, there are buyer-driven value chains, in which non-durable final

consumer products, e.g. clothing, footwear and food, are bought by final buyers like retail brands. Secondly, there are producer-driven value chains in which the lead firms' technological competencies determine the chain's ability to be competitive (Gereffi, 1994). There are five ways of governance structures in regard to how firms set up and govern linkages in GVCs (market, modular, relational, captive, and hierarchical) (Gereffi et al., 2005). These typologies depend on three variables: the complexity of information and knowledge transfer between functions in the chain, the codifiability of those transactions, and lastly, the supply base's capabilities relative to the exchange's requirements (Table 2).

Key variables of global value chain governance

Governance Type	Complexity of transactions	Ability to codify transactions	Capabilities in the supply-base
Market	Low	High	High
Modular	High	High	High
Relational	High	Low	High
Captive	High	High	Low
Hierarchy	High	Low	Low

Table 2, Key Variables of Global Value Chain Governance, 2005 - Gereffi et al., 2005

3.1.2. Global Production Network

Like GVC, Global Production Network (GPN) theory focuses on "*[...] globally coordinated inter-organizational relationships that underpin the production of goods and services, and the power and value dynamics therein*" (McGrath-Champ et al.; 2015, p.625). It argues that all the interconnected functions, operations and transactions needed to produce, distribute and consume specific products play an important role in the production process. All these interrelated nodes and links can extend across national boundaries, integrating different areas in different countries with each other (Barrientos, 2019). GPN provides a network encompassing all the relevant actors in the production systems beyond the linear progression of the product or service engaged by GVC. This linear conception of commodity production, consumption, and disposal has been outdated in recent decades since it

does not include the variety of business governance forms which have appeared recently (McGrath-Champ et al., 2015).

In contrast, the GPN framework allows to include the complexity of multidimensional layers of production, including workers, states, consumers, nongovernmental organisations, and influences of the 'natural environment'. It is thereby building further on the Global Value Chain theory (Coe et al., 2008). Additionally, while GVC focuses solely on business activities, GPN also includes the institutional context in which companies operate and regards furthermore the power balance between various actors. This is helping to shift the focus from simply the production process to other aspects of social and economic life. Regarding this production and supply chain complexity, a 'network' better describes the ever-changing production process (McGrath-Champ et al., 2015).

3.1.2.1. Framework on Political Contestation in Global Production Networks

Levy (2008) builds on that notion by conceptualising a framework which expands the Global Production Network theory by including the aspects of agency of actors involved in the production process to mobilise and deploy resources, forge alliances, shape regulatory structures and frame challenges. From this viewpoint, the various stakeholders struggle with each other over the construction of economic relationships, governance structures, institutional rules and norms, and discursive frames. This is especially relevant when new actors try to enter an existing network and 'threaten' the actions and interests of the old ones. While GPN focuses on the importance of market power regarding governance, Levy's framework tries to understand the integrated economic, political, and discursive dimensions of GPNs, which underline broader structures of power (Levy, 2008).

The existing ideas and norms on free trade, labour and institutional context are developed by dominant groups through policy, media and other educational channels (ibid). Moreover, these structures and ideologies are primarily based on

economic incentives, which support business models focusing on generating profits for firms, wages for labour and resulting in sufficient demand from consumers. The political context also shapes the business models, such as property rights and labour law, trade and tax policy, and subsidies (ibid). The actors and companies benefiting from these existing norms exercise their economic power in order to maintain the status quo or build "*[...] legitimating ideologies and governance structures to support particular economic arrangements*" (Levy, 2008, p.955). These industry strategies end up shaping broader global institutional structures.

Social movements trying to change these hegemonic fields must utilise 'clever' strategies to out-manoeuvre those structural forms of power, change power dynamics, gain legitimacy, shift economic relations, develop organisational capacity and win new allies (Levy, 2008). Accordingly, with less economic power, these actors must rely more on strategic power. They try, for example, to highlight the fact that some multinational corporations employ certain practices in developing countries to produce their products, which are unacceptable in the countries in which these products are consumed, thereby building discursive and organisational connections across the existing economic, cultural, linguistic, ethnic, and legal distinction between those places. However, this is not an easy task as hegemonic systems, like these GPNs, are established and reestablished by lasting economic, social and political arrangements (ibid), "*[...] highlighting the limitations of strategies that rely on socially motivated purchasing decisions by affluent Western consumers"* (Levy, 2008, p.957).

Levy's framework provides an insight into the nature of power and hegemony in GPNs, showcasing them as organisational production networks and political systems based on power struggles. Hence, we can view them as contested fields in which actors build strategies to mobilise resources, build alliances, and frame challenges in particular ways based on their interests and consciousness. It especially suggests how actors with less power and material resources can utilise

'clever' strategies in order to disrupt existing weak alliances and play on tensions between the economic and discursive dimensions. Meanwhile, dominant actors respond in a way that entails a degree of local accommodation and compromise around a specific issue. However, they still manage to reinforce their hegemonic position in the GPN. Thus, the framework questions the belief that value creation is based on power imbalances and unequal value appropriation (Levy, 2008).

3.1.3. Global Recycling Networks & Global Destruction Networks

Global Recycling Networks (GRNs) and Global Destruction Networks (GDNs) are complex systems of places, actors and material capabilities that work together to disassemble products and extract their constituent parts for recycling and re-use. Socio-cultural dynamics, like social norms, values, networks, and trust, are fundamental for the economic practices of recycling. In addition, GRNs and GDNs depend on the local scale to execute their daily economic relations and transactions business. They need this foundation to build and establish global networks (Wang et al., 2022). Global Production Networks are, in the beginning, separated in their networks from GRNs and GDNs, since GPNs complete their work before GDNs and GRNs start with theirs, meaning GPNs usually disregard a product after it has been sold.

In contrast, Global Destruction Networks and Global Recycling Networks start their process after the product's lifecycle ends. However, at some point, these systems are interconnected, working in the same network (Herod et al., 2014; McGrath-Champ et al., 2015). GDNs and GRNs expand the common understanding of value creation by linking sites of production and destruction and creating value by destroying what has been built before. As GPNs can shape the activities of commodity destruction further upstream, GDNs and GRNs can shape the activities of commodity production downstream since products and their value do not evaporate from capital circulation once they are discarded. Consequently, GDNs and GRNs can be viewed as significant extensions of the GPN framework (ibid).

Additionally, Global Recycling Networks and Global Destruction Network theory question the logic of governance within production processes. While GVC and GPN theory argue that products are entering networks due to buyers and their specific demands, and sellers are not interested in their products beyond their sales (Gereffi et al., 2005; Gibbon et al., 2008), GRNs and GDNs regard commodities beyond this and reintegrate them into a new value chain. This also means that the Global Production Network theory is expanded upon by creating new space for new actors to take over those intermediary roles. These actors find their place in new networks by employing infrastructural and institutional capacities and coordinating among these new markets. This disputes the idea of a linear process and instead underlines how different sectors and networks are entwined. The result is new markets with new products based on cheap, environmentally friendly supplies. In regard to textile recycling, this means that the material quality of products can vary since differential wear and use affect their conditions, creating unique and still mass-produced goods. This contradicts the GPN and GVC view, which only regards the material to their external outcomes of, or constraints on, production. Meanwhile, Global Recycling Networks and Global Destruction Networks recognise that material can transform at any given moment in the production line, thus valuing material beyond its first and initial use (Crang et al., 2011).

3.2. Multi-Stakeholder Initiatives

Within the literature, there are several definitions of Multi-Stakeholder Initiatives (MSIs). Mena and Palazzo (2012) define them as

"*[...]platforms for collective action involving various actors from civil society, government, business, and international organisations, which seek to tackle social and environmental issues that cannot be addressed through the actions of one stakeholder group alone*" (ibid, p. 527).

Schouten and Bitzer (2015) describe them as

> "*[...] voluntary partnerships between different societal actors that aim to address social and environmental problems that cannot be adequately addressed by governments, markets or civil society actors acting alone*"
> (ibid, p.2).

Scholars use many more definitions; most of them emphasise the voluntary nature of MSIs and their focus on addressing social and environmental issues by bringing together stakeholders with different perspectives and interests to find mutually beneficial solutions (Cheyns, 2014). Multi-Stakeholder Initiatives are regarded as high-potential players in initiating and guiding change processes (ibid). In practice, they frequently aim to improve CSR practices in Global Value Chains and Global Production Networks (ibid) by focusing on increasing transparency, building partnerships and fostering communication between stakeholders (Verbruggen, 2013).

As they may seem similar, MSIs are often compared and contrasted with other forms of collaborative governance, such as partnerships and standard systems. Partnerships are frequently described as voluntary, collaborative efforts between two or more parties that work together towards a common goal. Unlike MSIs, partnerships typically involve fewer, more conform stakeholders and are often focused on achieving specific goals, such as joint projects or programs. Decision-making authority within partnerships is typically shared between the stakeholders, and there may be less emphasis on balancing the interests of different groups (Kolk & Lenfant, 2012). Although MSIs may set standards, they differ vastly from standard systems, which are frameworks for setting and enforcing industry-wide social and environmental performance standards. While standard systems rely on predetermined, more or less static, standards enforced through third-party certification or auditing, MSIs rely on ongoing dialogue and

stakeholder collaboration. Standard systems may involve some stakeholder input in the development of standards, but decision-making authority is generally held by a small group of experts or industry representatives (Gupta & Ladrech, 2018). As portrait partnerships and standard systems may involve some degree of collaboration and stakeholder input, but differ from MSIs in their focus, scope, and decision-making processes. With these specifics in mind, using MSIs as an approach to address complex social and environmental challenges can have implications for governance and environmental and social upgrading at various levels, including global, national, and local (Riisgaard et al., 2020).

At the global level, MSIs can contribute to environmental and social upgrading in the Global Value Chains by promoting and enforcing sustainability and social responsibility standards (Kolk & van Tulder, 2010). They can further fill governance gaps by providing platforms for stakeholders and developing shared goals and standards. MSIs can also complement and support existing governance frameworks, such as international conventions and agreements, by providing more detailed guidance and implementation mechanisms (Tanimoto, 2019). At the national level, MSIs can help improve governance and promote environmental and social upgrading within industry sectors by promoting sustainable and responsible business practices, providing certifications, and establishing national standards. MSIs can also support government efforts to implement and enforce regulations related to sustainability and social responsibility (Köhne, 2014; Gereffi & Lee, 2014). Concerning the local level, MSIs can contribute to the governance of natural resources and ecosystems by engaging with local communities and promoting sustainable resource management practices. They can help the social and environmental upgrading process by empowering local stakeholders, giving them a voice in decision-making processes and supporting their efforts to protect their rights and livelihoods (ibid).

While holding much positive potential, MSIs also face several challenges associated with GVC and GPN. While interacting within GVCs and GPNs, MSIs

can become subject to power imbalances, leading to a narrow definition of sustainability that favours the interests of powerful actors (Riisgaard et al., 2020; Lund-Thomsen & Lindgreen, 2020). Besides that, the effectiveness of MSIs in GVCs and GPNs may be limited by the lack of resources among some stakeholders, particularly small and medium-sized enterprises that may have different resources to initiate change as larger firms. Furthermore, MSIs may focus on specific issues, such as labour standards or environmental sustainability, but need to address the broader social and economic context in which these issues arise along value chains or within production networks (Lund-Thomsen & Lindgreen, 2020). In order to alleviate some of these issues, Bruijn & Tukker (2020) highlight the importance of a strategy which involves defining clear objectives, identifying relevant stakeholders, and developing effective governance structures. Furthermore, it is crucial to understand the political economy of MSIs and their impact on global value chains. Lund-Thomsen et al. (2021) analyse that MSIs are shaped by power relations between different stakeholders and that their effectiveness in promoting sustainability depends on the broader social, economic, and political context in which they operate.

An important role, specifically in the context of GVCs, play intermediaries, as they provide platforms for communication and collaboration among diverse stakeholders in MSIs. They act as a facilitator and mediator, helping to build trust and understanding among stakeholders with different interests and agendas. Intermediaries also provide technical support, capacity-building, certification programs and the adoption of best practices and standards to enable stakeholders to meet the MSI's objectives (Lund-Thomsen et al., 2021). By doing so, they frequently act as drivers of change within value chains. The common challenges associated with MSIs still apply. However, Lund-Thomsen et al. (2021) identify the particular risk that intermediaries may become overly influential and dominant within MSIs, potentially crowding out other stakeholders' voices. However, the authors conclude that intermediaries in MSIs are highly important, particularly in

the context of GVCs. They further highlight the need for greater scrutiny of their roles and responsibilities to ensure that MSIs are effective and inclusive (ibid).

Theory	Supply Chain	Governance
Global Value Chain	All activities and economic actors which are engaged to bring a commodity to life from conception to the final product on the market. This includes the production process, pre-production, and post-production	Governance is driven by particular actors, e.g. buyer-driven or producer-driven
Global Production Network	All the interrelated nodes and links, which are needed to produce, distribute and consume specific products; extends across national boundaries	Products are entering networks due to buyers and their specific demands; sellers are not interested in their products beyond their sales
Global Recycling Network/ Global Destruction Network	Creating new supply chain through waste flows; circular fashion system Networks of places, actors and material capabilities, which work recycling and re-use; links back to GPN	Creating new space for new actors, e.g. intermediaries; connects different sectors and networks Downstream commodity production; local scale important for economic relations and transactions
Multi-Stake holder Initiative	Voluntary partnerships involving various actors from civil society, government, business, and international organisations	Complement and support existing governance frameworks Subject to power imbalances

	Seek to tackle social and environmental issues	Use of intermediaries
Framework on Political Contestation	Focus on agency of the various stakeholders	Power imbalances between new and old actors New ones have to utilise clever strategies in order to disrupt the value chain Old ones rely on economic material and resources to establish their power position

Table 3, GVC, GPN, GRN and GDP, and Framework on Political Contestation about Supply Chain and Governance, Authors Owned Elaboration, 2023

3.2.1. Input Legitimacy

The specific set-up of MSIs and their multitude of stakeholders allows for a more targeted and efficient response to specific challenges (Auld, 2014). While the complex set-up also allows for more co-determination on a specific topic in theory, in reality, it often leads to legitimacy concerns (Auld, 2014; Cheyns, 2014), and current literature has shown the need to justify the actions and norms that MSIs built upon (Mena & Palazzo, 2012). To further understand the legitimacy concerns, the notion of input and output legitimacy as dimensions of legitimacy can be used (ibid). In this paper, we focused solely on input legitimacy.

Input legitimacy refers to the belief that "*[...] decisions are derived from the preferences of the population in a chain of accountability linking those governing to those governed*" (Mayntz, 2009, p.10). It builds on the participation and inclusion of stakeholders in the decision-making process. Mena & Palazzo (2012) identify the representativeness of the stakeholder groups involved, transparency and accountability of the decision-making process, access to information and

resources, and the ability of stakeholders to voice their concerns and have them taken into account as broader challenges.

Dahan and Doh (2010) state that MSIs must have clear and well-defined governance structures and decision-making procedures that are communicated clearly to stakeholders. Furthermore, it is argued by Schouten and Glasbergen (2011) that MSIs must actively seek out and engage with marginalised or underrepresented stakeholder groups. Moreover, addressing a similar issue, MSIs may need to develop new models of participation that go beyond traditional forms of representation (Bäckstrand & Kuyper, 2017). Additionally, it must be considered that some stakeholders may have more resources or power than others. This can lead to imbalances in participation and influence. In addition, some stakeholders may be more willing or able to engage in the MSI process than others, which can further exacerbate these imbalances (Mena & Palazzo, 2012).

The later arguments lead to a commonly detected and one of the most studied issues within MSIs, power imbalances and the goal of participatory decision-making. Power imbalances frequently evolve due to the stakeholders' different sizes and economic capacities (Schouten & Glasbergen, 2011; Mena & Palazzo, 2012). In order to ensure that decisions are based on a broad range of perspectives and interests (Mena & Palazzo, 2012; James & Ponte, 2014), power imbalances need to be addressed, creating more equitable participation opportunities for all stakeholders (James & Ponte, 2014). To do so, MSIs must actively seek out and engage with marginalised or underrepresented stakeholder groups (Schouten & Glasbergen, 2011). Moreover, Bäckstrand and Kuyper (2017) call for MSIs to emphasise the importance of creating dialogue and deliberation spaces among stakeholders to promote effective participatory decision-making. Furthermore, James and Ponte (2014) suggest that increasing the transparency and accountability of decision-making processes and ensuring that marginalised stakeholders have access to information and resources will enable a meaningful discussion.

As MSIs often lack formal authority and encounter conflicting interests among their stakeholders, which can make it difficult to enforce standards or ideas (Verbruggen 2013), a big concern is accountability. In the context of MSIs, accountability refers to the mechanisms that ensure stakeholders are held responsible for their actions and decisions within the initiative. In this way, accountability can serve as a safeguard against the possibility that specific stakeholders dominate the decision-making process and marginalised others, and is therefore deemed an important aspect of the decision-making process of MSIs and is closely related to input legitimacy (Mena & Palazzo, 2012; Schouten & Glasbergen, 2011). Furthermore, it is argued that accountability is essential for building trust among stakeholders and consequently ensuring that MSIs achieve their goals. In addition, it can help to address power imbalances and ensure that the voices of all stakeholders are heard and considered in the decision-making process (Mena & Palazzo, 2012)

Accountability can be achieved, but due to the nature of MSIs, only partially secured in several ways. Frequently, transparency, excess to relevant information and participation are deemed valuable tools, but as discussed above, challenges are often faced concerning these tools (Mena & Palazzo, 2012). Schouten and Glasbergen (2011) also argue for transparency but focus on the importance of a clear governance structure that outlines the roles and responsibilities of different stakeholders. This helps ensure that stakeholders are held accountable for their decisions and actions within the initiative.

3.3. Output - Input Structure

The input-output processes that bring a certain product to the market include, for example, research and development, design, production, distribution and marketing, and in some cases, the recycling of products after use. In this case, they are referred to as output-input processes. By studying the organisations, which are part of these processes, researchers can understand the production chain since each

segment owns specific characteristics and dynamics, e.g. global or domestic; state-owned or private; large, medium, or small; and so on. Thus, by creating general knowledge of each of these segments within the chain, it is possible to identify and differentiate each one by which value they add to the final product and to understand the governance structure within the chain (Gereffi & Fernandez-Stark, 2018).

In Global Production Network and Global Value Chain theory, the matter of value regarding waste, discarded products, and the potential after-lives of goods needs to be considered. Instead, it is argued that every product's life cycle has a beginning and an end (Crang et al., 2013). And that at the end of the cycle, products are transformed into waste (Herod et al., 2014). This lack of attention to additional supply flows, in which outlining where a commodity's life begins and where it ends is often challenging to do (McGrath-Champ et al., 2015), is questioned by various scholars (Crang et al., 2011; Herod et al., 2014; McGrath-Champ et al., 2015; Wang et al., 2022). These scholars challenge this singular direction viewpoint in dominant political-economic commodity chain approaches as old commodities are re-used and recycled, thus interconnecting with other value chains. In global recycling networks, products are considered beyond their first usage and are therefore calculated into the supply chain beyond their initial purpose. This creates the opportunity to build new markets in recovered and recycled materials, which offer cheap supplies and, consequently, cheap products that would otherwise not exist. This new value creation process challenges the so far assumed linear operation of creating value by building new supply flows between different sectors and networks. Therefore, GRNs illustrate the materiality of goods and highlight that products can be used beyond their initial purpose, employing a new cultural practice of valuing materials and resources. This is the art of finding value in what is there (Crang et al., 2013).

Furthermore, GRNs help to find solutions for many problems concerning climate change. Initiatives and agreements in recent years, like the Sustainable

Development Goals (SDGs) set by the United Nations (UN) in 2015 or the European Green Deal introduced by the European Union in 2019, put more pressure on companies to produce more sustainable and environmentally friendly products. In addition, customers' demand for so-called green commodities is rising through more awareness of the dire effects of climate change. In order to showcase that products are made in an eco-friendly way, certificates and ecolabels are utilised. In Global Value Chains, sustainability measurement requires a multifaceted assessment including environmental, social and economic impacts. One aspect of this can be the usage of recycled materials (Gregson & Crang, 2015).

3.4. Geographic Scope

The global economy is vastly interconnected nowadays. While the Global North develops through R&D product designs, the Global South realises those commodities through raw materials and cheap labour. Thus, countries involved in the same production chain leverage their competitive advantages in assets. Mapping these interconnections in regard to the geographic scope of global industries helps to realise shifts and evolutions on the local, national, regional and national levels (Gereffi & Fernandez-Stark, 2018).

In global recycling networks, buyers, traders, and brokers in developed countries collect waste, which is re-used and/ or recycled in developing countries. This is called a North-South waste flow. However, through this process also occurs a transfer of ideas, capital, material and knowledge, which can benefit both actors from the Global North and Global South (Gregson & Crang, 2015). Additionally, there are South-South waste flows, in which materials are collected and recycled within developing countries. The fact that the trade with recycled and second-hand clothes reflects differences in the levels of economic development between the Global North and South can be viewed through the lens of Global Production Network theory. Some nodes of reproduction and consumption within the

second-hand textile industry are linked through cultural, ethnic and social ties, which lead to export and import processes, and benefit both the suppliers in developing countries and buyers in developed countries. However, other GPNs lack coordination between different nodes. Therefore, the value gain lies with only some companies in the network, mostly the ones in the Global North. Actors, which collect and export discarded clothes, and commercial operators, which sort and reproduce these garments are adept at capturing value (McGrath-Champ et al., 2015).

Value is created by human labour; therefore, the labour process and how labour processes are enacted in different places significantly shape the organisation of Global Destruction Networks (Herod et al., 2014; McGrath-Champ et al., 2015). Consequently, this aspect is important when analysing the geographical and organisational evolution of GDNs and GRNs (Herod et al., 2014). Additionally, since these networks can raise the value of products and are therefore an essential part of the global supply chains, the labour done by 'waste' workers should not be accounted as unvalued but instead be viewed as an essential part of the Global Value Chain and of making more sustainable products (McGrath-Champ et al., 2015).

3.5. Institutional Context

GVC and GPN theories argue that certain key players drive the supply chain (Gereffi et al., 2005; Gibbon et al., 2008). While GVC theory focuses on the buyers or producers (Gereffi et al., 2005), GPN theory looks beyond the direct participants in the value chain (Gibbon et al., 2008), incorporating a horizontal and vertical dimension (Tallontire, 2007). This includes representatives of international trade policy, national regulators and other members of society, e.g. consumers. Thereby, other points of view are included than the ones focusing on mere competition. Welfare, loyalty and civic criteria also play a role, adding a cognitive/ normative aspect to regarding global supply chains (ibid). This influences the role

of quality and quality control and who decides on these measurements. While these important extensions on the approach of GVC towards governance give an insight into how civil society interacts and influences supply chains, it lacks a more micro viewpoint when looking at initiatives, like NGOs, which act within a supply chain and formulate their ideas and demands (ibid).

These cross-sectoral partnerships at the global level help to evolve the interpretation of governance by focusing more on democratic policies and civic activism than socio-economic concerns, resulting in 'humane governance' and 'democratic governance' (Tallontire, 2007). These are based on principles like participation, fairness, decency, accountability, transparency and efficiency. Whether for-profit or non-profit, the initiatives can involve various members from different countries (Global North and Global South) and the private and non-private sectors. Thus, as in GPN, they need more than a vertical perspective in regard to governance, but also a horizontal one. They have to utilise a framework built on civic governance and separating power structures. These aspects showcase these partnerships as regulators who divide governance within supply chains into three parts.

1. Legislative Governance (who makes the rules and how), which focuses, for example, on if rules are made by utilising international standards, if local aspects play a concern and who is involved in the rule-making to begin with.
2. Judicial Governance (how conformity is assessed), looks at audit procedures, inspection and conformity assessments, and who is auditing and how.
3. Executive Governance (management of subordinate links to enable participants to meet these operating rules; use of incentives and sanctions), which views if and how certain set standards are met and what happens if not.

Utilising this framework helps to map who of the members in a certain partnership is participating in and representing which area, hence, who is influencing and pushing a particular agenda. This can have positive implications for groups, which are generally underrepresented and often need more power to accomplish their own goals. Therefore, the framework can be used to regard the underlying influences and interactions of all the members of a particular partnership and how these influence the governance within this initiative.

3.6. Economic & Social Upgrading

GVCs are regarded as an opportunity for learning and upgrading for the firms participating in them. This also includes companies from developing countries. By taking their indigenous capabilities and resources, developing firms can upgrade their products through technical capabilities provided by companies from developed countries and meet global standards. Engaging in transferring new technology, skills, and knowledge can help local firms cooperate with leading multinational enterprises (MNEs). The upgrading of products and companies within GVCs is a service for developing companies and developing countries and their sustained growth (Gereffi et al., 2014; Ponte, 2019). Further, upgrading also entails social dimensions and can lead to the "*[...] improvement in the rights and entitlements of workers and social actors, which enhances the quality of their employment*" (Barrientos et al., 2010, p. 324).

Recycling textile waste can support the nation's economy by, for example, reducing the high cost of waste disposal and creating new jobs and sources of livelihood for people (Cuc & Vidovic, 2014; Norris, 2012). However, the trade with second-hand clothing or clothes made from recycled materials depends on the consumption of new garments in the Global North and the rate at which these are discarded again. These characteristics are interconnected with the Global North's temporal fashion cycles and consumption trends, resulting in an unaccountable supply of unknown quality and quantity of textiles and garments. Further factors that play a role in this business are international waste management policy and

trade regulations, currency exchange rates and transport costs. Additionally, it is essential to know that these materials barely make it back to the Global North, but are instead re-used in the Global South, making developing countries a market for low-quality clothing (Norris, 2012).

3.7. Environmental Upgrading

Environmental upgrading is seen as "*[...] the process by which economic actors move towards a production system that avoids or reduces environmental damage from their products, processes or managerial systems*" (De Marchi et al., 2012, p. 65). Some scholars even argue that the production process could entail a positive outcome and help decrease the ecological footprint on the planet (Krishnan, 2017). There are different ways for companies to engage in environmental upgrading. First of all, they can employ more eco-efficient processes by investing in superior technology or converting production systems. Second, they use more environmentally friendly resources, like recycled, recyclable, or sustainably sourced raw materials. Lastly, companies can improve their overall business and managerial practices by adopting standards and certifications set by, e.g., the UNs Sustainable Development Goals, the European Green Deal or the Cradle to Cradle certificate (DeMarchi et al., 2019).

Three key drivers of environmental upgrading exist: Internal and external firm catalysts and those that arise from leading companies. Internal drivers are usually guided by an interest in gaining a competitive advantage by decreasing production costs which incidentally also reduces the environmental footprint, e.g. employing energy efficiency technology when energy consumption costs are rising (Poulsen et al., 2016). External drivers include pressure from customers, policymakers and other stakeholders, for example, as mentioned above, the UN and the EU. Adopting standards and certifications speaks to environmentally friendly customers. Leading companies can pressure their suppliers to employ more eco-efficient processes and consequently achieve environmental upgrading, e.g.,

re-, down- and upcycling (DeMarchi et al., 2019). Recycling textile waste can help solve numerous environmental problems like reducing natural resources or pollution (Cuc & Vidovic, 2014).

3.8. Theoretical Framework

The following summarises the theoretical framework used as a lens to analyse the gathered data to answer the three research questions. The goal of the partnership was to connect various new and old stakeholders within the garment and textile network with each other in order to refigure parts of the apparel industry into a circular fashion system in Bangladesh. We argue that the organisation can be regarded as an intermediary in a multi-stakeholder initiative while working within a global recycling network. Thus, we created our own theoretical framework for this paper by connecting the theories on those concepts with each other to analyse the primary and secondary data in this research.

We determined key features for a global recycling network based on the work by Gereffi and Fernandez-Stark (2018), which defined some dimensions for Global Value Chain analysis. However, we reconfigured these dimensions regarding a global recycling network. We thus ended up with five key features: governance, output-input structure and geographic scope, as well as the institutional context and economic, social and environmental upgrading (Figure 3).

Key Features of a Global Recycling Network	
Governance	Creating new space for new actors, e.g. intermediaries; connects different sectors and networks Downstream commodity production; local scale important for economic relations and transactions Power imbalances between new and old actors New ones have to utilise clever strategies in order to disrupt the value chain Old ones rely on economic material and resources to establish their power position
Output - Input Structure	Creating new value out of discarded materials Start their process after the product has ended its lifecycle
Geographic Scope	Waste flow between Global North & South Effects of global regulations on local workers
Institutional Context	Regard the underlying influences and interactions of all the members of a certain partnership and outside stakeholders How do these influence the governance within this initiative?
Upgrading - **Economic** - **Social** - **Environmental**	Create new jobs and sources of livelihood for people Products are considered beyond their first usage and are calculated into the supply chain beyond their initial purpose Waste is disassembled into new resources

Figure 3, Theoretical Framework by Connecting Key Features of GRN, Authors Owned Elaboration, 2023

The international fashion partnership tried to environmentally upgrade products by up-, down- and recycling textiles and garments that seemingly have reached the end of their lifecycle. They then returned those into a new supply chain, creating a circular fashion system connecting actors from the Global North and Bangladesh. Additionally, the organisation aimed to upgrade social and economic aspects for

involved companies, fashion brands and workers by creating a new market, new jobs and sustainable livelihoods. We analysed how social, economic and environmental upgrading was exercised, who was creating value and who benefited from this value creation through the lens of the Global Recycling Network and Global Destruction theory. These theories were also utilised to investigate the newly structured output-input processes of the value chain and map the geographic scope of this specific recycling chain on a global and regional level.

The success of this endeavour was influenced by regulations, laws and norms instituted on the state and international levels. This institutional context we examined through the framework on civic governance and separating power structures based on the works by Tallontire (2007).

The same approach was utilised to investigate how well the actors involved in the partnership worked together, which is based on how the organisation governed the network as an intermediary. These relationships and possible power imbalances were further analysed through the lens of the framework on political contestation by Levy (2008), which gave us an insight into how the various stakeholders tried to push for their agenda in order to reframe the existing value chain. In addition, the Multi-Stakeholder Initiative theory was utilised to investigate how this intermediary brought together stakeholders with different perspectives and interests to find mutually beneficial solutions.

Multi-Stakeholder Initiative theory was also used to study the various challenges the partnership and its members had to face and if and how they overcame those to run successfully. Thus, creating input legitimacy. One main challenge was the informal sector in Bangladesh. How this aspect of the recycling chain was included or excluded by the organisation and how the work of the partnership might have influenced the workers in the informal sector was also investigated through MSI. Additionally, the informal sector was looked at through the lens of the Global

Recycling Network and Global Destruction Network theory, as it also pertains to social and economic upgrading.

By utilising the defining features of Global Recycling Network and Global Destruction Network theory and applying these to the work of the partnership, we were able to analyse the work done by the international fashion partnership and put their work into context within the frame of governance, output-input structure, the geographic scope, the institutional context, social, economic and environmental upgrading.

4. Analysis

In the following sections, we answered our three research questions by presenting our gathered data and analysing it through the lens of our theoretical framework. Each research question is analysed regarding output - input structure, geographic scope, governance, economic, social and environmental upgrading and the institutional context. It was only analysed what was found to be applicable to the individual question.

4.1. The Garment and Textile Recycling Chain in Bangladesh

Firstly, we will answer our research question, "*What does Bangladesh's current garment and textile recycling chain look like?*". In order to open up the analysis, we are presenting a contextualisation of the current recycling chain in Bangladesh within the global context. This is in order to introduce the reader to the unique place the recycling chain at hand holds.

The following presents the positioning of Bangladesh's recycling industry between Western Europe - a wealthy, large emitter and small recycler of post-consumer waste (Interview 5), India, an importer and recycler of pre-consumer and post-consumer waste (Appendix 1), and Pakistan, which, similar to India, imports and recycles at a larger scale (Lingås et al., 2023). These countries/areas were chosen because many European countries emit large amounts of waste, are frequently referred to as environmentally conscious and have invested in advancing the apparel industry, which is underlined by the work done by the introduced NGOs. Pakistan and India were chosen as they are both relatively geographically and economically close to Bangladesh. Both have a thriving recycling industry, but contrary to Bangladesh imports textile waste. According to the recently released report "*ETC/CE Report 2023/4 EU Exports of Used Textiles in Europe's Circular Economy*" (2023), which looked at EU used textile exports from 2000 to 2019, several trends have been recognised that could influence the

decision-making and further advancement, and therefore, the standing of Bangladesh's recycling industry in the Global Value Chain.

The amount of textile waste being exported to Asia, in particular, has been increasing to 41% of all used textile exports from the EU and Great Britain. At the same time, the amount of textile waste has almost tripled between 2000 and 2019 to 1.7 mil tonnes (Lingås et al., 2023). Although the EU will implement a new law in 2025 regarding segregation of textile waste at the household and municipal level, it still produces a large amount of textile waste (Interview 6; Interview 5). The current global recycling chains we explored in our research show that post-consumer waste can be divided into three major streams. One is donation; a significant culture surrounds the donation of used but still wearable clothing. Some for-profit organisations collect clothing, sort the donations and sell the good quality donations in second-hand stores. The rest is sold to a vendor who does a second sorting, selling the better quality mainly to Eastern Europe and the lesser to Asia or Africa (Interview 6). Tracking what happens to these donations further down the value chain is challenging. A second-hand vendor described the situation as follows:

"We have a contract with him and we have an agreement on what he can do and not can do. [...] But then he sells this to a second person and then to a third party and then it's impossible for us to control this anymore [...]"
(Interview 6, 00:17:28 - 00:17:43).

The second stream for post-consumer waste is re-use in a more direct sense. Many people give used clothing to friends or family. Some people also sell especially worn higher-end clothing at specific flea markets (ibid). Thirdly, waste gets exported to be recycled or to go to landfill, depending on the destination and quality of the garment. (Interview 5). All in all, a relatively small amount of the waste emitted in Western Europe is dealt with in Europe. For the concerned economies in Asia, the fact that waste streams are increasing is, on the one hand, a

challenge, especially from a sustainability aspect, but on the other hand, a chance as many economies rely on the garment sector, including Bangladesh.

Pakistan recycles large amounts of pre- and post-consumer waste mostly in special economic zones, which were built with special business incentives, making the import of waste and export of garment/yarn produced easier (Interview 8). Pakistan started importing waste in 2008 and has experienced a large capacity built-up, making recycling a profitable industry (Lingås et al., 2023). Nonetheless, some stakeholders perceive the import negatively, as they fear negative impacts for their own manufacturers, mainly if usable clothing and not just scraps are imported (ibid).

For the same reason, Indian legislation solely allows the import of garment scraps of both post-consumer and pre-consumer waste. Compared to the more prominent importer Pakistan, India imports more waste from within Asia, e.g. from Bangladesh (ibid). In India

> "*[...] imported wool fibres or rags are shredded and spun into recycled yarn for manufacturing new blankets, knitted yarns and woollen fabrics for the domestic and international clothing markets like South Asia and East Africa*"
> (Lingås et al., 2023; p. 18).

This is done in clusters similar to those found in Bangladesh, the biggest being Panipat (Bairagi, 2014).

Although several similarities can be found, Bangladesh holds a unique position within the global streams of garment waste. This is because they only export but do not import any type of garment waste (Interview 8). The legislative reasoning is that the amount of pre-consumer waste being produced by Bangladesh is large enough to cover recyclers' needs and to be exported. However, as the recycling industry is advancing, problems of feedstock quality and "*[...] meeting or getting*

enough feedstock to achieve [...] their desired scale" (Interview 8, 00:23:33 - 00:23:37)become an issue that can slow down the further development of this industry (Interview 8). The additional waste exported to Asia could have a chance in this context, especially since the price for waste has continuously decreased and the production of recycled yarn is a very price-sensitive business (Lingås et al., 2023). Importing waste could help with these problems and could open up the market to post-consumer waste since there is currently mostly pre-consumer waste being recycled (Interview 8). Currently, stakeholders in Bangladesh are taking a different route, tackling the problem by proposing a ban on exports and keeping all the recyclable waste in the country (Interview 1). This would allow for lower prices and higher accessibility of the easier-to-recycle pre-consumer waste (Interview 8).

Ultimately, Bangladesh will need to decide whether to open up the import market or close it completely to create a loop system within Bangladesh. Regardless, their position is unique as one of the biggest emitters of pre-consumer waste.

4.1.1. Development of the Industry

After explaining the position of this recycling chain, we will now elaborate on what this value chain looks like today, starting with the development of the garment and textile recycling chain.

The history of the textile industry in Bangladesh dates back to the British colonial period, when the country was part of British-India. However, according to a large Bangladeshi industry association, the modern apparel industry in Bangladesh started its journey in the 1980s by introducing ready-made garments (RMG) (Author 3 - c, 2020). After the independence from Pakistan in 1971, the newly formed government focused on rebuilding the country's economy, which had been devastated by the war. One of the strategies was to promote the development of the textile industry, particularly the garment sector, as a way to create jobs and generate export revenues (Islam et al., 2013). At the same time, the growing

strength of the business sector manifested in a more significant representation of business owners in the country's legislative and executive branches of the government, giving birth to some of the structures and connections present today (Kochanek, 2000).

The garment industry in Bangladesh has a long history of labour exploitation and poor working conditions (Author 1 - e, 2023). Trade unions have played a significant role in advocating for workers' rights, improving working conditions, and ensuring fair wages. They have also been instrumental in ensuring compliance with labour laws and international labour standards (Khan et al., 2022; Khan et al., 2019 - a). Furthermore, they have played a crucial role in promoting the garment industry's overall growth and development by supporting its members and negotiating with international buyers (Ahmed et al., 2014). On the other hand, the industry has been characterised by long working hours, low wages, and poor safety standards, leading to accidents and tragedies like the Rana Plaza collapse in 2013 (Author 1 - e, 2023).

Due to the remaining low standards, trade unions have been criticised for being ineffective, lacking proper representation of workers' interests, and being influenced by political affiliations. This has been partly due to the way that they have been set up, often including factory owners and politically active members, which has led to their susceptibility to political influences (Bhuiyan, 2012). Moreover, the lack of collective bargaining power and poor representation of workers has hampered the effectiveness of trade unions in the garment industry (Khan et al. 2019 - a).

The mentioned Rana Plaza event, also known as the Rana Plaza collapse, was a catastrophic industrial disaster that occurred on April 24, 2013, in Savar, Bangladesh. It involved the collapse of an eight-story building called the Rana Plaza, which housed several garment factories, shops, and offices (International Labour Organization, 2021). The collapse killed 1,138 people and injured over

2,500 others, making it one of the deadliest industrial disasters in history. Most victims were female garment workers producing clothing for major global fashion brands (Author 1 - e, 2023). The Rana Plaza disaster has since impacted the industry inside and outside of Bangladesh in several ways (ibid, 2023).

The disaster has increased the attention given to worker safety and labour rights by various stakeholders, including international organisations, governments, and consumers. It has highlighted the need for greater transparency and accountability in the garment industry, particularly in relation to the practices of apparel brands and their suppliers (Manzur, 2016). This has led to the creation of various initiatives. Some have focused on improving regulations and enforcing labour standards in the garment industry, for example, the Accord on Fire and Building Safety in Bangladesh, a legally binding agreement which has been instrumental in conducting factory inspections, remediation efforts, and supporting the development of worker safety training programs (Accord, 2023). Additionally, organisations such as Fashion Revolution have sought to ensure living wages and "*[...] safe, dignified working conditions*" (Fashion Revolution, 2023). As mentioned, the attention and calls for transparency surrounding the event have resulted in greater efforts to trace and monitor supply chains to ensure that human rights are respected (Manzur et al., 2017). One of the initiatives deriving from this idea has been the yearly announced industry benchmark called the "*Fashion Transparency Index*" (Fashion Revolution, 2022).

Most researchers agree that Rana Plaza had had a significant impact on efforts towards worker safety and rights, as well as transparency in supply chains. While progress has been made, there have been ongoing challenges and the need for continued efforts to address the systemic issues facing the garment industry (Author 1 - e, 2023).

The garment industry has been the largest export earner and one of the country's main drivers of economic growth since 1971 (Yunus & Yamagata, 2012). Its

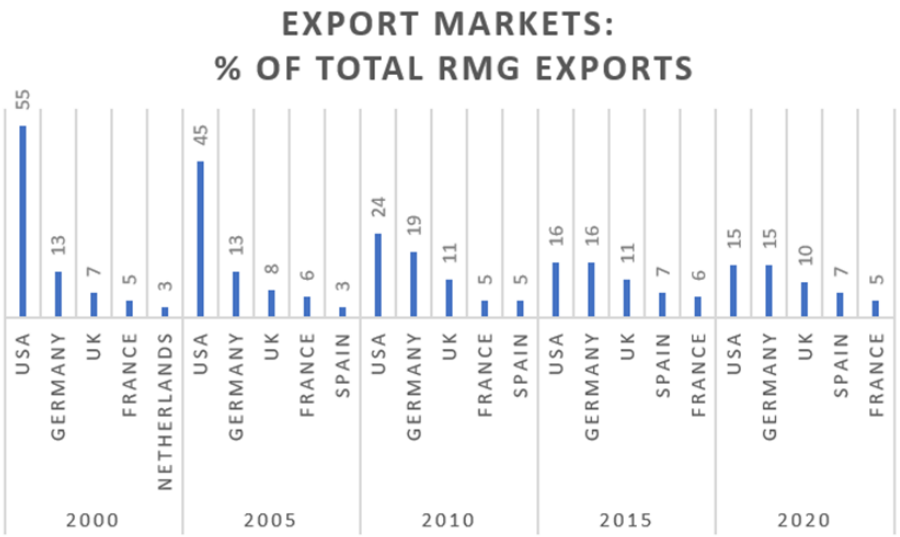
growth has been remarkable. Exports of RMG have been increasing from USD $32 million in 1984 to USD $31.457 billion in 2019 (Author 3 - c, 2020). Due to the outbreak and the impact of Covid-19 on the global economy, there has been a slight decrease in export numbers in 2019-2021 (Author 3, 2022). Nonetheless, throughout the decades, the industry has contributed significantly to poverty reduction and the empowerment of women, who comprise the majority of the workforce in the sector (Islam et al., 2013).

Graph 1, Export Total vs. RMG, 2023 - Data retrieved from Author 3 (Appendix 2)

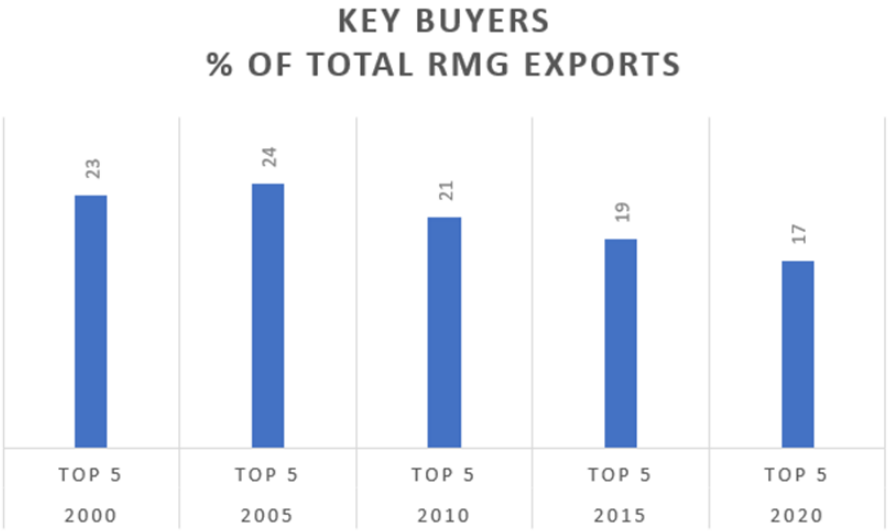
The rapid development has been made possible by various factors such as low labour costs, favourable government policies, and access to the global market (Khan et al., 2019 - b). Furthermore, a large and growing workforce, preferential trade agreements with developed countries and the strategic location near major markets has been instrumental in attracting foreign investment, creating job opportunities, and generating foreign exchange earnings (Khan et al., 2019 - a). Moreover, it has been known that factory and business owners are members of

parliament. This strong connection between the government and the business and factory owners has left the industry barely regulated, promoting further growth (Ahmed et al., 2014).

While looking at the significant growth rates within the garment industry (Graph 1), it is also worth looking at the markets and buyers whom the growing numbers have fed. As shown by Graph 2, most RMGs have been exported to the USA and Europe. However, it has to be noted that the industry also serves a diverse and growing range of markets in various regions, including Asia, the Middle East, and Africa, which explains the lower share in the top five markets. The key buyers of Bangladesh's garment industry (Graph 3) have been primarily large multinational companies from Europe and North America (Author 3, 2022; Export Promotion Bureau, 2023). The top five buyers have made up between 17% and 24% of the RMG exports in the past 20 years (Graph 3). It is important to note that while these buyers have been significant, the industry's reliance on a few large buyers has been a source of concern for some industry analysts, as it has made the industry vulnerable to shifts in demand and supply chain disruptions (Islam et al., 2013).



Graph 2, Export Markets: % of Total RMG Exports, 2023 - based on numbers by Export Promotion Bureau of Bangladesh (Appendix 2)



Graph 3, Key Buyers % of Total RMG Exports, 2023 - based on numbers by Export Promotion Bureau of Bangladesh (Appendix 2)

Another significant factor in the development of the garment sector have been industry associations. They have represented workers and advocated for all issues related to this sector, e.g. the introduction of international standards (BKMEA, 2022). Unions' goals have been frequently supported by international organisations. Generally speaking, the role of industry associations in the development of the garment industry in Bangladesh has been a subject of debate and discussion (Islam et al., 2013).

4.1.2. Re-, Down- and Upcycling in Bangladesh

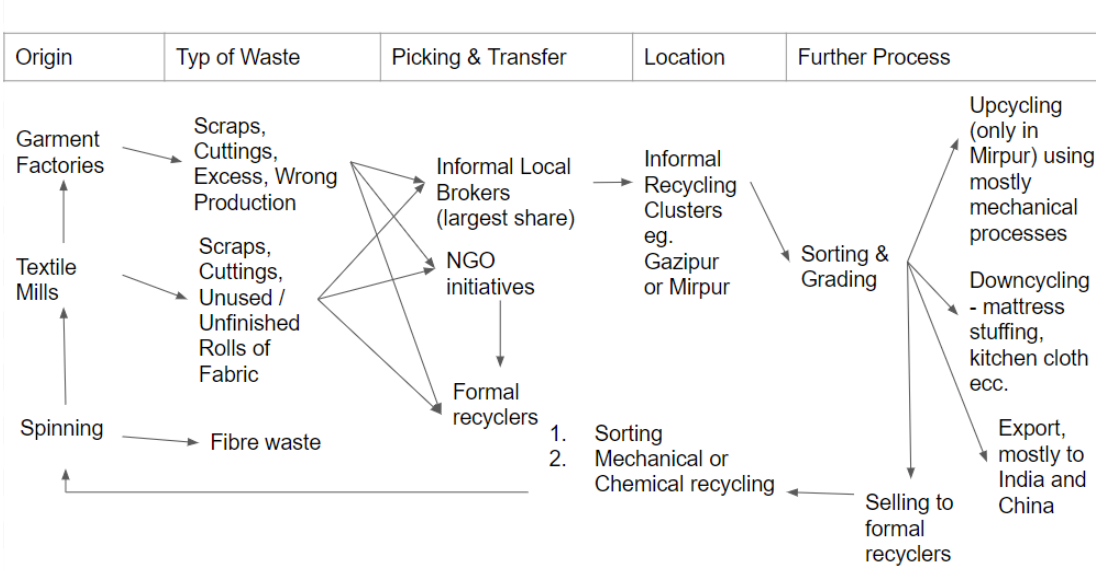


Figure 4, Existing Recycling Chain in Bangladesh, Authors Own Elaboration, 2023

According to research, the practice of re-, up-, and downcycling has been present in Bangladesh for a long time, but only since the emergence of the ready-made garments (RMG) industry in the 1980s has it become as significant as it is today as part of the country's economy (Yunus & Yamagata, 2012). As shown in the visualisation, merging our findings with the five steps suggested in the "*Deadstock Pre-Feasibility Study Bangladesh*" report, we describe the current recycling value chain in the following four phases: Origin of waste (input), Picking & Transfer, Sorting & Grading, Further processing towards the output. The input consists of approximately 577,000 tons of waste, of which 250,000 tons is 100% recyclable cotton waste (Akter et al., 2022). Regarding the waste collection (Picking & Transfer) process, pre-consumer waste usually gets collected by influential local actors, frequently referred to as Brokers (Interview 13). It commonly stays in the informal sector, which "*[...]has been in operation for at least [...], 50 years*" (Interview 2, 0:16:38 - 0:16:44). A limited number of official initiatives collect textile waste for recycling in Bangladesh. There are waste management programs, driven mainly by NGOs, where pre-consumer waste is collected and sold to formal recycling facilities (Author 2, n.d). However, they appear to be of small scale

(Waste Concern, 2022; Village Education Resource Center, 2023). After being collected, the waste is usually manually sorted and graded based on fibre type and quality (Author 2, n.d). Characteristics such as fibre mix, chemicals, colour and length of fibre are indicators commonly used in this process (Interview 9). Here the decision is made whether the waste joins the upcycling or downcycling stream. A fraction of the sorted material is sold to formal recyclers (Interview 1).

In the formal recycling stream, the sorted waste is then processed (Author 2, n.d). Depending on the grading and especially the type of fibre, the waste can be recycled in different ways. There are two major ways, chemical and mechanical recycling (Appendix 1) (Interview 2; Interview 8). Certain materials that contain a higher percentage of synthetic material cannot be handled by mechanical recycling. There are chemical solutions to tackle higher percentages of synthetics, "*[...] but we can't do (scale) the chemical because chemical requires a lot of energy. We don't have, we don't generate that much renewable energy*." (Interview 8, 1:2:45 - 1:3:6). Multiple interviewees mentioned that recycling pre-consumer waste is generally easier because it is less diverse and cleaner than post-consumer waste (Interview 9). While currently, Bangladesh does only provide very limited chemical recycling; most waste is mechanically recycled (Interview 2; Interview 8). The mechanical recycling process involves shredding the waste into small pieces, cleaning it to remove impurities, and carding. Afterwards, the recycled fibre is spun into yarn (Author 2, n.d). As of now, recycled yarns are not exactly like virgin ones. The fibres in the recycled yarn are shorter, therefore more difficult to work with and are "*[...]a little bit worse off in terms of traditional quality parameters*" (Interview 8, 00:20:39 - 00:20:44). Lastly, the recycled product is sold in local and international markets. It is commonly used to create new products (ibid).

Not all products get recycled in the Bangladeshi recycling chain. Our research shows that approximately 60% of the wastage is exported to various countries, mainly to India and China (Interview 2). This is regarded as a resource, therefore a

ban on exporting garment waste has been proposed (Interview 1). We received mixed messages on the proposed ban. While some actors were open to it (Interview 8), others were critical towards the current recycling facilities being able to handle the amounts of waste (Interview 1; Interview 14). Infrastructure investment would be needed to facilitate an expansion of the industry regarding post-consumer waste (Interview 13).

As shown, the current system in Bangladesh is complex and involves multiple actors, including small-scale entrepreneurs, larger-scale businesses and informal workers (Matter et al, 2013). Throughout literature and within our interviews, the informal sector was given a significant role in the re-, up- and downcycling industry, with many workers engaged in sorting and processing discarded clothing. As the system is largely unregulated, there is a lack of governmental oversight in the informal sector. This results in poor working conditions for waste pickers and processing workers, as well as environmental and health hazards from using hazardous chemicals in textiles (Ahmed et al., 2014). Furthermore, due to its non-regulated status, it is difficult to identify one single entity that is controlling the informal markets in Bangladesh (Tabassum et al., 2017). This is because the informal sector is characterised by local actors overseeing different clusters (Interview 4). These clusters are accumulations of shops selling very similar products, such as pre-sorted garment waste, also called Jhoot (Appendix 1).

Clusters focusing on Jhoot trade are traditionally close to RMG factories. This is due to easier access to waste materials (Interview 4). The biggest Jhoot cluster is currently Gazipur, where 2000-3000 shops are located (Akter, 2023). It was described that although their way of work seems chaotic for an outsider, it is highly organised (Interview 2). Although there is a large number of small-scale actors, they are non the less organised, active groups (Tabassum et al., 2017; Interview 12). Due to this marketplace's economic value and size, the informal sector possesses its own hierarchical systems, where local stakeholders trading Jhoot (Brokers) can be highly influential figures, so far as it was mentioned by multiple

interviewees that connections to the political and economic elite exist (Interview 2; 13). The system of high-ranking Jhoot traders was described as being Mafia-esk (Interview 2; Interview 4) and sometimes even dangerous for outsiders (Interview 8). This connection poses a challenge which will be expanded upon later in the analysis (Chapter 4.3.). Due to the sensitivity of this network, it is hard to get access and, therefore, reliable data (Interview 1). While there are some initiatives which try to formalise this market in order to improve labour standards, environmental practices and to drive investment, it remains largely fragmented and decentralised (Author 1, n.d.).

In addition to the informal Jhoot market, which we expected to be mentioned, we found that within the interviews, the sub-contracting sector in the RMG industry is also described as informal. Many places can hardly be described as factories, which are unregulated and where "*[...] all sorts of labour violations*" occur (Interview 12, 00:13:36 - 00:13:39). It is known, at the latest since the Rana Plaza event, that subcontracting is an issue in the RMG industry. However, other interviews mentioned the Rana Plaza collapse as a "*[...] turning point*" (Interview 2, 1:6:38 - 1:6:43) towards better labour rights and safety standards (Interview 2).

Looking at the findings, although there are connections of this recycling chain towards international markets, its geographical scope can be described as national, mostly even local. This is due to the strong local connections and close proximity of the recycling clusters to the factories and mills (Interview 4). Furthermore, along the recycling chain, economic, social, and environmental upgrading occurs. In economic terms recycling is defined by creating new value from a waste or used product, therefore upgrading is happening in multiple places of the recycling chain. Jobs that provide livelihoods for many, would not exist without the current recycling chain, can be categorised as social upgrading. In environmental terms recycling is better than producing a new product, but as we will mention later, there are a number of negative implications for the environment resulting from the recycling process as it currently presents itself.

Overall, our research suggests that the re-, up- and downcycling industry in Bangladesh is characterised by a mix of formal and informal actors, with the informal sector playing a particularly important role in the sourcing and processing of textile waste (Matter et al., 2013). While the involvement of multinational companies in the second-hand clothing market and the trade of garment waste may provide new opportunities for formalising and improving working conditions in the informal sector, there is also a need to address the structural inequalities that underpin the informal economy in order to ensure that all workers are able to access decent wages and working conditions (Author 1 - b, 2023).

4.1.3. Potentials of the Recycling Industry

Bangladesh is estimated to hold an untapped potential of an estimated four billion USD within the recycling industry. This makes an industry shift from pure production to recycling for the Western as well as the home market highly attractive. Due to the already shown interest by multiple stakeholders in this topic, Bangladesh is deemed one of the key players in scaling up the recycling sector (McKinsey & Company & Author 1, 2021).

The largely informal recycling sector already serves economic, environmental and social purposes. An example is a case study conducted at the Mirpur Jhoot Palli Market in Dakar. The site consists of about 350 small to medium-sized shops, collecting, sorting and selling 2000-2500t of waste per month (environmental impact). About 2335 people are working full-time as shop employees, excluding additional people collecting garment waste (economic & social impact). This example shows the impact recycling already has on a lot of people's lives (Tabassum et al., 2017).

For Bangladesh to be successful in a future scale-up of this sector, three major points were discussed in a report released by a network working towards a more

sustainable fashion industry. The following points are seen as necessities in order to attract (foreign) investment:

1. Formalising the waste sector, including recycling.
2. Providing alternatives for current uses of textile waste, e.g. cotton being used for energy instead of being recycled.
3. Ensuring a high quality and continuous supply of materials meant for recycling. (McKinsey & Company & Author 1, 2021)

With a formalisation and scale-up of the existing market surrounding garment recycling, fabrics currently being shipped to China and India, could be turned into an estimated four billion USD in revenues, of which the production of recycled garments is estimated to be worth $1.2 billion USD with possible additional revenue due to new sourcing mechanisms. Furthermore, introducing larger-scale recycling could decrease cotton imports by up to 15%, freeing these monetary and environmental resources (ibid). Moreover, succeeding in a shift towards a more sustainable fashion industry could produce new job opportunities, which could help raise living standards. Such a development could also enforce gender equality. This is because a significant number of workers are women (Das & Shafiquzzaman, 2020).

4.2. Goals & Commitments

The following examines the goals of the international fashion partnership by analysing them through the lens of each key feature of a recycling network and the suitable theory or concept as outlined in the theoretical framework (Chapter 3.8.).

Output - Input Structure

The international fashion partnership sought to reconfigure the fashion industry's fashion chain by promoting a circular fashion system approach in Bangladesh. The partnership aimed to transform the traditional linear value chain of the fashion

industry into a circular value chain that promotes the re-use, repair, and recycling of textile waste, reduces the industry's reliance on virgin materials and decreases the environmental impact of textile production and disposal (Author 1, 2020). In order to achieve this goal of reconfiguring the output - input structure, there were multiple approaches taken simultaneously.

In 2017 international fashion partnership started with a circularity commitment, signed by 100 fashion brands, and aimed at setting targets on circularity (Interview 13). The partnership presented two ways to implement a more sustainable design. Firstly, design for longevity, focusing on high quality, durable, timeless items with easy repair options, e.g. denim products. Secondly, design for circularity, which included a focus on the separability of materials, as well as creating a concept about what each product component will be used for after its first life. In both cases, it was important to make the customer aware of the intent to recycle or repair; this could be done by setting up own collection points for used products or offering repairs in-store (Author 1, 2020).

After evaluating the first results, the partnership realised that the main focus so far was on the consumer market, meaning post-consumer textile waste, while little regard was spent on the manufacturer market, e.g. the pre-consumer waste (Interview 13), "*[...] there was very little vision of what circularity could mean from a manufacturer's perspective.*" (Interview 13, 00:02:43 - 00:02:55) The partnership developed a four-step program to introduce more circularity to the fashion industry (Interview 2; Interview 11; Interview 13). This program consisted of four phases: 1. Design with stakeholders, 2. Piloting solutions, 3. Addressing barriers for scaling, 4. Phasing out and stepping away (Interview 13).

This program was first initiated in Bangladesh (Author 1, 2020). The first phase focused on replacing virgin materials with more recycled fibres (Interview 13). As mentioned above, this included changing the textile and garment articles' design, making them easier to recycle (Author 1, 2020). Additionally, the partnership tried

to use the existing pre-consumer waste streams and utilise them for formal recycling, which could lead to less dependence on virgin material by the manufacturers (Interview 13). Thus, in the second phase, the partnership connected fashion brands and their manufacturers with recyclers in Bangladesh (Interview 2; Interview 11; Interview 13). This was done by setting up textile waste segregation within the manufacturer's facilities, which was then digitally tracked to a recycling solution, and the recycled materials were eventually reintroduced into the brand's new collections (Interview 13). See Figure 5 for a visual representation of the aimed recycling chain.

Collaborating with the fashion brands was relatively accessible, since a lot of the brands already have themselves targets on recycling and circularity (Interview 14). One European fashion brand, working with the international fashion partnership, wants to use 30% recycled and sustainable materials in its products by 2025 and 100% by 2030. And a lot of other fashion brands have similar goals. Additionally, they want to carry out these goals in Bangladesh as this is where they already manufacture their garments (ibid). This aligns also with the European fashion brand's goals on circularity as they want to reduce 56% of its carbon emission by 2030 (ibid).

In the third phase, barriers were recognised that hindered the recycling process and its scalability. These issues, including the informal sector in Bangladesh, are analysed in the next section (Chapter 4.3.). In the fourth and final phase, the partnership planned to step away from the newly created market and let the involved actors take control (Interview 13). Eventually, the partnership plans to expand their program to other countries and markets (Interview 11; Interview 13). In fact, they have already started in Cambodia and Vietnam (Author 1, 2020).

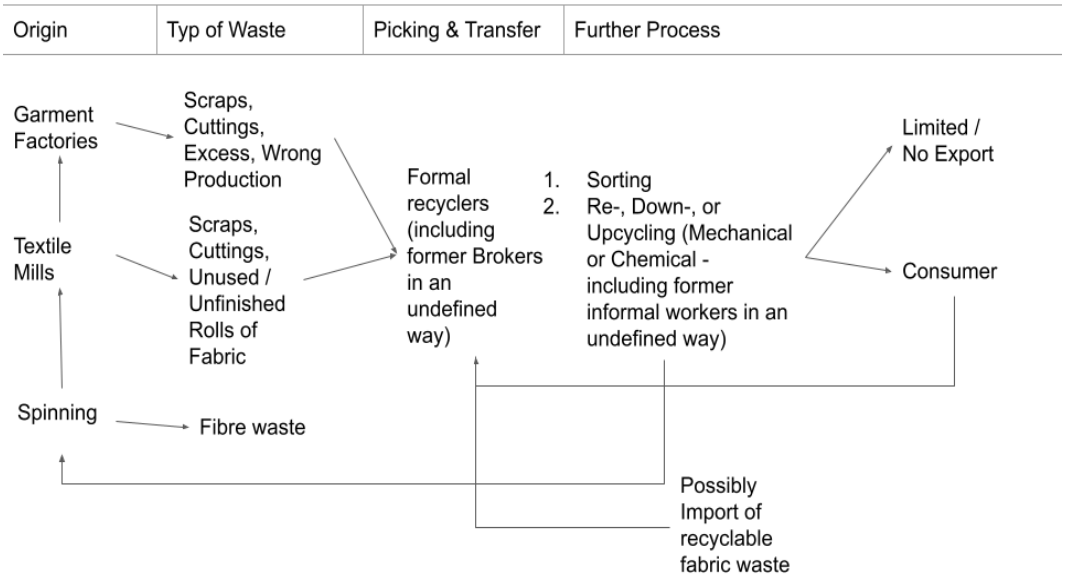


Figure 5, Targeted Recycling Chain in Bangladesh by the International Fashion Partnership, Authors Own Elaboration, 2023

Geographic Scope

The goal of the international fashion partnership was to build a new marketplace through recycling networks. This section looks at how this was achieved on the local and global level, and how involved stakeholders leveraged their different assets. Firstly, the partnership worked with fashion brands, manufacturers, and other stakeholders to develop circular business models that prioritise waste reduction and the reuse, repair, and recycling of textile waste. Their most prominent business model revolved around formalising and scaling up the domestic recycling capacities (Author 2, 2023). Furthermore, the partnership worked with initiatives, such as the "*Circular Fashion System Commitment*", which aimed to support fashion brands in transitioning to circular business models (Author 1, 2020). Thirdly, the partnership worked to develop recycling infrastructure in countries like Bangladesh, where there is currently limited infrastructure for textile recycling. This included interacting with policymakers and attracting investments to support the development of sorting and processing

facilities in Bangladesh, as well as creating markets for recycled materials (Author 2, 2022).

In order to build these recycling marketplaces for the fashion industry in Bangladesh based on discarded materials (Crang et al., 2013), the partnership collaborated with stakeholders from the developing country (Interview 1; Interview 11). Firstly, they connected the fashion brands with the manufacturers and recyclers (Interview 11). Secondly, the recyclers needed to be trained in order to sort garments and textiles correctly for recycling. Only correctly sorted material can become feedstock (Interview 3). Lastly, the fashion brands and manufacturers needed to buy back recycled material in order to close the loop of the industry (Interview 1).

The final goal was for the partnership, as mentioned above, to eventually leave the new industry network, and rely on the fact that they created a formal marketplace for textile waste which is self-sufficient (Interview 1) and that stakeholders regard as valuable enough to invest in (Interview 1; Interview 2), *"[...] The goal of the partnership is to create a marketplace, that is going to be self-sufficient and able to create [an] ecosystem, where other people will come and invest"* (Interview 1, 00:15:18 - 00:15:32). So far, the industry is only focusing on 5-10% of the existing garment waste (Interview 1), but since textile waste is more seen as a resource now (Interview 8), the hope among stakeholders is that more recycling plants will be put up in Bangladesh (Interview 2). As some actors realised, the recycling industry is a huge opportunity for Bangladesh, which already has a crucial relationship to the textile and garment industry as it is the biggest industry in the country and responsible for economic growth and GDP (Interview 12). The recycling industry is said to create more employment, and more low-skilled jobs, which are a good way for people to enter the industry (Interview 1). For this reason, it would be essential for Bangladesh to partake in these new developments, so they would not lose crucial business to other developing countries, like Cambodia (Interview 2; Interview 12; Interview 14).

"[...] we want to do the chemical also and right now people seem to be talking about the chemical recycling out of Cambodia. Why? Because Cambodia is far better on recycle, on renewable energy than Bangladesh's. But then it's like, whoa, we just did so much work and you're just gonna get up and give the other amazing technology to another country. Just cause we don't have renewable energy. How is that fair?"

(Interview 2, 60:03:14 - 60:03:45)

Some stakeholders see even further opportunities to develop the market in Bangladesh in the future. The large Bangladeshi industry association hopes to eventually import post-consumer waste back to Bangladesh (Interview 1). They view it as possible with regulatory support from the EU and the Bangladeshi government (ibid), as well as once technologies are so far that they can take care of all kinds of textile and garment blends (Interview 1; Interview 8). These possible economic benefits are also mentioned by Cuc & Vidovic (2014) and Norris (2012), as an beneficial outcome of Global Recycling Networks.

However, in order to achieve this, there is still a long way to go (Interview 11), and there are a lot of factors, which need to be taken into account. The large Bangladeshi recycler is working directly with factories in order to get their garment waste, and with retailers in order to sell to them the recycled fibres (Interview 8). They noticed that since the Covid-19 pandemic, the demand for garments worldwide has declined, which created a higher price pressure. With less demand for garments, less waste was produced; hence there was less waste in the market and the prices went up. This resulted in them having a harder time selling their recycled textiles since retailers only started to show interest in their yarn when they could offer it at a lower price than their competitors with virgin fibres. Therefore, the large Bangladeshi recycler spent a lot of time negotiating prices and arguing how much the garment waste and the recycled waste is actually worth (ibid). This is in alignment with Norris (2012), who argues that the recycling industry is dependent on the consumption of new garments in the Global North,

and also supports again the argument that the recycling network can be viewed as an extension on the Global Production Network of the textile and garment industry, as they heavily rely on each other (Crang et al., 2013; Herod et al., 2014; McGrath-Champ et al., 2015; Wang et al., 2021).

It is also important to mention that, according to the large Bangladeshi recycler, retailers were only interested in the economic benefit of using recycled materials and not in the environmental aspect (Interview 8) as already discussed in the first part of the analysis (Chapter 4.1.). Additionally, the software provider noted that upcycling of textile waste is considered superior to recycling since it creates a more lucrative product. However, the vast majority of textile and garments in Bangladesh are still sorted and traded in the Jhoot markets, and these materials are not suitable for upcycling (Interview 3). This aspect of the challenges of the informal sector are discussed in the next part of the analysis (Chapter 4.3.). Additionally, formalising the informal sector in Bangladesh was also one of the proclaimed goals by the partnership (Interview 2; Interview 13). This particular challenge is also discussed in the next section of the analysis.

Governance

This section looks at how governance was practised within the partnership. This is looked at through the lens of MSI theory throughout the section. In order to achieve their goals the international fashion partnership needed to be able to work as an intermediary for all the different members of the partnership, and get them to talk about all their different agendas and align these in order to achieve environmental upgrading and value creation by building up a recycling network in Bangladesh. The success of this endeavour is based on good cooperation between the partners (Interview 12; Mena and Palazzo, 2012; Cheyns, 2014; Schouten & Bitzer, 2015).

The relationships between the members and the partnership was mostly viewed positively by the stakeholders, which we interviewed. This could, of course, be due

to the fact that they were all members of the partnership and their viewpoint might be biassed because of this. The large Bangladeshi industry association argued that the relationship with the partnership was crucial as they were able to get easier in touch with fashion brands from the Global North (Interview 1; Interview 11). Additionally, the partnership was able to help the industry association with design patterns of textile and garments articles, which made them more sustainable and recyclable (Interview 2).

The investor, who got in contact with the partnership via representatives in Denmark, regarded their relationship as good. However, they acknowledged that political issues involving some other members of the partnership in Bangladesh created disruptions. Additionally, they had trouble focusing on the commercial aspect of the membership, which was of importance to their stakeholders. Nevertheless, they pointed out they would work with the partnership again in the future if an opportunity should arise (Interview 7).

The large Bangladeshi recycler met the partnership already in 2016 and helped them with setting up their pilot project in Bangladesh. Even though they viewed the relationship as beneficial in the beginning, they eventually dropped out of the partnership as they did not want to help too much their own competition (Interview 8), as the partnership tried to partner with as many recyclers in Bangladesh as possible (Interview 13), "*[...] it came to the point where I felt like, OK, at this point I'm helping my competition get started, more than helping myself*" (Interview 8, 00:37:56 - 00:38:02) Additionally, it was also of importance that the members among each other worked well together. The partnership provided weekly and monthly meetings, in which the members could share their ideas and agendas (Interview 2), as decision-making processes within partnerships are typically shared between the stakeholders (Kolk & Lenfant, 2012). These meetings were generally perceived well (Interview 2). The investor mentioned uncomplicated and productive meetings with the software provider. However, they also felt that some

members, specifically fashion brands, were not overly engaged and they did not have a lot of interaction with those (Interview 7).

The partnership was viewed as essential in order to open doors, provide platforms for policy discussions and get different stakeholders interconnected (Interview 10), as MSIs are supposed to do (Tanimoto, 2019). However, as mentioned above, the push needs to come from all sides (Interview 4; Interview 5), e.g. regulations made by the EU, consumers in the Global North demanding more environmentally friendly produced garments, as a result, fashion brands needing to change their production processes (Interview 10; Interview 14). However, some stakeholders often only join a partnership, like the international fashion partnership, in order to tick a box and do not want to do the work towards real changes and improvements (Interview 12). The partnership introduced at some point a membership fee in order for stakeholders to join the partnership. Afterwards, around 10 fashion brands dropped out (Interview 13). While this might seem discouraging, the partnership in fact regretted not having had membership fees from the beginning in order to encourage commitment (ibid). Additionally, the Bangladeshi government was not viewed as very helpful in providing incentives and regulations to encourage the establishment of this new recycling network. Thus, partnerships like this one are needed in order to create the change necessary to turn the textile and garment industry into a circular fashion system (Interview 10).

Economic, Social and Environmental Upgrading

Turning the fashion industry into a circular fashion system in Bangladesh was the main goal of the international fashion organisation and its international fashion partnership (ibid). This included management of textile waste (Interview 1; Interview 5), smarter production process, in which waste is prevented as much as possible in the first place (Interview 5), less water and energy is consumed, fewer chemicals are utilised (Interview 10) and the lifetime of textiles is prolonged (Interview 5). This is very much in alignment with Global Recycling Network and Global Destruction Network theory, which argues that products should be viewed

beyond their initial purpose and that waste can be disassembled into new resources (Crang et al., 2013; Herod et al., 2014; McGrath-Champ et al., 2015; Wang et al., 2021). This initially only works when a textile network is already in place, which can be expanded on with a recycling network (Crang et al., 2013; Herod et al., 2014; McGrath-Champ et al., 2015; Wang et al., 2021). This was the case in Bangladesh, where a vast textile and garment industry is located. Circularity in this country was still regarded as a new concept in the textile and garment industry (Interview 2). However, interest has grown (Interview 2; Interview 8) as consumers are pushing for more environmentally friendly clothes and fashion brands are realising their responsibility for society and the environment (Interview 11)," *[...] I think there's a push from consumers that the fashion industry must develop and be more sustainable. Well, not fully sustainable in the end, but take, take a responsibility [...]* (Interview 11, 00:08:59 - 00:09:17).

Technological advancements are another factor needed for circularity (Interview 1; Interview 8; Interview 10; Interview 14). The whole recycling process is based on mechanical and chemical processes, and while Bangladesh has a well-functioning mechanical recycling industry, new advances are constantly being made (Interview 1; Interview 8). Further, the chemical recycling process is gaining traction, and Bangladesh is interested in incorporating that aspect of the industry (Interview 1; Interview 2). Since this needs some serious funding (Interview 8), Bangladesh relies on support from actors from the Global North. Stakeholders from Bangladesh are specifically travelling to the Global North in order to stay updated with the latest technology (Interview 8). Meanwhile, in Denmark, test institutions are located (Interview 9) and Danish projects are introducing new technology to the textile and garment industry in Bangladesh through technical assistance and peer-to-peer learning with Danish labour inspectors (Interview 10). The goal is to have the advanced recycling technology utilised in Northern Europe by recycling centres in Bangladesh in the next five years (Interview 1).

As Cuc & Vidovic (2014) and Norris (2012) argue that textile waste recycling supports the nation's economy and creates new jobs. Stakeholders in Bangladesh were starting to realise the potential of this new recycling market and were therefore investing more money, resources and interest into this new industry network. However, in order to make these crucial changes towards circularity, the partnership needed the support and commitment of the whole industry (Interview 4; Interview 5), including the fashion brands, which are producing fashion lines (Interview 11), and the institutions to offer funding and other economic incentives (Interview 2). Additionally, it was also based on consumers in the Global North who dictate the supply and demand within the textile and garment industry (Interview 8). This collaborative global approach created a pool of knowledge and data the partnership gathered and spread through dialogues and conferences with the various stakeholders (Interview 4).

Another crucial factor in order to close the loop is the traceability of waste streams (Interview 2; Interview 8; Interview 14). In order to do that, the large Bangladeshi industry association plans to set up an IT department and build a platform for data collection in order to gather more information for due diligence and reporting on waste streams (Interview 1; Interview 2). Having more exact data on how much waste, meaning how much unused resources, are not exploited so far, could help with getting further funding to build up the recycling network (Interview 1). Meanwhile, the international fashion partnership utilised various frameworks in order to measure their progress in Bangladesh.

The international fashion organisation presented two main tools for tracking and standardising circular design and therefore altering the value chain: the Higg index as an assessment tool and the Cradle to Cradle as an approach to full circularity, as well as a possible certification (Author 1, 2020). Higg Index is a

"[...] industry standard for measuring and improving the sustainability performance of a product or company. It comprises several easy-to-access online tools designed for members from every segment of the industry"
(Author 1, 2020, p.13).

Worldwide the index is used by more than 21,000 organisations. It is comprised of five tools, the Higg Facility Environmental Module (FEM), Higg Facility Social & Labor Module (FSLM), Higg Brand & Retail Module (BRM), Higg Materials Sustainability Index (MSI), and Higg Product Module (PM) (Sustainable Apparel Coalition, 2023). The Cradle to Cradle standard provides a framework that certifies materials and products for

"[...] material health, reutilisation, renewable energy, water stewardship and social fairness, creating a collection of urgently needed 'positive' materials to design with from the beginning and at scale"
(Author 1, 2020, p.13).

Additionally, the international fashion partnership utilised a KPI (Key Performance Indicator) framework, which was kept accountable for by UNIDO and was regularly checked by teams (Interview 13). The metrics included hard and soft KPIs, which included five pillars: smart material choices, better way to systems, respectful and secure work environments, circular systems and resource stewardship. Furthermore, the partnership developed a code of conduct for recyclers in Bangladesh to comply with certain basic standards and to improve accountability (ibid). However, due to few available resources, the partnership mostly had to rely on self-reporting by the partnership members and were only sometimes able to visit the facilities (Interview 7). Instead, the members utilised their own reporting system in order to gather data on progress. The investor needed to report to its donors and they did that via a framework which included environmental and commercial aspects, such as infrastructure, spending, environmental impact, e.g. emissions avoided (ibid). The large Bangladeshi

recycler first of all used sales as a good indicator for the demand for recycled cotton. Second, they also applied some environmental management metrics in order to track their energy consumption and waste reduction (Interview 8).

These various forms of tracking progress and results were an important part of measuring the impact of environmental upgrading (Cuc & Vidovic, 2014). Only by having the data can stakeholders conform to international standards, gather more funds and expand their industry. For a developing country like Bangladesh, this can be essential in order to support the nation's economy by introducing new jobs and livelihoods (Cuc & Vidovic, 2014; Norris, 2012). However, at the same time, progress regarding tracking was also essential in order to measure the impact on the environment (Cuc & Vidovic, 2014). Also to answer the question if these recycling networks supported by the international fashion partnership actually fulfilled their goals in regard to creating a circular fashion system. Since the tracking of progress was so far not entirely controlled and there were no penalty regulations in place for non-compliance, the whole network is still very unreliable. Thus, it is difficult to predict if the partnership is succeeding in reaching its goals of environmental upgrading and circularity through building up recycling networks in the fashion industry in Bangladesh.

Institutional Context

The international fashion partnership and their work in Bangladesh was generally perceived as successful. A lot of actors credited them with putting the topic of circularity on the agenda of the fashion industry (Interview 8; Interview 10; Interview 11) and making the challenges involved visible (Interview 11). Additionally, they argued that Bangladeshi stakeholders were starting to realise the potential of the recycling industry (Interview 11; Interview 8), which resulted in more recyclers within the industry (Interview 1; Interview 8). Furthermore, the partnership identified barriers and interventions, and they suggested some recommendations on how to deal with those issues. Not all of these recommendations have been implemented yet, since that takes time (Interview 10).

While MSIs can set some standards, the implementation and enforcement of these standards depend on other more authoritative and powerful actors (Gupta & Ladrech, 2018).

Looking at the partnership and its work in connection with the other members through the lens of the framework on civic governance and separating power structures, the Bangladeshi industry association can be viewed as the legislative power. They were considered by the textile and garment industry as the authoritative actors, even more than the Bangladeshi government (Interview 4). However, they saw themselves as influenced by the international fashion partnership itself (Interview 1; Interview 2), and also other actors saw the partnership as the ones setting standards and making recommendations for the recycling network (Interview 10). Thus, it seemed that the industry association and the international fashion partnership shared the legislative power within this partnership (Tallontire, 2007). The executive power seemed to be divided among the various stakeholders within the recycling network as all saw each other responsible for implementing new environmental standards within the production process (Interview 4; Interview 5), recyclers, manufacturers, but especially, fashion brands were viewed as the ones who should be pushing for changes (Interview 10). The main issue arose when looking for the judicial power within the partnership. As mentioned above, there were no real audit procedures, inspection and conformity assessments in place (Tallontire, 2007) to assess the progress made by the international fashion partnership, even though the partnership needed to report to UNIDO (Interview 13). Consequently, it was difficult to track if environmental upgrading was achieved within the partnership, which was one of the major goals and requirements for turning the fashion industry into a circular fashion system.

4.3. Challenges

The following examines the challenges faced by the international fashion partnership while trying to implement the new recycling chain structure in Bangladesh. These are also analysed through the lens of each key feature of a recycling network and the suitable theory or concept as outlined in the theoretical framework (Chapter 3.8.).

Output - Input Structure

In our interviews with recyclers, it became clear that the availability and quality of input materials pose a problem (Interview 8). This in turn influences quality and quantity of the output of the described recycling chain. Moreover, limited consumer demand for sustainable and recycled products poses a challenge. This makes it difficult and possibly unattractive for fashion brands and manufacturers to invest in sustainable recycling practices (McKinsey & Company & Author 1, 2021). While there are initiatives to promote awareness and education, and there has been a customer demand push towards more sustainable clothing options, pricing is still the main driver of most buying decisions (ibid). During our research, we found an interesting pattern regarding the perception of customer behaviour in different parts of the world. Specifically, Western consumption habits were described by Asian actors as positive in their development. They were seen as conscious consumers that choose to consume differently, "*[...] the Generation X and the Generation Z, they don't want to buy fast fashion stuff*" (Interview 2, 0:49:2 - 0:49:16). While on the other hand, Western actors saw consumption habits in the Global North more critically, urging them to rethink consumption (Interview 5; Interview 6), and seeing a significant challenge in making people want second-hand or recycled clothing (Interview 6). The difference in perception, depending on the lens, was distinctly noticeable. Regarding consumption in Asia, it was largely criticised that consumption appears to be less conscious also in younger generations. Although there is a strong tradition of hand-me-downs at least in poorer families, the problem is regarding the emerging middle class as they

consume a lot more new but relatively less expensive clothing (Interview 2). Again, this is a problem, "*[...] post-consumer recycled fibres, at least mechanically recycled, are a little bit more expensive [...]*" than others (Interview 8, 0:20:31 - 0:20:35).

Geographic Scope

Traceability of raw materials, as well as monitoring social and environmental conditions were identified as challenging. This was found at all levels, from local to international. While fashion brands and consumers need to accept mixed-origin materials, it must remain clear where they come from. Due to the closely knitted local actors, we assume there may be a certain degree of traceability also in the informal actor. But this then relies on word of mouth and is not objectively usable in solving the issue of traceability. Moreover, the traceability of items and materials can be interrupted by missing infrastructure, which can influence the certification and quality of recycled goods (Author 2, 2022, 2023). Currently, even recyclers working with large international fashion brands cannot tell with certainty where materials are coming from (Interview 8; Interview 14). Additionally, recyclers struggle with the access to recyclable waste and the consistency of the quality provided (Interview 7). The described challenges appear to be typical production and interconnectedness issues found in Global Recycling Networks and align with the theory (Auld, 2014; Cheyns, 2014).

Governance

One way to approach most of the arising challenges is to encourage further collaboration among fashion industry stakeholders. This is something the international fashion organisation as well as the partnership, are very engaged in, as they believe that only collaboration and communication can lead to circularity (Author 2, 2022; Author 2, 2023). Although in global recycling networks some stakeholders can act as effective connectors, there were a number of issues mentioned when talking about commitment to working on a common goal. While

some described it as natural that there are bigger and smaller gainers and different goals within the recycling chain, the partnership was perceived as harmonious (Interview 2). Others saw larger members mostly pushing towards meeting their own goals and quieting smaller stakeholders (Interview 12). While we cannot verify any claims, it was of interest to us that there appeared to be a gap in knowledge but also in mindset among the members. Some actors pushed for change, while others took a passive role, "*[...] so, mindset has to be changed*" (Interview 3, p.2). Some fashion brands, in particular, got called out for having "*[...] a little bit less commitment*" (Interview 13, 7:40 - 7:44) in the partnership. These fashion brands were also perceived as only putting in minimum effort to barely meet standards in order to use the membership for advertisement purposes (Interview 12).

Economic, Social and Environmental Upgrading

Even though circularity is a hot topic in the industry (Interview 10), actors usually do not have the capital to take the necessary next step regarding technological advances that would lead towards a more circular system (Interview 8). As an interviewee described the issue:

> *"[...] for us to bring in that technology, which is something that we would eventually like to do [...] those are not 10s of millions of dollars of projects. Those are $100 million projects and above, you know. And so that's a lot of capital that we don't really have at this point"*
> (Interview 8, 00:24:50 - 00:25:09)

Especially for smaller fashion brands and manufacturers, the cost of implementing sustainable recycling practices can be too high. MSIs can promote the development of circular business models that prioritise the re-use, repair, and recycling of textile waste in order to reduce these barriers (Author 1, 2020). We found that common funding schemes are usually attached to a certain timeframe, and many investors perceive circularity as a long-term project as less attractive (Interview 11) The long

timeframes needed for planning and implementing a system change step-by-step are hardly good from an economic perspective (Interview 8), where quick scalability and profit driving forces (Interview 1). MSIs can help to raise funding for members and give advice on how to use it best (Interview 12), but to do so, they frequently need to be able to receive funding themselves (Interview 11). A shift in priorities of private investors and classic funding schemes seems necessary to fit such large-scale projects and to facilitate upgrading long-term. Still, governmental subsidisation or funding should also be considered for actors and MSIs to receive the resources needed.

Another challenge we became aware of while conducting this research is the lack of infrastructure for textile recycling. The small number of recycling plants made it difficult to create a closed-loop system where materials can be recycled efficiently (Author 2, 2023). We found that there were problems regarding the current number of plants (Interview 1), and the technology used in these plants (Interview 2). The companies producing more advanced machinery for recycling frequently hold copyrights on the designs, making it significantly more expensive to get modern machinery. This is amplified by the small number of producers worldwide, which lead to a monopoly-esk situation with high demands and low supplies (ibid). This lack of modern machinery makes it even more difficult to recycle synthetic fibres, which already poses a problem in the current recycling system (Interview 11). Besides the technical issues, it appears to be a problem that fashion brands want recyclers to only use waste sourced from garments of that brand to make the new yarn (Interview 2). Such behaviour leads to capacity losses in the recycling facilities and makes the process much more complex. In order to streamline processes, fashion brands must accept using recycled yarns of high quality but with different origins. This reconnects to the already mentioned issue of traceability. The international fashion partnership worked to address these issues by supporting the development of recycling infrastructure in Bangladesh. Additionally, harnessing the potential of export processing zones, as described in Pakistan (Chapter 4.1), could help achieve the goal of circularity while adding to the

revenue of recycled products (Author 2, 2022; 2023). However, it is a slow and resource-intensive process that frequently needs funding, which we found to be a challenge. This is especially true due to the very limited support by the government.

Another issue is that recycling can be a (natural) resource-intensive process and can have a negative impact on the environment. A significant amount of energy and water is used; therefore, a tracking system is needed. Implementing such a system on a large scale would also improve traceability (Interview 2). If Bangladesh is implementing green chemical recycling, a larger amount of renewable energy is needed than is currently available (Interview 8). Apart from these resources, the overall carbon footprint of recycling has to be considered (Interview 2). Currently, logistics are one of the main problems (Interview 13), as the waste gets shipped around the world, back and forth between the same countries, to be recycled (Interview 1). It was pointed out that it is essential to consider the overall emissions, as one of the main goals of circularity is to fight climate change (Interview 3).

As it is a low-lying country, Bangladesh is especially susceptible to the impacts of climate change. Rising sea levels, more frequent and severe floods, cyclones, storm surges, droughts, and heatwaves are some of the impacts of climate change that threaten the country's economy, infrastructure, and people's lives and livelihoods (The World Bank Group, 2022). Identified in connection to climate change implications is the risk of supply chain disruptions. The industry relies heavily on raw materials, such as cotton and synthetic fibres, which are sourced from countries around the world (Bag et al., 2023). Climate change-related disruptions of this fragile just-in-time system can affect the production and transportation of these materials, leading to shortages and price increases. This can create significant challenges for Bangladesh's garment industry, which is heavily dependent on imported raw materials (Hasan & Mahmud, 2017).

As already touched on, the potential for increased production costs is connected to this issue (Chapter 4.1.). The country is already facing a range of environmental challenges, such as water scarcity, soil degradation, and air pollution, which can increase production costs for manufacturers. Climate change is expected to accelerate these challenges, potentially leading to higher energy, water, and other resource costs. This could have significant implications for the competitiveness of Bangladesh's garment industry, as buyers may shift their orders to countries with lower production costs (Bag et al., 2023). Additionally, climate change-related events could cause severe damage to infrastructure, including factories and transportation networks, which can then disrupt the production and distribution of garments. Production losses, delays in orders, lost sales, and reputational damage for manufacturers would be inevitable (The World Bank Group, 2022). Moreover, extreme weather events could also threaten the safety and well-being of workers in the garment industry (Hasan & Mahmud, 2017).

Overall, the implications of climate change for the garment industry in Bangladesh are significant and far-reaching (The World Bank Group, 2022). The country's vulnerability to climate change underscores the need for the industry to take steps to adapt to these impacts, including improving water and energy efficiency, diversifying supply chains, and investing in more sustainable production practices, and promoting circular economy approaches to reduce waste and resource use (Hasan & Mahmud, 2017). Although MSIs can be of help in targeting environmental problems, ultimately, governmental regulations have to be put in place and enforced (Interview 4).

Institutional Context

Regarding the institutional context, we looked at several challenges the organisation encountered while altering the value chain according to its vision. The challenge mentioned most by our interview partners and frequently referred to as the biggest and most challenging to overcome (Interview 1; Interview 2; Interview

13; Interview 14), was the large informal sector in Bangladesh's garment industry. Industrial or pre-consumer waste, the largest share of garment waste in Bangladesh (Author 2, n.d), is primarily handled in the informal sector. Although there are strong connections between formal and informal markets (Interview 2), e.g. one interview partner receives 20-30% of their recycling material from the informal market (Interview 8), it remains difficult to formalise (Interview 1). Due to its size, role and economic value, circular solutions, as proposed by the international fashion organisation, cannot be scaled "*[...] without that being appropriately addressed*" (Interview 13, 00:11:00 - 00:11:04).

According to our findings, the main factor holding back change was the fear that informal stakeholders currently in power could be disrupted. There was a fear of losing a well-running business as well as social standing (Interview 2). And there might be a chance that jobs will get lost (Interview 1), if the informal market is not well integrated into the new value chain (Interview 4). Training was provided to make integration successful and give people a meaningful place in the value chain (ibid). Our findings show an optimistic view of the implications of formalisation. Jobs could become more permanent, new employment possibilities could be created (Interview 4), and labour rights, as well as safety measures and social standards, could be easier implemented and enforced (Interview 2). MSIs can play a significant role in encouraging a dynamic change. This becomes visible, especially in network building between the formal and informal value chain, by encouraging communication; the closer they get, the more they merch (Interview 8).

As the paper has already showcased, another challenge is the political situation within this complex value chain. It involves many different stakeholders, from designers and manufacturers to retailers and consumers. This can make it difficult to coordinate efforts to promote sustainable recycling practices (Author 2, 2022). Additionally, laws vary across the value chain; therefore, things such as waste generation, export limits and related taxation must be discussed. Apart from the

proposed ban on garment exports, tax policies regarding textile waste came up several times during the interviews (Interview 1; Interview 2; Interview 8).

As the current policies are not perceived as favourable for the goals set regarding circularity, the government is being urged to put up regulations and incentives such as tax breaks (Interview 2) and other regulations that could help to accelerate changes (Interview 8). We found that many of our interviewees perceived the Bangladeshi government as slow and unable to implement and enforce the regulations promoted (Interview 8; Interview 10; Interview 12). There appears to be a lot more hope in the European legislation stepping in with regulations regarding circularity and sustainability. Such as the extended producer responsibility, which produces a ripple-down effect, by which fashion brands selling in Europe are responsible for ensuring certain social and environmental standards in their value chain, which also secures traceability of the products on the market (Interview 3). Additionally, some countries are considering the implementation of climate impact labels, which is already being provided by some recyclers (Interview 8). This dilemma showcases again the challenges concerning judicial and legislative governance within the investigated value chain. While there is will and action in the executive space, crucial support remains missing.

To conclude, there were many challenges the organisation faced, none of which appeared to be easy to overcome. The approaches to tackle these primarily systemic challenges seem promising. However, the differences between the members' size, goals and resourcefulness will make constant discourse inevitable in order to achieve common goals.

5. Conclusion

The following answers our three research questions as well as elaborates on the implications of this study for future research.

5.1. Research Findings

This research aimed to answer three research questions:

- What does Bangladesh's current garment and textile recycling chain look like?

Bangladesh's current garment and textile recycling chain is characterised by a mix of formal and informal actors, with the informal sector playing a particularly important role in sourcing and processing pre-consumer textile waste. The involvement of multinational companies in the recycling chain and adequate policy-making may provide new opportunities for formalising and improving working conditions in the informal sector. Bangladesh is one of the biggest emitters of pre-consumer waste, and thus, the recycling chain holds vast potential for local and international actors to create a circular fashion system within the country.

- How did the international fashion partnership seek to alter this recycling chain?

The international fashion partnership took a number of steps toward its goals. Most importantly, it raised awareness in fashion brands and other stakeholders to create the momentum needed to start a successful change process. It brought together a diverse group of actors committed to the common goal of making the fashion industry more sustainable. By working together, the stakeholders could share knowledge and best practices, and collaborate on projects promoting circularity in the fashion industry. This work was generally perceived as successful by the participating actors.

Additionally, the organisation was able to educate about the potential, economically and environmentally, of recycling networks and get more actors involved. However, there were no reliable tracking processes in place yet, and therefore, it was hard to identify how much impact these changes have on the environment. Additionally, several challenges needed to be addressed to achieve the partnership's vision of a sustainable and circular fashion industry.

- Which challenges were encountered during the implementation process?

One of the main issues the organisation faced was the informal sector. They encountered resistance from the informal sector throughout their work, which was worried about losing its economic role. Thus, convincing these actors of the further economic possibilities of joining recycling networks within the formal sector was important. Another challenge presented the general lack of infrastructure for textile recycling as there were only a small number of recycling plants, and these lacked the technology needed to recycle all the textile waste materials and blends. However, since the organisation started its work in Bangladesh, there have been more recycling plants built, and there is a constant exchange between actors from the Global North and Bangladesh about recent technological advances. However, expanding the recycling network also requires more energy consumption and better logistics between the various stakeholders, which also needs to be built up in Bangladesh. The lack of funding was another challenge the organisation needed to take care of. It was again essential for the organisation to convince stakeholders of the environmental importance of recycling. However, the economic argument proved to be more convincing in many cases. Additionally, the organisation realised that regulations by the EU and USA need to be pushed in the future, as fashion brands will have to follow these laws, and these brands will collaborate with their suppliers and manufacturers to introduce circularity into their production processes. Furthermore, changing consumer behaviour and attitudes towards fashion is crucial to creating a sustainable fashion industry.

5.2. Research Implications

Global recycling networks and, to some extent, global destruction networks have been explored in regard to their environmental and economic benefits for both stakeholders in the Global North and Global South. There has been extensive research regarding creating new value through recycling processes which questions the established understanding of production processes and the governance within those. However, further investigation into the topic has been advised by scholars.

Gregson and Crang (2015) suggest that recycling should be researched regarding geo-political agendas, especially how the resource recovery process affects the Global South. This is backed by Herod et al. (2014), who recommend finding out more about the capitalist nature of labour processes in recycling and destruction networks. Additionally, Barrientos et al. (2011) argue that more focus should be made on the process of environmental upgrading and its effects on economic and social upgrading, as workers and companies linked within the same network experience different benefits. Crang et al. (2013) suggest further study into whether GRNs will remain as they are so far or if they will transform. Moreover, they wonder if existing or future recycling networks will be replicated in other countries in the Global South, especially China, and how these will be affected by the economic structure of the Global North.

Our research aimed to close some of these gaps mentioned above by investigating, on the one hand, if environmental upgrading has been achieved through the international fashion partnership and its members, and on the other hand, if and how the organisation has managed to change the existing value chain into a recycling network. This was done, as Herod et al. (2014), Gregson and Crang (2015), Riisgaard et al. (2020), and Lund-Thomsen et al. (2021) suggest, by looking into the agency of the various stakeholders and how they pushed towards realising their goals in regard to environmental upgrading. Additionally, we looked into who benefits from this value creation, as Barrientos et al. (2011)

recommended. Therefore, we argue that our study helps to fill some of the gaps mentioned by researchers.

Additionally, our research aimed to close some gaps concerning Multi-Stakeholder Initiative theory, as several gaps are detected in the literature regarding MSIs. Most revolve around further exploring power dynamics, including how different stakeholder shape MSIs agendas and their influence on GPNs and GVCs (Riisgaard et al., 2020; Lund-Thomsen et al., 2021). Other authors, such as Hassan (2020), see a gap in exploring the effectiveness of multi-stakeholder initiatives in addressing gender-based challenges and other forms of discrimination in GVCs. Furthermore, a gap is commonly seen in research about the long-term sustainability of MSIs and their ability to create lasting CSR changes (Hassan, 2020; Riisgaard et al., 2020). We found a significant gap in understanding the motivation of intermediaries in facilitating CSR and sustainability initiatives in GVCs, as well as understanding how MSIs are implemented on the ground, including the effectiveness of the existing MSIs regarding CSR. While all of these things have been touched upon in research, they have yet to be regarded under the perspective of the Global Recycling Network and Global Destruction Network theory.

We researched who benefits from this value creation as Barrientos et al. (2011) recommended in regard to Multi-Stakeholder Initiative theory. Furthermore, we noticed how different actors utilised their resources to support their own agendas, which supports Levy's (2008) framework on political contestation in Global Production Networks. And we applied Tallontire's (2007) framework on civic governance and separating power structures in order to locate which stakeholders employed legislative, judicial and executive power structures and how this affected the endeavour of the international fashion partnership. This study can be used to build on and compare with future research regarding the theories mentioned above and frameworks.

Within this study, we encountered several topics, which may be of interest to research in the future. Concerning the international fashion partnership, we argue that the impact of Covid-19 on their project in Bangladesh might be of interest, as it was started shortly before the global pandemic broke. We purposefully omitted this topic within our study as we felt it would broaden our area of research too much. However, several of our interviewees mentioned Covid-19 as one of the challenges faced while working within the partnership. For this reason, this might be an interesting topic to investigate further.

One interesting point we encountered was the potential environmental impact of the circular fashion system, in this case, the circular fashion system. Some interviewees asked if circularity would lessen the ecological footprint of the textile industry or, instead, even increase it. This is a fair point to be regarded as textile waste is shipped around the globe to be recycled and re-used in the fashion industry. Additionally, the recycling process in itself uses water and energy. Using virgin fibres might have a smaller environmental imprint than recycled ones. Thus, as we already mentioned above, it is important to introduce a tracking system to measure success in regard to the environmental impact, and this predominant issue should be further investigated.

5.3. Policy Implications

We analysed the international fashion partnership and their endeavour to turn the textile and garment industry in Bangladesh into a circular fashion system. It has to be mentioned that the project of the organisation in Bangladesh is not completely done yet as they are in the phasing out part, meaning the partnership is leaving the other stakeholders to their own devices and ending their project in the country. Thus, it might be too early to see all the changes the partnership created or not created within the fashion industry. However, the way they encountered certain challenges and tried to overcome those can be educational for future projects and partnerships. While some of the issues, e.g. the informal sector and the institutional context, might be unique to the Bangladeshi environment, other ones were more

universal, like the required global approach of all stakeholders involved, including funding and technological support, and the need for a tracking system to measure success in regard to the environmental impact. Furthermore, the need for determined regulations and set restrictions on what is expected from stakeholders working within the recycling chain. These have to be embedded in laws which need to be strictly imposed, since otherwise changes are hardly happening. Accordingly, we argue that our research might help other partnerships, like the international fashion partnership, to overcome challenges which present themselves in the future to them when trying to introduce textile recycling networks in developing countries.

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